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Over-excavations, Oxygen Releasing Compound and SMR Submittals

The following was prepared in response to questions from groundwater professionals concerning over-excavations (OE) conducted to address groundwater pathways and subsequent report submittal requirements.

High risk interim monitoring occurs before operation of a remediation system. During system operation High Risk Remediation Monitoring is conducted following the monitoring plan provided in the CADR (which may entail sampling the same MWs as in the Tier 2 plan, in addition to measuring other parameters, and more frequent sampling). Once OE is conducted, remediation monitoring and reporting follows (minimum quarterly sampling and semi-annual reporting) and groundwater sampling events are timed based on when corrective action is implemented (i.e., third quarter high risk interim monitoring is no longer applicable). For example, if OE is completed in June, sample groundwater in December.

OE is not an 'active system'. It can be done as expedited corrective action (particularly if soil contamination is the only issue) or 'regular' corrective action. When OE is used to address a groundwater pathway (or both soil and groundwater pathways), we would consider follow-up monitoring to be remediation monitoring. Groundwater may be sampled as often as you like (monthly/quarterly), but a six-month stabilization period is typically required before data could be used in re-evaluating risk (i.e., ignore data collected within six months post-OE). The recommended six-month stabilization period was established with the idea of capturing seasonal variations. Groundwater data collected sooner than six months may be used if stabilized conditions can be documented (i.e., more frequent data collection / sample a variety of parameters to show conditions have equilibrated). At least two groundwater monitoring events (post-OE / 6 months apart) are needed before site reclassification can be requested. One exception may be for the Groundwater Vapor to Enclosed Space pathway – after a six-month stabilization period and the first groundwater sampling event, vapor sampling may be conducted.

An OE report *with an attached revised Tier 2 which incorporates the soil data* is to be submitted within 45 days of completion of the excavation activities under the following conditions:

- For sites where only high risk soil pathways existed and OE successfully removed soil contamination such that the site may be reclassified.
- For sites where OE is conducted to address high risk soil pathways, but it is not successful (i.e., soil contamination > target levels remain). The certified groundwater professional should also attach a cover letter indicating what future corrective actions are planned. We will then establish a CADR due date.

For cases where OE is conducted to address groundwater pathways *and* is also successful in removing contaminated soil (< T.L.s), submittal of the OE report with attached revised Tier 2 may be delayed until after the first post-OE groundwater sampling event. The intent of waiting is to incorporate groundwater data and to avoid multiple and unnecessary re-runs of the Tier 2 model/ report submittals/ reviews. Note, a second post-OE groundwater sampling event is required before the department would consider a request for site reclassification to NAR. Generally, the earliest a reclassification request can be made, where groundwater pathways are involved, is one year post-OE. The request should be made through submittal of an SMR. Generally, post-excavation groundwater data should be entered into the SMR module of the Tier 2 software, unless groundwater concentrations increase. See 1/30/02 posting for guidance on when to enter SMR groundwater data in the Tier 2 module of the software.

Oxygen Releasing Compounds in combination with OE

Generally, use of oxygen releasing compound is not an expedited corrective action. However, we recognize it may be an opportunistic time to apply at OE, particularly if it's being used as a 'polishing off' method or a boost to soil remediation. In these cases you may proceed with application of oxygen releasing compound, without the usual pre - / post - oxygen releasing compound monitoring requirements (see below).

If oxygen releasing compound application is being considered the primary corrective action for groundwater, and particularly when sensitive receptors are at risk (e.g., PWLs, DWWs), a CADR would have to be submitted before the compound is applied. A report to the department should indicate: how the compound will be applied (slurry, injection, grid layout, etc.), at what rates, how rates were determined, a monitoring plan (pre and post-application) which identifies parameters to be measured - at minimum, baseline DO, CO₂ (outside contaminated area), BTEX levels, etc. This is not meant to be an all-inclusive list (see CADR guidance). Remediation monitoring of the oxygen releasing compound treatment is to be done quarterly with semi-annual report submittal. Additionally, if sensitive receptors are at risk, they need to be sampled and evaluated in the semi-annual reports. As with post-OE monitoring, at least two sample events separated by six months (post-oxygen releasing compound application) are needed before reclassification would be considered.

The preceding discussion is general guidance - there may be site-specific differences. Please discuss site-specific variances with the IDNR LUST site project manager.

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