04015.12

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MEMORANDUM

EPA Region 5 Records Ctr.
356931

Date: December 22, 1993

To: Laura Ripley, U.S. EPA, RPM TAL

From: Theodore Lietzke, WWES Grand Rapids

Re: SCOTT AIR FORCE BASE, PROJECT #04015.12
Notes on 9/30/93 Comment Responses from Law Environmental, Inc.

On May 3, 1993, we completed a technical review of the "Second Draft Work Plan Stage II (WP), Remedial Investigation, Feasibility Study, Treatability Study" as well as the "Second Draft Sampling and Analysis Plan (SAP), Remedial Investigation, Feasibility Study, Treatability Study," prepared by Law Environmental, Inc. (Law), for the U.S. Army Corps of Engineers during March, 1993. Our technical comments were received by Law, and they completed response comments on September 30, 1993. Law has requested that we discuss the comments during an informal meeting, tentatively scheduled for January 11-12, 1994. In addition to the proposed meeting, Law has requested a copy of the "Region V Scope of Work for Ecological Assessments," issued on April 30, 1991.

In general, Law intends to revise the draft WP and SAP according to the majority of our technical comments. The following Law comment responses have been highlighted in this memorandum, because:

- the responses provide insight into/or defend Law's investigative rationale, and/or
- the responses represent questionable approaches or assumptions.

1. LAW COMMENTS PROVIDING INSIGHT

Comment Responses #4 and #14 (specific sections of WP)

- "Previous field investigations (by Environmental Resources Management, Inc., or ERM) at Scott AFB produced insufficient data to provide for characterization and zonation of water bearing units in and around the base. Therefore, although well designations such as shallow, intermediate, and deep are used to describe the completed depths of monitoring wells on base, Law anticipates that the ground water system at Scott AFB consists of a unconfined aquifer in the upper overburden units, perhaps becoming semi-confined in the underlying discontinuous glacial lenses and becoming a confined aquifer at some point within the bedrock. The saturated interval above bedrock is, at this time, classified as a single interconnected unconfined to semi-confined aquifer." In general, we agree with this designation of the

unconsolidated glacial material as a single aquifer system; however, few borings have been advanced to bedrock, and the vertical gradient between upper and lower portions of the system has not been determined.

Comment Response #36

- Sampling of the monitoring wells at Site 1 has been proposed only from March to May because this "is the period of heaviest rainfall," and "this will allow Law to observe the potentisometric response during periods of infiltration." At this time, Law will also estimate "the potential for discharge of ground water to the Mosquito Creek in the vicinity of the landfill."

Comment Responses #37 and #76

- Due to the possibility of ordnance and acutely hazardous substances, Law believes that "all intrusive activities at landfill sites are potentially dangerous. Therefore, attempts will be made to identify the type of waste disposed in the landfill through research of historical data and interview with base personnel."

Comment Response #38

- ERM "data obtained do not meet QA/QC requirements. Site data acquired by ERM is inadequate to evaluate contaminant release from (Site 1, the landfill area)." Hence, some of the questionable data results determined by ERM must be confirmed by Law.

2. QUESTIONABLE APPROACHES OR ASSUMPTIONS

Comment Response #1 (specific sections of WP)

- The surface water has apparently been classified as "General Use" water, but "minor variances from the permitted concentration were noted at several locations." WWES' previous technical comment requested that these variances be listed and, possibly, further investigated. Law indicated that further investigations of the surface water are not included within their Scope of Work; nevertheless, the variances should be listed for our review.

- Additionally, the issue of the surficial aquifer's resource classification has not been raised by Law. In general, we consider the aquifer a Illinois Class I Potable Ground water Resource, unless proven otherwise; the burden-of-proof rests with Law.

Comment Responses #4 and #72

- Law indicates that confining aquifer conditions occur "at some point within the Pennsylvanian bedrock." The Modesto Formation (a gray shale with some limestone and coal) appears to be

the uppermost bedrock unit. Until the surface of this bedrock can be characterized as, for example, fractured or impermeable, defining confining zones, evaluating DNAPLs, and determining the screened depth of "deep" monitoring wells cannot be done.

Comment Response #12

- Although we agree that DNAPLs should be considered in the revised CSM, our initial technical comment recommended that LNAPLs, such as floating free-phase petroleum product, not be omitted from the CSM development.

Comment Response #33, #37 and #76

- Law's presumed landfill thickness of 30 to 40 feet may be an overestimate, based on the 10-foot fill thickness discovered by ERM during their field investigation (see page 4-14 of 1992 report). We realize that ERM's borings were advanced near the edge of the landfill, but Law's estimate of a 30- to 40-foot landfill thickness must be confirmed with field investigations (such as drilling activities), in our opinion. This issue must be further investigated.

- Law also suggested that "all intrusive activities at landfill sites are potentially dangerous," but we contend that a soil-gas survey and/or drilling can be completed if proceeded with caution. The results of such a survey may be very helpful for the development of a closure plan for the landfill.

Comment Response #40

- Regardless of ERM's existing request to the IEPA for no further action (NFA) at Sites 2 and 7, we feel that such a decision is inappropriate. We concur with Law's statement on page 2-185 of the WP report that "further evaluation of the nature and extent of surface soil contamination is necessary." Additionally, adequate characterization of LNAPLs has not been completed, because no water table wells appear to exist on the base.

Comment Response #43

- Metals contamination has been detected at Site 3, and waste water treatment sludges have been suggested by Law as the contaminant source. The issue of past and current sludge disposal practices must be documented, and old sludges should be sampled and analyzed for metals concentrations when located. Locating the old sludge disposal area(s) should be added to the investigation.

Comment Response #44

- Similar to Comment Response #12, this response indicated that DNAPL characterization has been inadequately determined, but the text of their report indicates that LNAPLs were not

characterized. Regardless of the acronym, we understand that the monitoring well screens were set below the static water level, and, hence, additional monitoring wells should be installed to straddle the water table.

Comment Response #45

- What is chat? (The context suggests that chat is ash or other emitted burn products.)

Comment Response #54 and #60

- Law has explained that 20 to 30 foot screens should be used for the recovery wells "to minimize the vertical component of ground water flow." Subsequently, response comment #60 indicates that the 30-foot wells were originally proposed to "maintain horizontal flow toward well and minimize turbulence." Nonetheless, Law finally indicates "that a screen of up to 20-feet be called for in the work plans." What is the desired pump rate? How was this rate determined, and what data support the desired screen? Depending on the desired pump/recovery rate, we agree with Law's 20-foot screen recommendation for the recovery well.

- Our original technical comment recommended 5-foot screens above bedrock instead of the proposed 20-foot screens for investigative wells. We also recommended 10-foot screens for the water table wells instead of the proposed 20-foot screens. These recommendations have been either misunderstood or ignored.

Comment Response #58, #59, #83 and #85

- Are the utility lines really so extensive that no Hydropunch sampling is possible within the source area of Site 5?

- Law's comment response does not explain the reasoning for not sampling the source area of Site 5. What is Law's rationale? We recommend that subsurface soil and ground water sampling be completed within the source area. If an adequate investigation of the source area is not completed, subsequent remediation plans will be difficult to prepare.

Comment Response #62 (WP) and Comment Response #24 (SAP)

- What is the thickness of the geosynthetic membrane, and what is the membrane made of?

Comment Response #66

- Although SVOCs were previously detected by ERM only at low concentrations, such ERM data should not be relied upon due to their suspect analytical results (see comment response #38). Therefore, resampling for SVOCs may be necessary.

- This particular comment response raises an issue of concern. We understand that ERMs analytical results are suspect due to QA/QC disqualifications, especially with respect to Site 1 results. How will Law discern which analytical data may be relied upon or is useful and which data is not?

- Additionally, background metals (e.g. Pb) levels have not yet been established for the base.

Comment Response #67

- Is "Target" the subcontracted laboratory for Law? Please include in the SAP all subcontractor information related to their field protocol (sample collection, etc.), their chain-of-custody procedure, and any possible deviations from the reviewed SAP.

Comment Response #75

- This comment response indicates that soil samples will be "collected from the zone exhibiting the highest PID reading," suggesting that chemical concentrations will be measured to quantify the contamination. We do not recommend that soil samples from the saturated zone be collected for chemical analysis. Instead, ground water should be sampled for analysis. If, however, Law is collecting the soil samples to determine the lithology, then soil sample collection in the saturated zone is valid.

Comment Response #88

- Comparing the field data with the Thies (confined aquifer) test and the Neuman (unconfined aquifer) solution may help determine the aquifer's confined/unconfined condition. Is this the purpose for the application of the two aquifer tests? (Recall, for example, that MW1-1S demonstrated a water table elevation of 416.94 feet above msl, while the surface elevation was 416.81 feet above msl on Figure 4-1 of the ERM report.)

Comment Response #95

- Apparently, Law anticipates applying a criteria of $1x10^{-7}$ for cancer risk. We understand that a $1x10^{-4}$ risk triggers a remedial/clean-up action to $1x10^{-6}$ risk levels. Why does Law anticipate using such a conservative $1x10^{-7}$ risk criteria?

- Additionally, Law has indicated that risk criteria will be developed for the chemicals of concern. Such determinations are valuable; however, we recommend that complete site-by-site risk assessments be developed as well.

Comment Response #12 (specific sections of SAP)

- Infrequent references are made by Law to the "Handbook to Support the Installation Restoration Program (IRP) Statements of Work" as a standard for AFCEE protocol. We recommend that all such referenced protocols be included in the SAP for review. Please note, however, that if differences exist between the U.S. EPA protocol and the AFCEE protocol, then the U.S. EPA protocol must be adhered to.

cc: Liz Bartz, WWES, MI
Jerry Canfield, WWES, MN
Jeff Groen, WWES MN
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