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PHOTO BY JOHN TARANTINO

An eruption of fall foliage reflects into the water at a scenic spot in Wayland on Sunday.

Raytheon moves ahead on cleanup

Engineers work on restoring wetlands and improving the groundwater conditions

By Michael Wyner
STAFF WRITER

An environmental engineer from Raytheon provided an update to residents last week on the cleanup efforts at the former Raytheon facility on Boston Post Road.

Edwin Madera, who specializes in restoration projects, said that Raytheon recently injected 45,600 pounds of sodium permanganate into the ground to clean up the groundwater on the southern portion of the site, located near Russell's Garden Center. The last injections were done in July.

"When the sodium permanganate comes into contact with

contaminants, it breaks them down into harmless byproducts like carbon monoxide, water, some magnesium dioxide, which is why we decided to use that technology," Madera said.

By performing the injections at a high pressure, Raytheon was able to reach a larger portion of the site.

"We wanted to make sure we covered the entire area," Madera said. "Making sure we got all the permanganate into the ground was a very labor-intensive program."

It will probably take two years before Raytheon can determine how effective the program was



COURTESY PHOTO

Workers lay down a coconut mesh in the process of restoring wetlands plants at the former Raytheon site on Route 20.

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Cleanup of former Raytheon site

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for reducing volatile organic compounds in the groundwater, according to Madera. "Mother Nature was always the biggest variable. She threw everything at us from a lot of rain to sub-zero temperatures, but we were able to move forward and complete that project."

"Scaling it up to such a degree, we need to make sure that we drop those concentrations of contamination down," Madera said.

Another massive part of the Raytheon project has been excavating two acres of contaminated soil in the southern portion of the site and restoring the wetlands. This project began one year ago.

"Right before we started doing the excavation we had some stunted growth out there. The plants were not doing very well because of the high levels of metals and contamination, which prompted us to come out here and remediate," said Madera.

Raytheon worked with various agencies to come up with a plan for the wetlands restoration, including the Wayland Conservation Commission, the Environmental Protection agency and the Army Corps of Engineers. The permitting process alone took two years.

The wetlands restoration work was finished in February of this year despite some weather challenges. Workers put down clean soil and planted 71,000 plants of 11 native wetlands species, another "labor-intensive project."

"We wanted to get the project done, and thankfully we did," said Madera. "Mother Nature was always the biggest variable. She threw everything at us from a lot of rain to sub-zero temperatures, but we were able to move forward and complete that project."

Nearly 300 samples of the ground were taken to make sure that Raytheon was meeting its goals of reducing compounds like polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs), and metals such as silver and copper.

"If there was still a high concentration, we continued to excavate until we reached our goals," Madera said.

Raytheon went back to two areas with elevated detections of PAHs, and excavated up to six inches of soil, eventually bringing the concentrations of the contaminate down.

Finally, Raytheon disposed of the 5,000 cubic yards of contaminated soil in proper facilities, and brought in clean soil to recreate the wetlands.

"In July there were patches of green in the brown, now there are only patches of brown in the green," Madera said. "In August we really started to see it filling in, and it continued throughout September."

Residents at last week's pre-

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COURTESY PHOTOS

The progress of the wetlands restoration on the former Raytheon facility on Route 20 can be seen when comparing a view of the site in June 2004, top, with a view two months later, bottom.



Raytheon cleanup

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sentation asked about the possibility of non-native species invading the new wetlands areas, particularly purple loosestrife.

Raytheon will continue to monitor the site and eliminate purple loosestrife for the next five years it is responsible for the cleanup in agreement with environmental agencies.

Northern area investigation

Next, Raytheon is turning its attention to the northern area of the property for possible volatile organic compounds in the groundwater, once feared to be heading toward the town's water supply at the Baldwin Pond well fields.

"The town was concerned it was seeing a contaminated plume heading that way, and rightfully so to be concerned," Madera said. "The DEP (Department of Environmental Protection) came out and started doing assessment work, and found some higher elevated concentrations in the northern area of the

property, so we started working with the DEP and town to address some of their concerns."

After detailed studies, Raytheon and the DEP found that there was not a contaminated plume heading toward the Baldwin Pond well fields.

"Based on the data we collected, the data DEP collected, and evaluating the whole area, we don't feel there's potential to impact the well fields," Madera said. "We felt very comfortable with that, and shared that data with the town, and they felt comfortable with that data."

Now Raytheon will be trying to determine if any contamination may possibly be heading to the Sudbury River.

"We want a better handle on this area. Unfortunately it's in a wetlands resource protection area so it's a little more difficult to install wells," Madera said.

Raytheon planned to come out to start drilling for testing last month but was forced to postpone because of the rainstorms.

"The whole area is flooded, which makes it very difficult to get the mats out there into the wetlands and get the heavy equipment out there," Madera said.

As a result, some of this drilling and testing work may be pushed into next year.

"If there's no severe weather and the water level drops and we have the opportunity to get out there, we will move the project forward this year."

John Drobinski of Sudbury, an environmental consultant to Raytheon who has been working on this project since 1990, said he is not optimistic the work will be performed this year due to the extremely high water levels of the river.

Other sources of contamination have been affecting the Sudbury River, such as the Nyanza Superfund Site in Ashland, with the result that several no fishing signs have been placed along the river due to the high levels of mercury.