

>From: Bgould
>To: Maverick_01778@MSN.Com
>CC: BMonahan@Wayland.MA.US, AIrwin@irwinengineers.com
>Subject: Re: Former Raytheon Site in Wayland
>Date: Mon, 06 Oct 2003 08:55:12 -0700
>
>Mr. Shayan-
>
>Sorry for the delay in replying, but I did not get your email message until this morning. If you are still unable to access the ERM 'extranet' website, you can review paper copies of all published reports at either the Wayland Board of Health or Public Library repositories.
>
>I will attempt to provide answers to the specific questions you asked. However, I ask you remember that I am the advisor to the Town of Wayland on this project, not the project manager. You may want to contact John Drobinski at ERM (617-646-7800) for more detailed information.
>
>1) What is concentration of the contaminant?
>
>There are several contaminants. In the south portion of the Site, the primary contaminants of concern (CoCs) are chlorinated solvents in groundwater, especially trichloroethene (TCE). The highest PCE measurement to date at this portion of the Site is 790 ug/L (ppb) in well MW-102 on February 11, 2003.
>
>In the north portion of the Site, the primary CoCs are also chlorinated solvents in groundwater. Waterloo profiling identified a maximum of 17,040 ug/L PCE at 20.10 feet in groundwater from sample point B-241. However, after installation of shallow monitoring well MW-261S at this location, analysis in January 2003 identified much less PCE (4,400 ug/L).
>
>In the west (wetland) portion of the Site, the primary CoCs are PCBs and metals (notably copper & chromium) in sediment. The maximum PCB concentration was 540 mg/Kg (ppm) at location T-1-3. The maximum concentration of Cu (22,000 mg/Kg) and Cr (29,000) both occur at sample location T-5-6.
>
>2) [Is there a] better diagram to show well locations, groundwater contour map, which includes the hydrological flow direction for each aquifer (shallow, lower, bedrock), what is the groundwater, and contaminant migration.
>
>The most comprehensive current 'diagram to show well locations' is probably Figure 2 in ERM's "Final Scope of Work" report dated June 13, 2003. Figures 5 & 6 in this report illustrate shallow and 'lower'

groundwater elevation contours for the north portion of the Site, respectively.

>

>Figures 4 & 5 in ERM's December 30, 2002 "Phase IV Remedy Implementation Plan" depict shallow overburden and deep overburden groundwater contours for the entire Site, respectively.

>

>ERM has not prepared any bedrock groundwater flow maps since they have relatively few bedrock monitoring wells.

>

>As far as (groundwater) contaminant migration, Figure 7 in the "Final Scope of Work" report shows plan views of four different chlorinated VOCs at the north portion of the Site, and Figure 8 shows cross-section views to help visualize the vertical (downward) contaminant migration. Figure 6 in the "Phase IV Remedy Implementation Plan" report shows a plan view for the south portion TCE contamination (ignore the north portion TCE contours on this map; the June 2003 Figure 7 supercedes them).

>

>To my knowledge, ERM has not prepared any maps of contaminant migration at the west portion of the Site, since they believe this contamination is not moving.

>

>3. [Please provide] soil boring/well logs for each well and corresponding locations; well number for each location; water quality data for each well, hard core results for sampling over time.

>

>ERM provides this information in various tables and appendices to the aforementioned reports. I confess I do not know what you mean by 'hard core results for sampling over time.' Most of ERM's tables summarize all pertinent testing to date for the locations and categories tabulated.

>

>4. [What is the] Proposed groundwater treatment and their [treatment] locations and proposed remediation.

>

>In the south area, Raytheon has proposed in-situ chemical oxidation (ISCO) using permanganate solutions. They have pilot-tested this approach as detailed in ERM's September 11, 2002 "Release Abatement Measure [RAM] Plan," January 31, 2002 "[RAM] 120-Day Status Report," September 18, 2002 "[RAM] Plan Modification #1," July 25, 2002 "[RAM] Six-Month Status

Report," December 30, 2002 "Phase IV Remedy Implementation Plan,"
January
31, 2003 "Pilot Study Status Report," and July 31, 2003 "[RAM] Six-
Month
Status Report."

>

>Raytheon has not finalized any remediation plan for the north portion
of
the Site. Preliminary thinking is they will use ISCO upon completing
their
assessment.

>

>5. Provide the proposed risk assessment.

>

>Raytheon provided a risk characterization for the entire Site in the
November 28, 2001 "Phase II Comprehensive Site Assessment" report. ERM
conducted the human health risk assessment on behalf of Raytheon and
Entrix
conducted the ecological risk characterization (for the wetlands
portion of
the Site). Entrix updated the ecological risk assessment based on
comments
by EPA and others, as presented in the September 2003 "Revised
Application
for Risk-Based Disposal Approval" report.

>

>6. Why are there so many proposed well locations in the wetland buffer
zone?

>

>Raytheon is attempting to fully characterize groundwater contamination
at
the north portion of the Site. The plume (as mapped so far) extends
almost
due west, into the wetlands buffer area. Since the Sudbury River flows
northerly, hydraulics dictates that the contaminant plume will also
trend
northerly at some point. To track the plume, ERM has proposed several
well
clusters along the most likely flow paths. Each cluster will sample
four
discrete depths (corresponding to the shallow, middle, and lower
unconfined
aquifers, along with bedrock), and Raytheon will need to place several
clusters along the plume flow path to fully characterize groundwater
contamination.

>

>7. Is there a change in the Licensed Site Professional?

>

>No, Mr. John Drobinski of ERM remains the LSP-of-record for the
(entire)
Site.

>

>8. What is the significance of Waterloo Profiler locations estimated
depth

to bedrock? Is this a well or soil boring?

>

>The Modified Waterloo Profiler equipment cannot advance its sample probe into competent bedrock. Therefore, it is useful to reliably estimate the depth to bedrock before determining if this equipment is appropriate. It is actually neither a well nor a soil boring; the profiler advances a solid-tipped probe vertically downward through the soil much like a cone penetrometer. It is equipped with down-hole screening instrumentation and can pump relatively undisturbed groundwater samples to the surface for further testing. However, it does not collect soil samples, and once withdrawn, cannot collect subsequent groundwater samples. Therefore its best use is to map out locations for subsequent soil borings and monitoring well installation.

>

>9. Provide the community minutes for this action.

>

>I trust that Brian Monahan or someone else can get you a copy of the minutes from the Conservation Commission meeting (June 26, 2003) where Raytheon asked for a declaratory ruling on preliminary assessment in the wetland or buffer zone at the Site. Is this what you mean by 'community minutes'?

>

>10. In order to get an accurate picture of the plume, are there any existing monitoring wells on the Old Raytheon property or offsite besides what is shown on Figure 2?

>

>Figure 2 in the June 2003 "Final Scope of Work" report depicts all the pertinent on-Site and near off-Site wells that I am aware of. From November 2001 through April 2002, DEP installed a series of off-Site wells (actually temporary sampling points which they left in place) north of the Site. The June 2003 Figure 2 depicts the nearest three of these (DEP-19S/M/D, DEP-20, and DEP-21). It does not appear that any of the remaining DEP wells are located within the chlorinated VOC plume originating from the north portion of the former Raytheon facility.

>

>11. Is there a map of the spill site?

>

>I am not certain that I understand what you are asking for. There are numerous figures illustrating portions of the 'disposal site' (as DEP terms

it), several of which you have no doubt seen. If you are asking about a map that shows the mechanism of PCE release, there is none because Raytheon maintains they do not know precisely where or when the release(s) occurred.

>

>12. Is there a map of the remediation site?

>

>Again, I am not certain that I understand what you are asking for. Figure

4 in the September 2003 "Revised Application for Risk-Based Disposal Approval" report (among numerous others) depicts the location of proposed wetlands remediation.

>

>13. My concern is that contaminants are in the lower aquifer and there is a possibility of the lower and surface aquifers get[ting] mingled. Are there any active ongoing actions taking place to retain the contamination?

>

>Raytheon has not implemented or proposed any measures to contain groundwater contamination. Over much of the PCE plume areas (both north and

south), the body of contaminated groundwater is too deep to place any kind

of physical barrier (such as a slurry wall or funnel-and-gate system). In

the south area, the existing location and concentration of contamination does not warrant hydraulic control through use of pumping wells. In the north area, it is too early on in the assessment phase to consider the feasibility of hydraulic control (we do not yet know the plume extent). Be

assured that the Town of Wayland will have Raytheon consider hydraulic control once they get a handle on the degree and extent of contamination at

this portion of the Site.

>

>Benson R. Gould, LSP, LEP

>Principal

>CMG Environmental, Inc.

>600 Charlton Street

>Southbridge, MA 01550

>508-765-8510

>fax 765-8515

-----Original Message-----

From: Shahram Shayan [mailto:maverick_01778@msn.com]
Sent: Tuesday, October 07, 2003 9:44 AM
To: bgould@cmgenv.com
Cc: BMonahan@Wayland.MA.US; AIrwin@irwinengineers.com
Subject: Re: Former Raytheon Site in Wayland

I am concern about the short and long term public health impact on the toddlers and children? Has the ASTDR (Agency for Toxic Substances and Disease Registry, US Department of Health and Human Service) been asked to provide a public health assessment? If not can ASTDR be asked to perform a public health assessment?

"Ben Gould" <BGould@CMGenv.com> on 10/10/2003 05:21:06 PM

Please respond to <BGould@CMGenv.com>

To: "'Shahram Shayan'" <maverick_01778@msn.com>
cc: "Ed Madera" <Edwin_P_Madera@raytheon.com>, "Steve Calichman" <SCalichman@Wayland.MA.US>, "Andy Irwin" <AIrwin@irwinengineers.com>, "Anette Lewis" <ASLewis33@MSN.Com>, "Brian Monahan" <BMonahan@Wayland.MA.US>, "Don Hollander \ (via H.Lewis\)" <HLewis@Wayland.MA.US>, "Jeff Ritter" <JRitter@wayland.ma.us>, "Linda Segal" <LMSegal@Comcast.Net>

Subject: RE: Former Raytheon Site in Wayland

Mr. Shayan:

In answer to these brief questions-

1) Raytheon has tested the private water supply well at Russell's Garden Center, which is the only known potential drinking water source impacted by the groundwater contamination migrating from the former Raytheon Site. Contaminated groundwater migrating off-Site is too deep for vapors emanating from groundwater to pose any measurable public health impact.

2) To my knowledge, no one has sought to obtain ASTDR assistance or public health assessment. However, such an assessment is part of the human health risk assessment ERM conducted for Raytheon (see their Phase II report).

3) I am sure the Public Involvement Plan (PIP) group could ask ASTDR to

perform a public health assessment. I do not believe it would be particularly useful, since ERM has already provide this information in publicly-available documents. Thus ASTDR may refuse on the grounds of no incremental benefit to the public.

You seem to be well-informed and have legitimate and highly pertinent questions. May I suggest that you attend the next PIP meeting(s) and ask Raytheon and their consultants directly? This is the express purpose of the PIP, and your input would be most welcome. If you provide me with your address, I will ensure that you get placed on the PIP mailing list.

Ben Gould
CMG Environmental

"Ben Gould" <BGould@CMGenv.com> on 10/10/2003 06:07:29 PM

Please respond to <BGould@CMGenv.com>

To: <maverick_01778@msn.com>
cc: "Ed Madera" <Edwin_P_Madera@raytheon.com>, "Steve Calichman" <SCalichman@Wayland.MA.US>, "Andy Irwin" <AIrwin@irwinengineers.com>, "Anette Lewis" <ASLewis33@MSN.Com>, "Brian Monahan" <BMonahan@Wayland.MA.US>, "Don Hollander \ (via H.Lewis\)" <HLewis@Wayland.MA.US>, "Jeff Ritter" <JRitter@wayland.ma.us>, "Linda Segal" <LMSegal@Comcast.Net>

Subject: Addendum to my recent previous email

Mr. Shayan:

Mr. Andy Irwin pointed out that my last reply to you might be misinterpreted. Therefore, please allow me to clarify before anyone has time to get confused.

ERM has sampled the private irrigation water supply well at Russell's Garden Center and detected NO contamination in this well. Furthermore, this well is not connected to any drinking water taps; Russell's gets their drinking water from the Town of Wayland municipal supply, and this irrigation well is used exclusively for irrigation purposes.

My point was that DEP considers any private supply well as a 'potential drinking water source' even when there is no connection to any drinking

water taps.

The drinking water supply at Russell's Garden Center is as safe to drink as any publicly-supplied water in Wayland. Anyone who works or shops at Russell's should be unconcerned about drinking as much of that water as they would like. The whole issue of cleaning up groundwater at the former Raytheon facility is to protect the Town water supply, which to date shows no contamination directly attributable to the Site (and we aim to keep it that way).

I trust this clarifies my previous email and forestalls any undue drinking water concerns.

Benson R. Gould, LSP, LEP
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