BROWARD ENVIRONMENTAL REMEDIATION TIMES

Fall 2021

CONTENT

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PETROLEUM RESTORATION PROGRAM UPDATE

During the last year, the Florida Department of Environmental Protection (FDEP) paused funding for cleanups at contaminated sites. Funding has been gradually increased over that time. Now, the FDEP has announced that all categories of cleanup are open for encumbering new work for sites scored 30 or higher. They are also issuing purchase orders and work orders for the previously paused scopes of work that remain on the Petroleum Restoration Program Weekly Sign Off and for all activities on sites awarded under Advanced Cleanup regardless of score. As of August 26, 2021, the department has approximately $72,000,000 obligated which will continue to be paid out as invoices are received.

For a list of facilities on the Weekly Sign-Off Sheets for Priority 1, 2, and 3 Encumbrances, please visit the following FDEP link: https://floridadep.gov/waste/petroleum-restoration/content/weekly-sign-sheet-priority-1-2-3-fco-encumbrances

For future announcements from the FDEP, please visit the following FDEP link: https://floridadep.gov/waste/petroleum-restoration/content/announcements-upcoming-events

THE SOIL-VAPOR EXTRACTION SURFACE SEAL

Effective site cleanup draws on several features including but not limited to: assessment, pilot testing, and remedial design. While these elements are important in managing the cleanup and ultimate closure of a site, it is also important that the environmental professional watches the devil in the details to ensure the cleanup process is not thwarted by the unanticipated. The Division has found over the years that for sites where Soil Vapor Extraction (SVE) is to be utilized, more analysis and care of the surface seal is warranted.

Numerous instances of short-circuiting have been observed; therefore, the purpose of this article is to highlight some of the most common contributors to this issue.

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THE SOIL-VAPOR EXTRACTION SURFACE SEAL CONT'D.

A common site feature rferenced in the Remedial Action Plans (RAPs) used to establish the surface seal for an SVE system is pavement consisting of asphalt or concrete. While this is the most common solution to prevent short-circuiting, there should not be a blind reliance on the presence of pavement. The condition of the pavement should be examined as part of the remedial design and monitored as part of the remedial system operation and maintenance program. It has been observed during County site inspections when weathered pavement had failed to the point where air could be heard hissing through cracks with a measurable flow. Keep in mind that some pavements may provide an adequate surface seal during the short duration of a pilot test at a single test well, but later fail under the constant load of a full system.

There may be portions of sites identified during the design stage that do not have an established surface seal in a landscaped or otherwise unpaved area. Otherwise, it may be necessary to reestablish a surface seal after construction. In these situations, the installation of a polyethylene liner has been successfully used to establish an effective surface seal.

Another commonly encountered issue is short-circuiting through unsealed well pads or along the joint between dissimilar pavement types. Monitor well pads, especially in high-traffic areas, can degrade and fail over time. It is also important to ensure that treatment wells installed for a new system are properly sealed and airtight. There have been several instances where newly installed well heads were found to contain water and injected air from the air sparging system bubbling energetically through that standing water. The joint between dissimilar pavement types should also be monitored as part of the system operation and maintenance program, as seal failures may occur over the life of the remedial system.

Site use changes and new construction activities can also negatively impact the surface seal of the SVE system. Owing to the length of time that can sometimes take place between RAP approval and actual construction, property owners sometimes perform construction activities that may damage or remove the surface seal. In some cases, a notable impact to system performance was observed during system start-up report reviews. In these situations, it has been found that restoration of the surface seal caused measurable performance improvements (note the report excerpts attached). In one situation, this was accomplished through the addition of a layer of sand covered by polyethylene sheeting, which was in turn covered again by sand and crushed stone to reestablish the surface seal.

If you have questions or need additional information regarding this article please contact John J. Gomolka, P.G., at (954) 519-1279 or jgomolka@broward.org.

TABLES, FIGURES, AND THEIR REVIEW— OH MY!

The site cleanup process is often long and laborious, so it is a relief when, an appropriate set of soil and groundwater analytical data is obtained that would allow unconditional site closure after years of cleanup activities. During the preparation of the Site Rehabilitation Completion Order (SRCO) package, the process is sometimes delayed by unaddressed details which can be very frustrating when the end of the project seems so tantalizingly close. This article will cover some of the issues encountered during review of the Figures and Tables required for the SRCO Package.

All current and historical soil and groundwater sampling points need to be geographically portrayed on Figures, and a complete history of all laboratory analytical data must be included in a cumulative manner in analytical data tables. Note that while soil screening data tables are not always required in the SRCO package. However, there are some situations, such as sites having replacement soil samples— when they can be helpful in the review process. All figures and tables must include the Florida Department of Environmental Protection (FDEP) Facility Identification Number. It is not necessary to include all the sampling points on one figure, but there should be sufficient figures to display every historical sampling point. The tabulated data presentation format should conform to the November 17, 2011 *DWM Rounding Analytical Data for Site Rehabilitation Completion* and the October 12, 2004 *FDEP Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limit Memoranda*.

Soil Data

Every single soil sample that exceeds Soil Cleanup Target Levels (CTLs) will need to be addressed in the soil analytical tables submitted as part of the SRCO package to show how the exceedance was resolved. For example, was there a source removal that removed that section of soil from the site? If so, the source removal area should be depicted on at least one of the Figures supplied in the SRCO package, and the associated analytical data footnoted to show it was removed. If a remediation system was operated at a site containing contaminated vadose-zone soil, post-active remediation soil sample(s) from the same location (s) and depth interval(s) are required and must be clearly identified as addressing that location and depth interval. Note that the SRCO package will also need to include Benzo(a)pyrene (BaP) calculation tables for every soil sample that had BaP detections. Similarly, all Synthetic Precipitation Leaching Procedure (SPLP) and/or Total Recoverable Petroleum Hydrocarbon (TRPH) fractionation data should be included in the appropriate analytical tables portrayed against the appropriate standards, not just referenced. Keep in mind that SPLP data should be portrayed in an appropriate table and compared against the appropriate groundwater standard, not shoe-horned into a soil table with the associated risk of comparing liquid data against direct exposure Soil CTLs.

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TABLES, FIGURES, AND THEIR REVIEW— OH MY! CONT'D.

Groundwater Data

To qualify for site closure, every previously contaminated wellpoint exceeding Groundwater CTLs needs two clean consecutive groundwater sampling events. Note that with respect to funded sites, the FDEP stipulates in the Amended and Restated Agency Term Contract that the analytical data tables are to be kept up in a cumulative manner and inclusive of all data so that it is possible to easily verify that there are two consecutive clean sampling events of laboratory data following contaminant exceedances to ensure the site is clean and ready to close. Regarding analytical data history follow-up, analytical data exceedances in temporary wells need to have the same analytical follow-up as a permanent monitoring well. Table notes should include information on well replacement due to lost or destroyed wells and how all exceedances were addressed. If the wellpoint no longer exists, a replacement monitoring well located within 10 feet of the original well point and screened over the same depth in the water column can be considered to evaluate whether an area meets closure requirements. If such a monitoring well is not available, it would be appropriate to install a replacement monitoring well within a 10-foot radius of the original wellpoint. In situations where new infrastructure precludes replacement within 10 feet, the contractor should reinstall as close as is feasible and include a statement to that effect in a table footnote to indicate that the location was chosen to best approximate the original sampling point.

Several times in the soil and groundwater data sections, suggestions are made to footnote points of information. The judicious use of footnotes to clearly demonstrate to the reader how all historical data has been addressed is strongly encouraged. The reader should be able to look at the figures and tables and clearly discern how all previous points of contamination were addressed.

This is the final article in a series devoted to the preparation and issuance of SRCOs. The previous articles have been featured in the Spring and Summer 2021 editions of the Times. If you have questions or need additional information regarding this article, please contact John J. Gomolka, P.G., at (954) 519-1279 or jgomolka@broward.org.

Any ideas for future articles or topics you'd like to see covered here? Please email David Vanlandingham, Director of the Environmental Permitting Division at Broward County, at dvanlandingham@broward.org.

ANNOUNCEMENTS

News

- EPA Superfund solar project built on the site of a former paper mill
- 'Forever chemicals' detected in groundwater from 13 DoD sites in Gulf of Mexico

Training and Events

The Contaminated Site Clean-Up Information (CLU-IN) Web Site provides information about innovative treatment and site characterization technologies to the hazardous waste remediation community. It describes programs, organizations, publications, and other tools for federal and state personnel, consulting engineers, technology developers and vendors, remediation contractors, researchers, community groups, and individual citizens. The site was developed by the U.S. Environmental Protection Agency (EPA) but is intended as a forum for all waste remediation stakeholders. View upcoming online trainings and webinars.