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April 22, 2014

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Subject: **State of New Jersey Department of Environmental Protection Comments on the Final Remedial Investigation/Feasibility Study Work Plan for Sites FTMM-22, FTMM-53, FTMM-59 and FTMM-68 Main Post & Charles Wood Area Fort Monmouth, New Jersey. PI G000000032**

Enclosure: **Letter from NJDEP date January 8, 2014, regarding response to comments for the RI/FS Work Plan for Sites FTMM-22, FTMM-53, FTMM-59 and FTMM-68**

Dear Ms. Range,

Fort Monmouth and Parsons have reviewed the New Jersey Department of Environmental Protection (NJDEP) comments on the Remedial Investigation / Feasibility Study Work Plan for Site FTMM-22, FTMM-53, FTMM-59, and FTMM-68 as documented in your letter dated January 8, 2014. Responses to your comments are provided below in the order in which they were presented in the comment letter. We trust these responses are sufficient to allow field work to be conducted on these Sites.

A. GENERAL COMMENT/STATEMENT:
The New Jersey Department of Environmental Protection (Department) has completed review of the referenced report, dated September 2013, received on October 22, 2013. The report was prepared by Parsons Government Services Inc. (Parsons), on behalf of the U.S. Anny Engineering and Support Center, Huntsville (USAESCH). As indicated in the report, activities are to be performed with the goal of Decision Document acceptance in compliance with the Comprehensive Environmental Response, Compensation, and Liability act (CERCLA), the National Contingency Plan (NCP), 40 CRF part 300 and "to the extent possible to meet the requirements of New Jersey Administrative Code (NJAC) 7:26E Technical Requirement for Site Remediation".
The work plan describes RI/FS activities to be performed at FTMM-22 (former CW-l Wastewater Treatment Lime Pit at Building 2700), FTMM-53 (Building 699/former gas station), FTMM-59 (Building 1122/former auto repair shop), and FTMM-68 (Building 700/former dry cleaners). The following comments and questions are offered:
A. RESPONSE: Acknowledged.

B. FTMM-22/CW-1 -Former Lime Pit at Building 2700

B1. COMMENT: *Chlorinated solvents remain of concern in this area. Although Section 1.8.1.4 reports data indicate the source has been entirely removed, the Department is not yet in agreement. The Department does agree with Section 3.1.3, which states "additional data regarding VOC concentrations in soil near the former lime pit should be collected because the historical data set is limited and dated." As indicated in the submittal, three borings are to be performed, along three edges of the pit, to a depth of 20'; two to three samples are to be collected from each. Although this is acceptable, additional sampling is recommended. There has been speculation source material remains located under/trapped by the lime pit's concrete slab base. Has consideration been given to accessing/evaluating beneath the base/slab itself via angled or horizontal sampling to allow for possible determination of same associated with this feature?*

B1. RESPONSE: The footprint of the former lime pit is 7x13 feet, which is not a large enough area to harbor a localized high-concentration area beneath the slab that has not also impacted the area immediately adjacent to the slab. Therefore, the borings completed in January 2014 in accordance with the work plan are sufficient to evaluate the subsurface for the following reasons, and no changes to the sampling strategy for this site are proposed:

(a) If dissolved-phase TCE migrated through the concrete bottom of the pit (which is approximately 10 feet below ground surface (bgs) and just beneath the water table present at approximately 8 feet bgs) then it would migrate laterally with the adjective groundwater flow beneath the pit and would have impacted soil concentrations adjacent to the pit;

(b) If pure-phase TCE migrated through the concrete bottom of the pit then it would continue to sink through the aquifer until an aquitard was encountered, followed by lateral movement along the top of the aquitard, causing it to be detectable in borings immediately adjacent to the pit. Based on a review of the existing data for the site, there is no evidence for a source of pure-phase TCE beneath or near the pit;

(c) Soil boring results adjacent to the three crossgradient/downgradient sides of the pit from January 2014 indicate low to non-detectable chlorinated VOC concentrations that do not exceed any applicable soil quality criteria. This highest TCE concentration detected in soil samples was 0.0022 mg/kg. Two samples from each boring were collected – just above the water table and just above the aquitard encountered at approximately 18 feet bgs; and

(d) Given the relatively small area of the pit, and all the existing soil and groundwater chemistry data from around the pit (including the 2014 data), the use of angled or horizontal borings is not needed to adequately characterize the area for the RI. In this instance, angled/horizontal borings would not provide significantly better coverage for the RI than that which is already provided by the borings immediately adjacent to the pit.

B2. COMMENT: *The location of the Former Lime Pit in relation to monitor wells as denoted on Figures 1.4 and 3.5 does not correspond to its location as denoted on Figures C-12 and C-13. Please clarify which figures are accurate.*

B2. RESPONSE: Based on review of historical documents, the Former CW1 Lime Pit is correctly located on the site maps in our work plan. Maps in some historical documents that show the former lime pit in a different location are incorrect. These maps in historical documents appear to show the location of the treatment system and incorrectly identify it as the former lime pit. Therefore, the location of the lime pit shown on the TCE isopleths maps in Appendix C of

the work plan (pages C-12 and C-13) is inaccurate. The work plan text will be revised to note this fact, and a note will be added to the legend of the Appendix C figures indicating that the location of the Former Lime Pit is incorrect.

B3. COMMENT: *Groundwater has been found to continue to exhibit elevated levels of several metals as well as TCE. The Department previously agreed the elevated levels of antimony, arsenic and lead found in groundwater at this area of concern were reflective of naturally occurring conditions, and required no further action for metals in the groundwater. TCE contamination remains documented in groundwater samples taken from wells MW-28, MW-29 and MW-281. The Army proposes to resample these wells for VOCs using low-flow purging and sampling methodology to assess current groundwater quality. Slug tests will also be performed on wells MW-29, MW-40, MW-281 and MW-291. The proposals are acceptable. Low flow purging and sampling must be consistent with the guidelines detailed in the Department's 2005 edition of the NJDEP Field Sampling Procedures Manual.*

B3. RESPONSE: Concur. Low flow sampling will comply with the 2005 edition of the NJDEP Field Sampling Procedures Manual.

B4. COMMENT: *It has recently been determined 1,4-dioxane is frequently found as a co-contaminant with trichloroethene (TCE). To address concerns regarding the possible presence of 1,4-dioxane, review of the groundwater analytical data previously generated is required. If 1,4-dioxane was not included in previous sampling efforts, evaluation for same must be included in future sampling episodes. The Interim Specific Ground Water Quality Standard is 10 ppb; any exceedences of same must be addressed.*

B4. RESPONSE: Historically 1,4-dioxane has not been included in the groundwater analysis. TCE was detected in site groundwater samples collected in January 2014. The maximum TCE concentration was 8.9 µg/L in groundwater from deep source area well CW1MW281. Therefore, 1,4-dioxane will be targeted for analysis in selected source area and downgradient wells (shallow and deep) during the next groundwater sampling event at the site.

C. <u>FTMM-53/Building 699 -Former Gasoline/Service Station</u>

C1. COMMENT: *Previous assessments performed in the area of this former gas station had identified elevated levels of volatile organics (benzene) and TPH in soil, but had not adequately defined the vertical extent of the contamination (Borings 3, 7, 10, 13, 14,46,47 & 48), nor the horizontal extent of the contamination to the north. The two borings proposed on the north side of Saltzman Avenue are acceptable for the necessary delineation of soil contamination in that direction, as are the three borings proposed beneath the canopy in the vicinity of the fueling islands (previously not specifically investigated).*

C1. RESPONSE: Concur.

C2. COMMENT: *As regarding the four proposed borings at areas previously noted as contaminated (Borings 2, 13, 14 & 47), it is agreed an assessment of current conditions in these locations is appropriate. The area of Boring 48, however, remains in question. Figure 3.6, which appears to represent certain pre-and post-injection soil sample results, does not provide the findings for the full vertical extent of the '00 sampling, reporting only to the 66-72" interval for both the March '00 and the corresponding May '01 post-sampling. It is not known if the May '01 sampling included intervals beyond that depth.*

C2. RESPONSE: Although pre-injection (enzyme-enhanced bioremediation [EEB]) soil sampling extended to 12 feet bgs, the May '01 post-injection soil sampling event only went to a depth of 66-72 inches. The EEB injection occurred between the ground surface and a depth of 3-

4 ft bgs because the objective was to more effectively remediate clayey soils observed at shallow depths that would not be effectively remediated by the planned SVE system.
No changes to the work plan are proposed based on this comment. The area of Boring 48 is addressed in the response to the next comment.

C3. COMMENT: *It is of interest, however, as in certain borings the March '00 results as shown on page C-17 indicate levels of contamination increased below that depth. For instance, in Boring 48, benzene was found at 110 ppm in the 66-72" interval in March '00, and at 260 ppm in the 138-141" interval. As it appears there is no correlating post-treatment value indicating completion of either vertical or horizontal delineation at Boring 48, contamination is considered to (horizontally) extend to Borings 49 & 52.*

C3. RESPONSE: Boring location 52 was non-detect for BTEX and TPH for the entire 12-ft length of the boring in 2000. Therefore, there is no reason to suspect that contamination has extended to that location. The work plan will be revised to add one new soil boring adjacent to former Boring 48 due to the detection of elevated contaminant concentrations at the completion depth of that boring (12 feet bgs). The objective of this boring will be to determine current magnitude and vertical extent of soil contamination at this location.
Review of the pre-EEB injection soil quality maps that depict soil sampling results down to 144 inches shows that BTEX contamination in soil to a depth of 12 ft bgs is bounded laterally on all sides except to the north, which our work plan addresses with two additional soil borings along Saltzman Avenue. These pre-injection borings were sufficiently deep to detect any smear zone contamination bordering the water table given a water table depth of approximately 9 feet bgs. Given that the lateral extent is bounded except to the north, the primary objective of the eight soil borings to be drilled in the previously-defined contaminated area south of Saltzman Avenue is to determine the current magnitude and vertical extent of contaminants in soil. Five of the borings (including the new one at Boring 48) are located in the areas that had relatively high BTEX concentrations during the 2000 and 2001 sampling events, and three are located in a previously uninvestigated area beneath the canopy to further delineate this area based on Geoprobe soil boring results obtained north and south of the canopy. The soil borings will be advanced through any fuel hydrocarbon smear zone bordering the water table, to a maximum depth of 20 feet bgs, thereby obtaining current vertical extent data. The combination of historical data collected by Versar in 2000 and 2001 and new data (geographically distributed and targeting previously identified higher concentration areas) collected per this work plan is expected to adequately define the current magnitude and lateral/vertical extent of concentrations exceeding NJDEP cleanup criteria.

C4. COMMENT: *The former waste oil tank post excavation samples indicated TPH remained at 6,090 ppm and 11,600 ppm. Although Section 1.8.2 of the submittal indicates no further sampling is proposed as part of this Remedial Investigation, it is not clear why delineation is considered adequate. Are results from the geoprobe effort noted on page C-18 being utilized for same? If so, please indicate which borings are considered proximate to the former tank.*

C4. RESPONSE: Geoprobe borings 38 and 39 were drilled near the former waste oil tank location in 2000. Boring 39 was drilled near the SW corner of the former tank excavation and boring 38 was drilled approximately 15-20 ft east of the excavation. Soil sample results for these two borings from the 2000 sampling event showed relatively low TPH concentrations ranging up to 252 mg/kg. The 2013 groundwater sample from MW12, installed within the UST excavation footprint, was non-detect for VOCs, and lead concentrations in groundwater from this well have

historically been less than the GWQS. Available data indicate that the elevated TPH concentrations detected during tank removal in 1992 were localized. The work plan will be revised to add one new soil boring at the location of former tank excavation sidewall sample SP-2, where the highest soil TPH concentration was detected in 1992 (11,600 mg/kg); this boring will allow current soil quality to be evaluated. The boring will be advanced through any fuel hydrocarbon smear zone bordering the water table, to a maximum potential depth of 20 feet bgs, the same as planned for the soil borings north of Building 699.

Neither the depth of the elevated TPH concentration detected during waste oil UST removal in 1992 nor the depth of the excavation were documented in the Weston (1993) tank removal report. It appears to have been an excavation sidewall sample. The report stated that there were no visual or flame ionization detector evidence of contamination during excavation. Three samples will be collected from the soil boring based on field observations of contamination and PID headspace screening. If there is no indication of contamination at the boring location, then samples will be collected from midway between the ground surface and the water table (approximately 4-5 feet bgs), just above the water table (approximately 7-9 feet bgs), and the bottom of the boring (15 feet bgs if there is no evidence of contamination at total depth, or up to 20 feet bgs if there is evidence of contamination at 15 ft). If there is field evidence of contamination, then one of the three samples will be collected from the most contaminated interval encountered based on field screening and the other two samples will be collected to determine the vertical extent of the contaminated interval. However, one of the three samples will be collected from just above the water table.

Soil samples will be analyzed for EPH. Based on EPH results one sample containing the highest concentration will also be analyzed for VOCs+TICS, SVOCs+TICS, PCBs, and TAL metals. The intent for the laboratory analyses is to be consistent with NJDEP's current analytical requirements for investigating waste oil tanks, recognizing that the new soil data will be combined with historical data collected under previous regulatory requirements to complete the RI.

C5. COMMENT: *The PCE and TCE detected in groundwater beneath the site are reported as suspected of being related to discharges from a former waste oil UST and/or from the former dry cleaners at adjacent site FTMM-68. The Army proposes to install two shallow wells to delineate the extent of the chlorinated VOCs. Groundwater samples will be analyzed for VOC+TICs and lead. The proposal is acceptable.*

C5. RESPONSE: Concur.

C6. COMMENT: *The Army states that "selected existing wells" will also be sampled for site-related contaminants. This proposal does not specify the name of the wells to be sampled or the basis for selecting the wells. Without same, the Department cannot comment on nor approve the work plan. Our April 5, 2013 letter specifically referenced monitoring well 699MW-3 as not having been sampled since 2007, though the '07 results exceeded the Ground Water quality Standards for benzene and VOC TICs; inclusion of same in the anticipated sampling, or an explanation for its omission is required.*

C6. RESPONSE: This text was referring to the August 2013 baseline groundwater sampling event that was performed at numerous sites across FTMM. At the time of work plan preparation the scope of that sampling event had not been finalized. The intent was to use the August 2013 sampling data for the RI to the extent practical. Fourteen wells at FTMM-53 (listed below) were sampled for VOCs and TICs in August 2013.

616MW01	699MW06	699MW16
699MW01	699MW08	699RW03
699MW02	699MW09	699RW05
699MW04	699MW12	699RW11
699MW05	699MW15	

Well 699MW03 (a.k.a. 699MW-3) was omitted from the groundwater sampling plan because this well was abandoned in 2007. However, adjacent well 699RW05 was sampled seven times from 2008-2010 and again in August 2013. The 2013 data are sufficient to characterize the current extent and magnitude of VOC contamination in groundwater; however, groundwater samples collected in 2013 were not analyzed for lead. Therefore, in addition to sampling of the two new downgradient wells as outlined in the RI/FS Work Plan, the work plan will be revised to add sampling of the four wells having volatile fuel hydrocarbon concentrations exceeding GWQS in August 2013 for total and dissolved lead during the RI. These wells include 699MW03, 699MW06, 699RW11, and 699RW03. Three of these wells (699MW06, 699RW03, and 699RW11) had total lead concentrations exceeding the GWQS in 2010.

C7. COMMENT: *Groundwater samples will be collected using low-flow purging and sampling methodology. Low flow sampling must be consistent with the guidelines detailed in the Department's 2005 edition of the NJDEP Field Sampling Procedures Manual.*

C7. RESPONSE: Concur. Groundwater sampling will comply with the 2005 edition of the NJDEP Field Sampling Procedures Manual.

C8. COMMENT: *As regarding concentrations of various metals found in groundwater throughout Fort Monmouth, the "maximum MP background concentrations" -referenced in Section 3.2.1.2.5 -as presented in the historic Weston report/s, was not accepted by the Department. Although it is possible elevated levels of certain metals are reflective of naturally occurring conditions and sample turbidity (and which determination has been made by the Department at certain areas of concern, as above), that decision is not applied to the entire site, but is made on an area of concern specific basis only.*

C8. RESPONSE: The determination of background metals will be made on an area-specific basis in the RI report to the extent that it is technically defensible given the available data. In addition, the work plan will be updated to support limiting groundwater metals analysis for FTMM-53 to lead.

C9. COMMENT: *Slug tests will be performed on wells 699RW-4 and 699RW-11. This proposal is acceptable.*

C9. RESPONSE: Concur.

D. <u>FTMM-59/Building 1122 -Former Vehicle Maintenance Shop</u>

D1. COMMENT: *Section 3.1.5 indicates the site has been adequately characterized and that the RI may be completed following some minor additional sampling. Previous comments from the Department concerning FTMM-59, however, do not appear to have been addressed. An August 27, 2008 letter from the Department outlined deficiencies in a 2005 RI report for this site. The Army provided a response to the Department letter in a Remedial Action Progress Report (RAPR) dated June 2010, however, the Army's response for certain of the comments indicated the Department's concerns would be addressed in a future RAPR. A subsequent RAPR for this*

site has not been received. The two main issues of concern noted in the August '08 letter are as follows:

(a) BEX contaminated soils were identified in the vicinity of the No. 2 fuel oil UST excavation. The Department requested delineation of the soil contamination as well as installation of a monitoring well within or hydraulically down gradient of the excavation to assess groundwater quality. See further comments regarding GW21, below.

(b) *Free product was identified in certain geoprobe samples. Additional information is necessary, including a figure showing the location of the impacted geoprobes and lateral extent of the product.*

Geoprobe boring GW21 (not shown on Figure 3.8 of the submittal, but noted in Appendix C on page C-32 -both the paper and electronic copy of which are almost illegible, page C-31 is only slightly more legible), located just north of Building 1122, exhibited levels of benzene, ethylbenzene and xylene above the residential and/or Default Impact to Ground Water Soil Screening Levels (Table 1) at 10' below grade. The submittal stipulates that as the exceedences are below the water table, they "do not require an additional investigation to meet the objectives of the RI/FS. Soil in this area was previously excavated to a depth of 8' ... " (the depth to groundwater). However, as per the Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling for Soil document, sampling below the groundwater table is appropriate to determine if exceedences to the Direct Contact Soil Remediation Standard are present, or if the source of the contamination (e.g. an underground storage tank) is/was located below the groundwater table. Based upon information submitted, delineation remains incomplete for this area of concern (AOC).

D1. RESPONSE: Concur. The delineation of this area of concern is incomplete. The original Geoprobe investigation report by Versar stated that free product had been observed but no specifics were provided regarding the location of the product except that it was estimated to be contained within an approximately 15-foot-long area based on TPHC results for soil and groundwater, and was not migrating toward Mill Creek. It is possible that free product was either observed or inferred at Geoprobe boring GW21 given that that was the only Geoprobe boring location where a groundwater sample was not collected and where a deeper soil sample from 10 ft bgs (below the water table and the 1995 excavation depth of 8 ft bgs) was collected for laboratory analysis. Three sumps were installed at unidentified locations in 2004 for the removal of free-phase product. Product thicknesses measured in the sumps ranged up to 1.8 inches, and a total of 6.3 pints of product were removed from June to August 2004; no product was recovered from Sept 2004 to March 2005, when product thickness measurement in the sumps was discontinued. There is no evidence that recoverable free product remained at the site after 2004.

The elevated BEX concentrations detected in soil at Geoprobe boring GW21 indicate a volatile fuel such as gasoline, although there are no gasoline tanks at the site. A 1,500-gallon No. 2 Fuel Oil UST and associated piping were located in the vicinity, but post-removal soil sampling did not detect more than 117 mg/kg TPHC and no holes or potentially contaminated soils were observed during UST removal. A historical site map indicates waste storage (oil/antifreeze) in the northern portion of Bldg 1122 but there is no historical evidence of releases.

Two new primary soil borings will be added to the work plan to further evaluate the soil at and near former Geoprobe boring GW21, where benzene and xylene concentrations exceeding NJDEP RDCSRS were detected in soil below the water table and the 8-foot-bgs base of the 1995 soil excavation. One boring will be installed adjacent to GW21 to determine current contaminant

concentrations and their vertical extent in soil, and the other boring will be installed approximately 40 ft downgradient (to the north-northeast) near former Geoprobe boring GW23. Similar to FTMM-53, soil borings will be advanced to a minimum depth of 15 ft bgs, and to a maximum depth of 20 ft bgs if field screening indicates contamination at 15 ft bgs. Given that soil in this area was excavated to 8 ft bgs, a minimum of two soil samples will be collected from each boring below a depth of 8 ft, one from the most contaminated interval (assumed to be approximately 9-10 feet bgs) and a deeper sample at the bottom of the boring to determine vertical extent. Soil samples will not be collected above a depth of 8 ft unless field observations/screening indicate that contamination is present.

Given the potential for multiple sources of petroleum contamination in this area, soil samples will be analyzed for target analytes associated with leaded gasoline and No. 2 fuel oil (i.e., VOCs+TICs including 1,2-dibromoethane and 1,2-dichloroethane, lead, and EPH). Twenty-five percent of samples where EPH is detected over 1,000 mg/kg will also be analyzed for 2-methylnaphthalene and naphthalene. The intent for the laboratory analyses is to be consistent with NJDEP's current analytical requirements for investigating these types of petroleum, recognizing that the new soil data will be combined with historical data collected under previous regulatory requirements to complete the RI.

The new boring at GW21 will also be converted to a permanent monitoring well screened approximately 2 feet above and 8 feet below the water table. In addition, a groundwater grab sample will be collected from the downgradient boring. Groundwater from the new well and the downgradient grab sample will be analyzed for VOCs+TICs including 1,2-dibromoethene and 1,2-dichloroethane, and SVOCs+TICs.. The new well will also be checked for the presence of free product. If visual observation and field screening indicate the presence of soil contamination at either of the two primary soil borings, up to two optional soil borings will be advanced to assess lateral extent. The work plan will be revised to describe the additional investigation work described above. In addition, better quality historical figures that provide supporting information will be provided in Appendix C.

D2. COMMENT: *Service Bays #10 & 12 – elevated TPH -Section 1.8.3.4 (Hydraulic Lift Bay #12) references post excavation sample results above criteria, and Section 1.8.3.7 (Hydraulic Lift Bay #10) references TPHC to 21,619 ppm. Section 1.8.3.8 references sampling performed in March '10 which reportedly delineated contamination, however, it does not appear the locations or actual findings were included in the submittal. Although the Work Plan indicates the contamination "appears localized and additional soil sampling is not required during the RI to support the FS", insufficient information has been submitted to allow for comment (or support approval of adequate delineation).*

D2. RESPONSE: The information on the March 2010 sampling was unintentionally omitted from the work plan. Based on historical sampling results it appears that the contamination is localized and additional soil sampling during the RI is not required to support the risk assessment and FS. The supporting information will be added to the Final Work Plan.

D3. COMMENT: *Chemical Storage & Paint Booth Sheds – Elevated levels of SVOCs/PAHs, and lead have been found in the surface soil adjacent to the sheds. Vanadium has been found in shallow and deeper intervals. The sampling proposed for delineation of the PAH exceedences is acceptable. The vanadium, found to 82.1 ppm, is "not believed to be site-related". Although this may be accurate, the referenced maximum background concentration at FTMM of 94 as per the '95 Weston report was never accepted by the Department as establishing*

"background" concentrations for the site. Further information in support of the assertion vanadium is representative of naturally occurring conditions is necessary.

D3. RESPONSE: Further information in support of the assertion that vanadium is representative of naturally occurring conditions is summarized below, and will be added to the work plan.

- The elevated concentrations of vanadium (79-82 mg/kg) that slightly exceeded the residential DCSRS were detected in three soil samples collected at a depth of 60-72 inches bgs at the sheds. Vanadium concentrations in near-surface soil samples (0-6 inches) at the sheds were much lower (11.7-17.2 mg/kg). Chemical releases from these sheds would be expected to have occurred at the ground surface, and contaminant concentrations in near surface soil should be higher than at 5-6 feet bgs (as is evidenced by PAH and lead concentrations which are higher near the ground surface than at depth), especially given the typical limited mobility of metals in soil.
- In addition to the Weston (1995) maximum background concentration, the 2001 New Jersey Geological Survey Investigation Report *Baseline Concentrations of Arsenic, Beryllium and Associated Elements in Glauconite and Glauconitic Soils in the New Jersey Coastal Plain* presents background concentrations for vanadium in soil that are greater than 82 mg/kg (and in some cases substantially greater). For example, 14 samples of whole soils from five glauconite-rich soil series were analyzed for total metals, and vanadium concentrations in all 14 samples exceeded the NJDEP RDCSRS, with concentrations ranging from 81 to 411 mg/kg. The Weston and NJGS reports support the occurrence of naturally occurring concentrations of vanadium exceeding the RDCSRS in soils similar to those present at the facility.

Based on the above information, the work plan will not be modified to include further investigation of metals in the area of the chemical storage and paint booth sheds (above and beyond what is already proposed to fill other data gaps).

D4. COMMENT: *The Army proposes the collection of groundwater samples from two recently installed monitoring wells near the Chemical Storage Shed and Paint Booth/Shed. The document indicates the specific locations of these two wells is currently unknown, and is to be determined during a subsequent site visit. Comments regarding the locations of the wells are therefore pending.*

D4. RESPONSE: During the most recent sampling (August 2013), monitoring well 1122MW07 was located off the northeast corner of shed 1 and it was sampled as part of the baseline monitoring event. The second well was not located during that sampling round. The work plan will be modified to include the sampling of 1122MW07 and a more in-depth field search for the missing groundwater well.

D5. COMMENT: *Additionally, the Department's August 13, 2013 letter responding to the March 2013 Sampling and Analysis Plan for Remedial Investigation/Feasibility Study/Decision Documents indicated further concerns remained relative to this parcel.*

(a) Questions regarding adequate investigation of the floor drains, hydraulic lifts and two oil water separators in the area of Building 1122 have not yet been resolved. Delineation requirements are therefore not resolved.

(b) Although the monitor well analytical results did not trigger an evaluation of the vapor intrusion (VI) pathway during the recent VI evaluation, data reported in the July '08 Site Investigation (SI) Report (Section 3.9) indicated elevated levels of TCE in subslab soil gas analytical results, which itself is a trigger for further VI evaluation as it may indicate

levels of contamination of concern in the area soils or possibly beneath the building. Additional evaluation is necessary. This may include soil sampling to evaluate current soil conditions in the immediate area and/or additional vapor intrusion investigation, as was recommended in the July '08 SI Report.

(c) *To address concerns regarding the possible presence of l,4-dioxane, frequently found as a co-contaminant with trichloroethene (TCE), a review of the groundwater analytical data previously generated is required. If 1,4-diozane was not included in previous sampling efforts, evaluation for same must be included in future sampling episodes. The Interim Specific Ground Water Quality Standard is 10 ppb; any exceedences must be addressed.*

D5. RESPONSE:

(a) All areas that have been impacted by documented or suspected releases have been investigated to some degree. Based on the response to the comment above concerning service bays #10 and #12 we believe there is sufficient information to support no further soil sampling necessary during the RI. Additional supporting historical findings will be added to the work plan and subsequent RI to support no further investigation in this area.

(b) Two subslab soil samples were collected beneath the eastern half of Bldg 1122 in December 2007, near the northern wall. The sample locations were biased to the northeast corner of the building due to historical detections of PCE in groundwater north and northeast of the building. Because this facility was utilized for auto repair, sub-slab soil gas was selected for analysis in lieu of indoor air (IA), presumably due to the potential for facility activities and operations to bias indoor air sample results. PCE and TCE concentrations ranged from 135 to 285 $\mu g/m^3$ and 44 to 763 $\mu g/m^3$, respectively. The current NJDEP soil gas screening levels (SGSLs) for PCE are 470 $\mu g/m^3$ (residential) and 2,400 $\mu g/m^3$ (non-residential). Screening levels for TCE are 27 $\mu g/m^3$ (residential) and 150 $\mu g/m^3$ (non-residential). Therefore, TCE in one of the sub-slab soil gas samples exceeded the non-residential SGSL. In addition, a near-slab soil gas sample collected just north of the building near one of the sub-slab sample locations contained 1,130 $\mu g/m^3$ TCE, which also exceeds the non-residential SGSL.

The work plan will be revised to include collection of three sub-slab soil gas samples for VOC analysis to determine the current sub-slab soil gas conditions. One sample will be collected at the location of the 2007 exceedance of the SGSL for TCE (at the NE corner of the building). A second sample will be collected approximately 30 ft west of the initial sample, midway between the two 2007 sub-slab sample locations. A third sample will be collected approximately 25 ft southwest of the initial sample, approximately midway between the north and south edges of the building. If VOC concentrations in these samples do not exceed SGSLs then no additional VI evaluation will be recommended. If SGSL exceedances are detected, then IA sampling will be performed.

(c) Historically 1,4-dioxane has not been included in the groundwater analysis. This compound will be targeted for analysis during the next groundwater sampling event at the site.

D6. COMMENT: *Due to the unanswered concerns of the Department, approval of the RI proposal cannot be granted at this time.*

D6. RESPONSE: Acknowledged.

E. <u>FTMM-68/Building 700 -Former Dry Cleaners</u>

E1. COMMENT: *A leaking solvent UST was previously located outside the southwest corner of Building 700. Although 450 drums of impacted water and soil were excavated during tank removal, post excavation sampling indicated the excavation bottom (7.5') exhibited 23,889 ppm PCE in the Spring of '11, while a sidewall sample exhibited 20.4 ppm (Section 1.8.4.1 line 15 states the exceedence is on the western sidewall, while the sketch in Appendix C-5 shows the exceedence on the eastern sidewall; please clarify). Piping run sampling analytical results were unavailable. The Army proposes to collect up to 15 soil samples from up to five soil borings located near the former UST and piping run, as well as groundwater samples from two wells reportedly located in the southwest comer; analyses will include VOC+ TICs. Six direct push points will be installed downgradient of Building 700 and grab groundwater samples will be analyzed for VOCs. Based on sampling results from the monitoring wells and the push points, up to 6 additional direct push points will be installed to further define the horizontal and vertical extent of the chlorinated VOCs. Results from the groundwater sampling will be utilized to determine placement of up to four monitoring wells which will be sampled for VOC+TICs. The proposal is acceptable.*

E1. RESPONSE: Concur. One point of clarification: the PCE concentration of 20.4 ppm was collected from sample 565F which was depicted as a piping sample in the northeast corner of the excavation. The text in Section 1.8.4.1 will be revised to indicate the northeast corner near the piping.

E2. COMMENT: *Slug tests will be performed on two shallow monitoring wells and two deep monitoring wells. This is acceptable.*

E2. RESPONSE: Concur.

E3. COMMENT: *The proposal indicates groundwater samples obtained from monitoring wells will be collected using low-flow purging and sampling methodology. Low flow sampling must be consistent with the guidelines detailed in the Department's 2005 edition of the NJDEP Field Sampling Procedures Manual.*

E3. RESPONSE: Concur. Low flow sampling will comply with the 2005 NJDEP Field Sampling Procedures Manual.

F. <u>Miscellaneous</u>

F1. COMMENT: *It was unclear in some instances that the intended sampling interval was to be in the standard 6" increments. Although this is likely understood, please ensure sampling increments are in accordance with standard protocol, with an explanation provided if more or less than a six-inch increment is sampled because of poor sample recovery or other field logistical problems.*

F1. RESPONSE: The intended sampling interval will be the standard 6" increments. If sample recovery is poor an explanation will be recorded in the field and included in the sampling report. The Field Sampling Plan (FSP) will be revised as needed to reflect this directive.

F2. COMMENT: *As indicated above, the scale and/or clarity of the maps was at times problematic, in both the paper as well as the electronic version. Although this applies to several of the maps, predominantly those of Appendix C, it particularly may be said of the maps/figures included in Appendix C as pages C-31 and 32. These were of insufficient clarity to withstand enlargement electronically, and insufficient scale to be legible on the paper version, and could therefore not be properly evaluated or considered.*

F2. RESPONSE: Electronic copies of the historical documents are now available and will be used for the RI/FS Reports for each Site. The quality of maps and tables provided in

Appendix C of the work plan will be improved as needed and to the extent possible to make them more functional.

F3. COMMENT: *As indicated above, "background" levels of metals, or the determination that elevated levels of specific metals are reflective of naturally occurring conditions, are to be made on an area specific basis. Those areas at which that determination has previously been made have been issued a formal letter including a statement of same.*

F3. RESPONSE: The determination of background metals will be made on an area-specific basis in the RI report to the extent that it is technically defensible given the available data. In addition, the work plan will be updated to support the scope of metals analysis proposed.

F4. COMMENT: *Section 3.2.1.3.1 – line 36 - a typo appears to have inadvertently listed FTMM-59 as FTMM-53.*

F4. RESPONSE: Concur. The reference has been changed to FTMM-59.

F5. COMMENT: *Figure 3.4 – Preliminary Conceptual Site Model Diagram for FTMM-68, appears to have inadvertently used "Former Lime Pit" in the primary source box, rather than FTMM-68's former dry cleaning operations.*

F5. RESPONSE: Concur. The Preliminary Conceptual Site Model Diagram has been modified to list the primary source as the Former Dry Cleaning Operations.

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Regards,

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