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September 2, 1994

David Clowes
Florida Department of Environmental Protection
Federal Facilities Coordinator
Twin Towers Office Building
2600 Stone Road
Tallahassee, FL 32399-2400

RE: Responses to **United States Environmental Protection Agency (USEPA)** and Florida Department of Environmental Protection (FDEP) **Technical Review and Comments, Technical Memorandum for Category V Sites 9, 29 and 34; Pensacola Naval Air Station, Pensacola, FL; Contract #N62467-89-D-0318, CTO-0070.**

Dear **Mr.** Clowes:

On behalf of the Navy, EnSafe/Allen & Hoshall is pleased to **submit responses** to USEPA's and FDEP's technical review comments for the **Technical** Memorandum for Category V sites (**Sites 9, 29 and 34**).

Should you have any questions or comments regarding **these comment responses**, please feel free to call me.

Sincerely,

EnSafe/Allen & Hoshall

Brian E. Caldwell
Task Order Manager

Enclosure

cc: **Bill Hill**
Bill Gates
Allison Humphris
EnSafe/Allen & Hoshall file
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**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
TECHNICAL REVIEW COMMENT RESPONSES
TECHNICAL MEMORANDUM
CATEGORY V SITES 9, 29, 34
NAS PENSACOLA**

GENERAL COMMENTS:

Comment:

1. The quantitation limits **used** for groundwater sample analysis **are** many times above **Florida** Primary, Secondary and "**free from**" Water Quality Standards (Chapters 17-520 and 17-550, F.A.C.). Contract **Lab** Protocol (**CLP**) should **be** adjusted **so** the quantitation limits **are** at or below State standards. It is not acceptable due to the presence of a high **GC** volatile **peak from** one sample to automatically dilute subsequent samples (such as 34GGM53), and thus, **raise** the quantitation **limits** unnecessarily. If a sample was diluted, then it is considered heavily contaminated (such as 34GR01 and 34GR02), and the results from the **areas** not masked by the high **peak** should be provided, if possible. Note, it is especially important **to** conform to these standards because these sites may only be sampled once **in** order to "close them out" before BRAC construction. Therefore, all groundwater samples analyzed using quantitation limits above State standards should be resampled unless they showed significant contamination. However, to avoid reanalyzing every sample, samples do not **need** to be reanalyzed if the samples were not diluted before analysis, estimated **values can** be provided, and if significant soil contamination is not present. In the **future**, the reasoning behind sample dilution should be explained to avoid confusion and facilitate document review. **As** agreed in the meeting (6/27-6/29), screening data (predilution) **will** be provided. Also, assessments phases beyond screening will **use** quantitation limit analyses at or below State Water Quality standards.

RESPONSE

Quantitation **limits are** elevated (as allowed by **CLP** protocol) **only** in samples that contain significant organic compound concentration(s) . However, **this** does not indicate that a target compound contaminant is present. In some **instances**, the elevated compound concentration is a target compound. In these instances, the target compound is identified and quantified. In other instances, the elevated compound is not on the target list (i.e., a **TIC**) and is not identified, giving the impression that sample detection limits **are** unnecessarily elevated. However, **this** is not **the case**.

When a significant organic compound concentration is present in a given sample, holding time and commercial laboratory scheduling considerations makes it impractical and economically infeasible under CLP protocol to identify every compound potentially present below the highest detected organic concentration. The reason for this infeasibility is that there are potentially numerous compounds present in the sample, and the sample would have to be re-run numerous times to attempt to identify each and every target compound potentially present at lower concentrations while disregarding the original elevated organic concentration. Furthermore, due to coelution of compounds with similar chemical structure, quantitation of each and every organic compound potentially present would be either extremely difficult for the same reasons, or impossible due to analytical limitations. Regardless, the presence of a significant organic compound concentration in a given sample requires dilution (thus elevating detection limits) to: 1) determine the detected compound's actual concentration within an appropriate calibration range, or 2) dilute out an unknown compound's (TIC) "masking" or "interference" effect in an attempt to detect other target compounds that may be present at lower concentrations. A further complication is that organic compound interference often carries over from one analyte group to another (e.g., semivolatiles to volatiles to pesticides) resulting in elevated detection levels for more than one analyte group in a single sample.

CLP laboratory protocol does not attempt to "mask" the presence of compounds at concentrations lower than method detection levels (MDLs). Because analytical instrument detection levels (IDLs) are generally lower than (elevated or unelevated) MDLs, compounds are often positively detected below MDLs. When detected, these concentrations are reported as (estimated) "J" flagged values. Consequently, when a compound is detected below the MDL (which is calibrated to either the CLP MDL or, in the case of dilution, the highest organic peak on the analysis spectrum) its concentration is estimated and shown on lab reports. This methodology is used by USEPA for all Superfund work, and possesses a level of analytical certainty greater than SW 846 methods.

This information is offered not to dwell on analytical shortcomings, but to briefly explain that limitations to CLP protocol exist. CLP laboratories certified by the USEPA to perform CLP protocol analysis are required to operate within the guidelines of this program, therefore samples can only be diluted when necessary or appropriate. Due to analytical shortcomings, the re-collection and re-analyzing of elevated detection limit samples will at best be costly and time consuming, potentially generating information of no significant value. Screening data for samples with elevated detection limits is available to document the reason for the dilution of any given sample. However, screening data only illustrates the presence of an elevated organic compound concentration, and does not identify or quantify the elevated (or any other) compound. Therefore, it is recommended that elevated quantitation limit samples be re-analyzed only when sufficient site specific evidence suggests undetected contamination is present. For example, VOC quantitation limits are elevated for samples 34GGM53, 34GR01, and 34GR02, giving concern that relatively lower level VOC contamination may have gone undetected. However, VOCs were not detected in any soil or groundwater sample at the site and no firm evidence indicates VOC contamination exists at the site or, if it does, it is at relatively low levels. Therefore, sample re-analysis would be an inefficient use of time and financial resources

that would likely reproduce similar results. The need for sample re-analysis should be evaluated on a case-by case basis and only performed when warranted. However, in the future, the Data Validation section of the RI report will be particularly sensitive to dilutions, and will provide the reasons for, and consequences of, the dilution.

Comment:

2. As discussed in the meeting, to expedite document review, I recommended that soil and groundwater contamination above Federal and State standards/guidelines be graphically represented as well as documented in the text. Separate figures for soil and groundwater are preferable to composite figures. If a certain contaminant is widespread, then an additional figure, with contours illustrating concentrations levels, would be useful. Proposed soil and groundwater sample locations should be plotted together on another figure.

RESPONSE

FDEP's comment is acknowledged. Notable soil and groundwater analytical results will be documented in the remedial investigation (RI) report text and graphically displayed as appropriate. Because the Technical Memorandum was a secondary document intended only to summarize the Phase I results, its format was intentionally abbreviated and general.

Comment:

3. The term "background standard" is inappropriate. Standards are promulgated Federal or State contaminant levels. Thus, background level should replace all references to "background standard".

RESPONSE

FDEP's comment is acknowledged and will be addressed in the RI report.

Comment:

4. Site locations should be plotted on figures.

RESPONSE

FDEP's comment is acknowledged and will be addressed in the RI report.

Comment:

5. The non detection of a chemical should be denoted as "ND" and not solely as a dash.

RESPONSE

FDEP's comment is acknowledged and will be considered in the development of future analytical summary tables. All symbology used in tables will be adequately defined with footnotes or a key as appropriate.

Comment:

6. Note, FDEP's Memorandum dated February 14, 1994, concerning Florida's Soil Cleanup Goals (CG) does not include all chemicals. Subsequent versions will be more comprehensive.

RESPONSE

FDEP's comment is acknowledged. The most updated FDEP Soil Cleanup Goal (CG) information available will be utilized during the development of the RI.

SITE SPECIFIC COMMENTS :

SITE 9

Comment:

1. Additional soil samples at 09GR02 are needed to delineate PAH and lead contamination.

RESPONSE

Additional **soil** sampling was **performed** in the vicinity of boring 09S02 during Phase 11 fieldwork to delineate the extent of detected **PAHs** exceeding **EPA** risk-based concentrations (RBCs) or CGs (results **to be** presented in the RI report). The extent of detected lead in **soil** exceeding **400 parts per million (ppm)** **will be** delineated at Category V Sites (in accordance with EPA OSWER Interim Soil Lead Guidance (**Draft 5-27-94**)) **as agreed** to by Navy, USEPA and **FDEP** representatives during recent (August 12, 1994) partnering meetings.

Comment:

2. With low PAH levels around **09GR06** it is unnecessary for additional sampling around **this** site.

RESPONSE:

Additional soil sampling was performed in the vicinity of boring 09S06 during **Phase** 11 fieldwork to delineate the extent of detected **PAHs** exceeding RBCs or CGs (results to be presented in the RI report). Benzo(a)pyrene (**120 ppb**) **was** detected in sample 09S0601 at a concentration which exceeded the 88 ppb RBC; therefore, the Navy felt the additional sampling was warranted.

Comment:

3. Monitoring well **09GR02** should be **resampled** due to the presence of lead above the State Standard. Soil is contaminated with carcinogenic PAHs at **09GR02**, and other surrounding wells do not have PAH **soil** contamination or have **as** high levels of groundwater lead contamination. Thus, the justification of considering the levels **as** similar **to** background is not reasonable.

RESPONSE

The lead concentration detected in sample **09GR02** (**27 ppb**) only slightly exceeded the **15 ppb** State Standard. Furthermore, **this was** an isolated exceedence for **this** parameter indicating elevated lead is not present across the site. While the presence of **PAHs** in **soil** at **this** location is not consistent **with** background conditions, **this** groundwater lead concentration is within the range of concentrations detected at background locations. There is no justification for

establishing a relationship **between** the presence of lead **in** groundwater and PAHs **in** soil at this location. **Resampling this** temporary well does not appear warranted based solely on this information. However, **as** additional background groundwater quality information becomes available, site groundwater quality will **be** further evaluated and addressed in the forthcoming RI report(s). Ultimately, the Baseline **Risk** Assessment will determine whether **this** level of lead is a significant risk at the site. If **this** level of lead is shown **to be** out of the range of expected background concentrations, and the BRA also shows that **this** level of lead is a health **risk**, then it will **be** addressed in the feasibility study.

Comment :

4. It is recommended that a permanent well at 09GR02 **be** installed for subsequent sampling; however, if BRAC construction inhibits **this** then a temporary well **needs** to be installed and abandoned after each sampling event.

RESPONSE

Temporary wells will **be** appropriately abandoned prior to BRAC construction activities. However, additional groundwater sampling at this location does not appear **warranted** (*see response to site-specific comment 3*).

Comment:

5. Why is the quantitation limit elevated (**1200 ug/kg**) for volatiles in soil sample 09S0101? There is not a documented **reason** for dilution of **this** sample, such **as** the high concentration of volatiles, to explain the **increased** quantitation level. If these undocumented volatiles **are** tentatively identified compounds (TIC), these compounds should be identified (if possible) and concentration explained. Additionally, if there are not **any** TICs in this sample, then **the** sample should **be** recollected and reanalyzed using lower quantitation **limits to confirm** that volatile **contaminants** are not present.

RESPONSE:

See the response to general comment 1.

Comment:

6. The **Florida Secondary Drinking Water Standard** (Chapter **17-550**, F.A.C.) for manganese is **50** ppb, not **500** ppb as stated on page **16** and **28**. Thus, the amount detected (up to **693** ppb) is above the State **standard**.

RESPONSE

FDEP's comment is acknowledged and the error will be corrected in the RI report(s).

Comment:

7. The CG for manganese, using a Hazard Index of 1 should be based on a child not an aggregate resident. Thus, the CG should be **368** mg/kg, not **2,150** mg/kg as stated on page **15**.

RESPONSE:

The **updated** CG (7-5-94) for manganese, **5710** ppm (based on a hazard index of 1 for a child resident), is well above the levels detected in **Site 9 soil**.

SITE 29

Comment:

1. Due to the presence of **soil** contamination at **29GR05**, four additional **soil** borings should be collected around **this** well, in **similar** fashion as proposed for **29GR01**.

RESPONSE:

No analyzed parameters above **RBCs** or **CGs** were detected in **soil** samples collected from **boring 29S05**; therefore additional sampling in **this area** does not appear warranted.

Comment:

2. Monitoring wells 29GR01 and 29GR05 need to be resampled to confirm Dieldrin contamination.

RESPONSE

Dieldrin was detected in the sample collected from well 29GR01, but not 29GR05. Dieldrin contaminated soil within the Vicinity of boring 29S01, the apparent source of the contamination, will be removed during BRAC construction activities. The BRA will ultimately determine the risk associated with the groundwater contamination. If the BRA indicates a health risk exists, then groundwater contamination warranting further study will be investigated with temporary and/or permanent monitoring wells after Chevalier Field construction has been completed.

Comment:

3. The location of known and suspect leaks should be labeled on all figures.

RESPONSE

FDEP's comment is acknowledged and will be considered during the development of the RI report.

SITE 34

Comment:

1. If the effect of pumping from the pits lowers groundwater, then the pits must be permeable. Thus, there is a good probability that the pits leak solvents into the groundwater when the pumps are not in use. Therefore, it is crucial that the assessment of this possible source, and abatement if leaking, commence before further assessment.

RESPONSE

The sump/drainage pit system in Building 3557 is designed to continuously maintain a lower hydraulic pressure in the sump than the surrounding water table. The system operates

continuously maintaining lower fluid levels in the sump than the surrounding water table, creating a lower pressure (i.e., difference in hydraulic head). A high fluid level alarm, designed to sound if sump fluid level exceeds 10 feet below floor level, is shown on construction drawings as part of the system. Building 3557's floor elevation is approximately 8 feet above mean sea level (based on site well top of casing elevations) indicating the alarm level is approximately -2 feet msl. Based on water levels measured across Chevalier Field, the surrounding groundwater level is approximately 2 feet msl resulting in an approximate four feet (or greater when sump fluid levels are lower) difference in hydraulic head between the static water table and the high fluid level. The lower pressure between the sump fluid level and the static water table prevents leakage into the surrounding water table. Sump use will cease at the termination of NADEP operations in Building 3557, and based on Rust, Inc. and Ecology and Environment, Inc. analytical results, the sump structure will be decommissioned via RCRA clean closure. Therefore, concerns regarding active sump fluid releases and the sump continuing to act as a potential contamination source after closure should be neutralized.

Comment:

2. The amounts of naphthalene (170 ug/kg) and 2-methylnaphthalene (460 ug/kg) in soil sample 3430109 are substantially above the Florida CGs (based on leachability) of 13.3 ug/kg for total naphthalene. Thus, proposed soil samples should be analyzed for PAHs as well as lead.

RESPONSE:

The area of naphthalene soil contamination has been delineated using secondary phase borings. This area will be removed prior to/during Chevalier Field construction activities with confirmatory sampling performed for verification.

Comment:

3. Two additional soil borings should be collected. One collected from the west side of the concrete lined trench, midway between Building 3557 and well 34GR02, and another adjacent to the tank that is next to Building 3557.

RESPONSE

FDEP's rationale for this comment is not understood. See reply to comment 2.

Comment:

4. The proposed monitoring well should **be** moved from 150 west of 34GR02 to the north side of the concrete lined trench, directly adjacent to the trench.

RESPONSE

Again the rationale **for this** comment is not understood. However, **water** level information indicates shallow groundwater flows from the center of Site 34 (location **of** 34GR02) southward toward Building 3557, and west-northwestward, toward the **drainage** ditch. Previously installed shallow well GM-53 is located within the vicinity of the **suggested** well location and is capable of intercepting northwestward groundwater flow from the center of the site. The proposed well 150 feet west of 34GR02 is recommended to **intercept** the westward component of groundwater flow from the center of the site. An additional well located adjacent **to** the north side of the trench is therefore not necessary.

Comment:

5. The analytical quantitation levels **used** for groundwater sample 34GM53 are unacceptable. **These** levels **are** substantially elevated above State Standards without justification (**see** General Comment **No.** 1). Since **this** well is downgradient **from** monitoring wells 34GR01 and 34GR02 containing elevated levels of naphthalene and 2-methylnaphthalene, and 45,000 gallons of solvents and detergents were **released** from the area of these two wells, well 34GM53 needs to **be resampled** with lower quantitation levels especially for volatiles. Depending on the levels from the **resampling**, additional downgradient monitoring wells may be necessary to delineate the horizontal and vertical extent of solvent and petroleum contamination in groundwater.

RESPONSE

See the response to general comment 1. **Also** note that the total naphthalenes detected in groundwater were not components of the solvent/detergent, and **are** potentially related to an undocumented fuel release.

Comment:

6. Concurrent with the sampling **event**, a complete set of water level measurements should **be** obtained in order **to verify** the direction of groundwater flow in **the** surficial stratum. **These** data should **be** provided in **tabular** form (including **top-of-casing** elevations, depths to water, and **corresponding** water level elevations) and in graphic form showing the consultant's interpretation of the groundwater flow direction.

RESPONSE

Water level information obtained shortly **after** (within approximately 10 days **of**) groundwater sampling was presented in the **Technical** Memorandum in **tabular** form for each **site**, and graphically for the western Chevalier Field **area** as a whole. Additional water level information **collected since** the February 1994 investigation will **also be** included in the RI **report**.

Comment:

7. The levels in groundwater of naphthalene (320 ug/l) and 2-methylnaphthalene (**270** ug/l) are substantially above the State Organoleptic criteria (Chapter 17-520.400) of 6.8 ug/l for **total** naphthalene.

RESPONSE

FDEP's comment is acknowledged. However, during **initial partnering** meetings attended by all involved parties (the Navy, FDEP, and USEPA) it was agreed that phased investigations for Category **V** Sites would be directed by conservative health-based risk standards (RBCs and CGs) **used as** preliminary remediation goals (PRGs). The **State** Organoleptic criteria for naphthalene is not a health based guidance concentrations; therefore, its application **to** Site **34** groundwater is questioned. However, adequate information for the BRA is available, during which site-specific clean up **goals** will **be** developed. If warranted, **further** delineation of naphthalenes in groundwater exceeding appropriate (**risk-based**) remediation **goals** **can** be performed during a subsequent phase of the project (concurrent with the RI or in a predesign phase of RD/RA).

Comment:

8. The **soil** lead concentration of 689 mg/kg from sample 3430103 exceeds the **standard** for clean **soil** (Chapter 17-775, **F.A.C.**) of **108** mg/kg.

RESPONSE

The extent of detected lead in soil exceeding 400 parts per million (ppm) at this location will be removed during BRAC construction activities along with confirmation sampling. As agreed to by Navy, USEPA and FDEP representatives during recent (August 12, 1994) partnering meetings, Category V Sites investigations will utilize the EPA OSWER Interim Soil Lead Guidance concentration of 400 ppm.

Comment:

9. On Figure 5 there are eight symbols that appear to be tanks; however, the text only mentions seven. All objects on all figures should be labeled.

RESPONSE:

FDEP's comment is acknowledged and will be addressed in the RI report.