

RESPONSE TO COMMENTS

AREA 1 PHASE 1 DETAILED DEVELOPMENT PLAN BALTIMORE WORKS SITE, BALTIMORE, MARYLAND AUGUST 2013; REVISED NOVEMBER 2013

Responses to comments issued by the United States Environmental Protection Agency, Region III (USEPA) on October 31, 2013 and the Maryland Department of the Environment (MDE) on October 31, 2013, relative to the Area 1 Phase 1 Detailed Development Plan for the Baltimore Works Site, Baltimore, Maryland, dated August 2013, are presented herein. Each comment is presented verbatim in italics with a direct response to the comment immediately below. The responses have been incorporated into the revised Area 1 Phase 1 Detailed Development Plan (DDP) as denoted herein.

USEPA - REGION III COMMENTS AND RELATED RESPONSES

Area 1 Phase 1 Development

1. *Section 4.1.5 Provide more detail around to Central Avenue Bridge scope specifically as to how any part of the project may impact the HMS or the MMC.*

Response:

Future Central Avenue Bridge construction requires foundation construction outboard of the HMS deep hydraulic barrier and former Honeywell bulkhead structure. The use of closed-end driven high capacity pipe piles has been recommended, but this work will be produced under City jurisdiction, and cannot be controlled by the development. The Exelon project will implement three key features to isolate the bridge foundation construction from the HMS and MMC:

- First, a sheet pile barrier will be installed to augment the existing SB Barrier (hydraulic barrier) to prevent pile driving energy from influencing barrier performance.
- Second, a cutoff sheet pile will be placed outboard of the SB Barrier to support the existing S-B barrier during pile driving.
- Third, a structural platform will be placed to support the existing HMS Vault 11, Vault 12, MJ-12, and conveyance lines, and a new structurally supported MMC. The existing HMS conveyance and pumping systems are inboard of the former bulkhead, so that they are isolated from the bridge foundation construction.

These features isolate future Central Avenue Bridge construction from the remedy and provide independent support for the HMS and MMC; future bridge construction will not impact the HMS or MMC.

2. *Section 4.2- Provide a figure with a critical path schedule for the project indicating tasks, duration and overlap of simultaneous tasks that specifically identifies the tasks of intrusive activity to the MMC.*

Response:

A Critical Path Method (CPM) schedule for the project that specifically identifies the tasks that are intrusive to the MMC is provided in Appendix D of the DDP. The schedule shows the tasks, duration, and overlap of simultaneous tasks. A separate figure showing the sections described in the CPM schedule is also provided in the appendix for reference purposes.

3. *Section 5.1.3- Please include a citation to the Maryland regulations referenced in this section for the procedure to abandon groundwater wells.*

Response:

Acknowledged. See Section 5.1.3 for the revision.

4. *Section 5.1.4- Provide more detail or refer to the appropriate drawings to clearly explain how the "new MMC" identified in this section will connect to, and become part of, the existing MMC. Include in this discussion the details of any intrusive activities to the existing MMC.*

Response:

Construction sequence and details for the "new MMC" referenced are detailed in Drawings DDP F1.23 and F1.24; citations and clarification have been added to the DDP text. The "new MMC" is connected to the existing MMC at the Valley Drain using Detail 4 on Drawing DDP F1.24. Foundation piles and pile caps will connect to the existing MMC as detailed in Drawings DDP F1.30 and F1.31, clarification has been added to the DDP text.

5. *Section 5.2.1- Provide an explanation or refer to appropriate sections of the DDP documents to explain the consideration given to soil and groundwater displacement as a result of the pile driving operation and the impact this displacement will have on the existing ERS.*

Response:

The Honeywell HMS piezometers and pumps will be used to control the water table, which will prevent a general rise in the water table as piles are driven. Water table control will be provided with the standard inward gradient algorithm for operation of the pumps. In addition, pumps will be available to dewater open excavations to remove storm water and construction water to prevent a water level rise to the MMC (DDP §7.2.3). Each pipe pile will displace soil and ground water, causing a temporary rise in the water surface local to the pile. The water surface rise, if any, will be limited, and will dissipate rapidly after a pile is driven. The lowest pile cap subgrade is 3.5 ft., above the ground water level managed by the HMS system.

6. *Section 5.3- Provide a table to support this section which will summarize which utilities will be above the synthetic layers and which utilities will require intrusive activity for locating below these layers.*

Response:

As currently proposed, all utilities will be above the synthetic layers. This section has been revised to clearly state as such.

7. *Section 7.1 - How and when will the agencies be made aware of stop work notifications being issued (if required) to contractors in the field?*

Response:

MDE's Field Representative will be notified by the Developer's Field Representative at the time a Stop Work notification is issued to Contractors in the field. MDE's Field Representative will then contact and relay the information to EPA's and MDE's Project Coordinators as deemed appropriate by the agency's field representative. The modification has been incorporated in Section 7.1.

8. *Section 7.1- The CQC Manager should not have any other duties other than CQC.*

Response:

Acknowledged. See Section 7.1 for the revision.

9. *Section 7.3 .1 - Add a requirement that digital construction photographs be included in weekly progress reports in the form of CDs and/or posted at a location where they can be viewed.*

Response:

Acknowledged. See Section 7.3.1 for the revision.

Appendix B Control Documents

Air Monitoring Plan

Baltimore Works Site Air Monitoring Plan Area 1, Phase 1 Development (Appendix B Control Documents of the Detailed Development Plan) dated August 2013

Air Monitoring Plan Text

EPA is not providing review comments on the Plan text because EPA cannot accept the hexavalent chromium data and cannot accept the PM 2.5 data due to significant flaws in sampling methodology and quality assurance procedures. The detailed rationale for the disapproval of these data is provided below. However, based on EPA's review of the Plan, guidelines are provided under Recommendations (below) to facilitate the production of a future acceptable Air Monitoring Plan, that incorporates the recommended pre-construction air monitoring study also described below under Recommendations.

Response:

A new Air Monitoring Plan has been prepared. As required by EPA/MDE, the preparation of a QAPP and SAP for pre-construction baseline and construction monitoring will be prepared in accordance with the new Air Monitoring Plan, and will be submitted under separate cover. Construction will not commence until the agencies have approved the Air Monitoring Plan, including the QAPP and SAP.

Data Disapproval Rationale

1. Pre-Construction Air Monitoring Sampling Methodology
 - a. *The inlets of the total suspended particulates and PM 2.5 samplers appear to have been placed too close together, based on the Plan's photographic documentation. According to 40 CFR part 58 Appendix A, the inlets should be between two and four meters apart. The close proximity of the inlets may have introduced interference in sample collection.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

- b. *The off-site air monitoring stations at the Baltimore Aquarium and Maryland Science Center appear to have been improperly sited, based on the Plan's photographic documentation and according to 40 CFR part 58 Appendix E. The Baltimore Aquarium monitoring station was placed too close to two obstructing walls, one of which also has housing containing louvers that may contain HV AC equipment. The inlet should have had at least 270 degrees of unrestricted airflow. The air monitoring station at the Maryland Science Center was placed too close to the tree dripline. A properly sited monitor should be at least 10 meters from the drip line of a tree. Both of these conditions potentially resulted in artificially high results.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

- c. *For the OSHA method ID 215 Hexavalent Chromium in Workplace Atmospheres, the recommended air volume is 960 L. An air volume of approximately 14,400 L of air per sample was used in the pre-construction air monitoring to achieve a lower detection limit. The overall method error using the 960 L air volume is stated to be $\pm 12.9\%$ in the original OSHA method ID 215. It is unknown what the effect of a very large increase in air volume has on the method error, which contributes to uncertainty regarding the OSHA method ID 215 results.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

- d. *It is unknown whether routine leak checks were performed on the air monitoring and sampling equipment for the pre-construction air monitoring, contributing to uncertainty regarding the results.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

- e. *The RAM DustTrak DR4000 appears to be obsolete, since it is not available on-line, nor can any manuals be found on-line. The use of obsolete equipment does not instill confidence in the pre-construction air monitoring.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

2. Pre-Construction Air Monitoring Results

- a. *The Air Monitoring Plan drew the conclusion that the measured airborne Cr(VI) is not associated with large particles, but rather is restricted to emission-sized particulate matter less than PM 2.5. However, this conclusion cannot be drawn from the analyses of PM 2.5 samples from the AirCon2 samplers, because the PM 2.5 Cr(VI) concentration in many of these samples was greater than the total particulate Cr(VI) concentration, which must clearly be in error. In addition, one of the greatest particulate concentrations was actually found in the PM 2.5 fraction (1 00 ug/m³) when the corresponding total particulate concentration was 8 ug/m³ (AM-1, June 22 result). Again, this must be in error. It would appear that the collection equipment was not operating as intended. The PM 2.5 data cannot be considered valid based on these large discrepancies, and further particle size analyses will be unnecessary.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

- b. *The quality of the hexavalent chromium data is suspect due to method deviation and therefore cannot be considered usable, because the analytical Standard Operating Procedure contained in the Pre-Construction Air Monitoring Hexavalent Chromium Analytical Quality Assurance Report and/or sample collection deviated from the specified analytical method (OSHA ID-215 version 2). The most significant deviations included failure to adhere to the method requirement of analyzing a media blank with every set of samples. Instead, two media blanks were analyzed for every 100 samples. Of the seven available media blanks, one was contaminated, resulting in a high bias qualification for the associated samples. Since so few media blanks were analyzed, it is possible that the true percentage of hexavalent chromium data to be qualified with a high bias based on media blanks is much greater. Additional significant deviations from the specified method include failure to calibrate the analytical instrument on a daily basis as required by the method, and failure to analyze adequate performance check samples on the calibration throughout sample runs. The lack of adequate instrument calibration creates great uncertainty regarding the reported hexavalent chromium results.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

- c. *The Pre-Construction Air Monitoring Hexavalent Chromium Analytical Quality Assurance Report provided by ERM failed to recognize any of the method deviations in the Standard Operating Procedure (SOP) and/or sample collection compared to the OSHA Method ID-215. The report also did not provide a comprehensive evaluation of all quality assurance/quality control parameters. This report therefore cannot be approved. Furthermore, there appeared to have been no review/re-calculation of the raw data. For the future pre-construction air monitoring study, a comprehensive third party data validation will be required that includes evaluation of the fidelity of laboratory performance to the method requirements, as well as an adequate percentage of raw data review/re-calculation. In addition, the National Functional Guidelines must be followed for data validation.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

- d. *The hexavalent chromium results reported in the pre-construction air monitoring are also incompatible with any background Cr(VI) data nationally. The pre-construction air monitoring results are much higher than the national average established in the 2004 - 2007 National Air Toxics Trends Sites (NATTS) data, which includes urban areas throughout the United States. This program utilizes the Modified CARB 039 method for Cr(VI) analysis.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

Recommendations

Pre-Construction Air Monitoring Study

Since EPA cannot approve the hexavalent chromium data obtained in the preconstruction air monitoring due to the reasons listed above, adequate pre-construction air monitoring data must still be acquired to establish a particulate standard and hexavalent chromium baseline. Three monitoring stations should be sited to establish background concentrations of total particulate matter (NIOSH 500), real-time

particulates (DustTrak™ DRX 8534), and hexavalent chromium, for daily sampling to continue for at least 15 days. One of the stations should be located at the Harbor Point construction site, one at the Baltimore Aquarium, and one at the City Recreation Pier. All stations will then continue to be used for monitoring throughout the intrusive site activities. The on-site location may be utilized as one of the four perimeter air monitoring stations proposed in the Air Monitoring Plan for intrusive activity monitoring.

Since EPA had to review the OSHA ID-215 method in comparison to the Baltimore Works Site Analytical Quality Assurance Report SOP, EPA also reviewed the modified CARB 039 method SOP, Eastern Research Group, Inc. From this review, it became apparent that the modified CARB 039 methodology is subject to less contaminant interference and is more tightly controlled analytically than the OSHA ID-215 method. The filters used in the modified CARB 039 method are initially de-contaminated prior to preparation, and then are protected from any source of contamination throughout preparation, shipment and storage, and extraction. In contrast, the OSHA ID-215 method contains no precautions for filter protection. This is particularly critical since the OSHA ID-215 method states that the post-column derivatization chemical (DPC) that forms a complex with Cr(VI) and provides the actual peak in the UV NIS detector "has the potential problem of reacting with other species," since it is a fairly reactive chemical. Chromatographic separation is not perfect, so if contaminated filters are extracted, other related species can contaminate the whole analytical system and react with the detector chemical, artificially elevating the detector peak and thus the result. Therefore, the modified CARB 039 method is clearly a more reliable method for Cr(VI) and will be necessary for all Site-related Cr(VI) analyses. Each of the three stations should contain the DustTrak™ DRX 8534 monitor (total particulates only), the AirCon2 sampler for total particulates (NIOSH 500), and the modified CARB 039 method sampler. The samplers should be sited according to criteria in 40 CFR part 58 Appendix A & E. Additionally, a DustTrak™ DRX 8534 real-time monitor should be located in duplicate at one of the stations for quality control. Finally, a detailed Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) will be necessary for approval of this pre-construction air monitoring study.

The DustTrak™ DRX 8534 monitor should be calibrated to the aerosol of interest. The DustTrak™ DRX 8534 monitor is calibrated to a default of A1 dust with a photometric calibration factor (PCF) of one. There is a procedure in the DustTrak™ DRX 8534 manual to determine the PCF. It is recommended that this procedure be done to determine the correct PCF, unless it is certain that the Baltimore atmospheric aerosol is A1 dust. In a study cited below, the DustTrak™ DRX 8534 was compared with a Federal Equivalent monitor (TEOM); the DustTrak™ DRX 8534 will overestimate particles smaller than the cut-off sizes but underestimate those larger than the cut-off sizes. This is inherent in the method the DustTrak™ DRX 8534 uses to determine particle size. The DustTrak™ DRX 8534 agrees with the Federal Equivalent method within approximately ± 10%. The direct quote below states the limitations of the capabilities of the monitors when used in ambient conditions.

“The DRX measures aerosol mass concentrations using the light scattering principle, its accuracy is affected by the shape, size distribution, refractive index and density of the aerosol being sampled. Therefore, although the instrument is suitable for measuring the relative concentration change of aerosols having constant properties such as those typically encountered in the workplace, it might have considerable uncertainty when it is used for atmospheric aerosol monitoring due to the temporal and geographical variations of aerosol properties. Previous studies have shown, however, that when operated with consistent methodology, light scattering measurement devices will yield results highly correlated to atmospheric aerosol mass concentrations, especially over short time periods” (Waggoner et al. 1981; Chow et al. 2002).

*Wang, Xiaoliang; Chancellor, George; Evenstad, James; Farnsworth, James E.; Rase, Anthony; Olson, Gregory M.; Sreenath, A vula and Agarwal, Jugal K.(2009) 'A Novel Optical Instrument for Estimating Size Segregated Aerosol Mass Concentration in Real Time', Aerosol Science and Technology, 43: 9, 939-950, First published on: 01 September 2009 (iFirst) To link to this Article: DOI: 10.1080/02786820903045141
URL: <http://dx.doi.org/10.1080/02786820903045141>”*

Response:

Refer to the response provided to EPA’s comment under Appendix B-Control Documents, Air Monitoring Plan Text.

Plan Guidelines

1. *The existing Air Monitoring Plan proposed 99% UTLs as background threshold value action levels. However, the statisticians that developed ProUCL 4.0 recommend the use of a 95% UPL as an estimate of the Background Threshold Value. Therefore, the 95% UPL must be used in future.*

Response:

Refer to the response provided to EPA’s comment under Appendix B-Control Documents, Air Monitoring Plan Text.

2. *95% UPLs may be developed as background threshold value action levels for the upcoming real-time particulate and total particulates (NIOSH 500) data sets. A 95% UPL may also be developed for the hexavalent chromium data set, but this 95% UPL will serve instead as a baseline. Three-day tum-around Cr(VI) monitoring will be required during intrusive activities at the off-site baseline locations in addition to perimeter locations, and the results will be continuously compared to baseline and each other.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

3. *Each pre-construction data set must be statistically tested for distribution and the presence of outliers.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

4. *Statistical correlation must be tested between the DustTrak™ DRX 8534 data and the total particulate (NIOSH 500) data.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

5. *Statistical correlation must be tested between the Cr(VI) data and both real-time and total particulate data sets.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

6. *The distribution of the previously collected DustTrak™ DRX 8534 data must also be compared to the DustTrak™ DRX 8534 data to be collected to determine if the data sets can be combined.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

7. *The DustTrak™ DRX 8534 duplicate performance must be evaluated.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

8. *Since the laboratory(s) cannot provide certification of the individual total air volumes used for each filter, field certification of the individual air volumes per filter and all volume calibrations should be provided instead.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

The Pre-Construction Air Monitoring Hexavalent Chromium Analytical Quality Assurance Report (AQAR) for Harbor Point Baltimore, Maryland, prepared by Environmental Resource Management

1. *Section 2.3 Technique, of OSHA Method ID-215 page 7 reads, "Submit at least one blank sample with each set of samples, making sure that it is from the same lot as the filters used for sampling. Handle the blank sampler in the same manner as the other samples except draw no air through it." Section 8.0 Sample Collection Preservation, Shipment and Storage, Subsection 8.1 page 8 of the Standard Operating Procedures (SOP) reads, "All samples should be submitted with at least one media blank PVC filter cassette." The laboratory's SOP reads, "The MB is used to determine if the method analyte or other interferences are present in the laboratory environment, reagents, or apparatus." However, blanks appear to have been sporadically submitted and analyzed. A method blank should have been analyzed with each analytical batch of samples each day of analysis.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

2. *Section 2.0 Hexavalent Chromium Data page 14 of the Analytical Quality Assurance Report reads, "Any aspects of the data that are not qualified should be considered quantitatively and qualitatively valid as reported, based on the criteria evaluated." One criterion for qualifying data is contamination found in blanks, blanks were inconsistently analyzed throughout the sample and analysis process.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

3. *Section 9.0 Calibration page 8 first sentence of the SOP recommends calibrating daily the very next sentence states a calibration curve may also be prepared "quarterly" and daily." Section 9. 7.1 page 10 reads, "A new calibration curve is prepared and analyzed at least once per quarter (90 days). The working*

calibration curve then can be used for the 90 days following the preparation as long as the continuing calibration check standards results are acceptable." The instrument must be calibrated each day it is to be used for sample analysis as stated on page 15 of method OSHA ID-215 version 2.

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

4. *While page 14 of the hexavalent chromium method used by the laboratory (OSHA ID-215 version 2) clearly states heat plating and welding samples at 100-130°C for 30 minutes and hexavalent chromium containing paint samples at the same temperature for 90 minutes, Section 10 Procedure Subsection 10.3.5 page 11 of the laboratory's SOP Reads, "Swirl tubes gently until a white precipitate occurs and digest on the hot block for 1 hour for welding/plating operations and 90 minutes for painting operations."*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

5. *The holding time for samples collected on PVC filters from welding operations is eight days and six days for chrome plating operations. If samples are chemically stabilized immediately upon arrival (within 24 hours), the holding time is increased to 14 days. However, several samples were analyzed at least one day outside the maximum 8 day holding time for welding operation samples. And there was no indication the samples had been stabilized. According to the sample data summary package (See samples submitted 511/2013 EMSL Order# 011301787), the samples were prepped on the day they were analyzed. Extracted samples are stable for 24 hours only. When samples are not stabilized immediately or within 24 hours of collection, the iron that is often present in the sample reduces the Chrome 6 to Chrome 3 thus yielding a low recovery and in some cases a false negative. Throughout many observations by the reviewer, collected samples were not received by the laboratory until three days after collection.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

6. *Section 4.0 Definitions, Subsection 4.5 IPC/ICV -Initial Performance Check/Initial Calibration Verification page 3 of the SOP mentions analyzing an IPC after calibration and every ten samples, but not at the end of the sample*

sequence. The only way to determine if the calibration held throughout the entire sample run is to analyze an IPC after calibration, after every ten samples, and at the end of the sample batch.

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

7. *Section 9.0 Calibration Subsection 9.7 Calibration Curve Analysis requirements page 9, of the SOP, reads, "An average calibration factor may be used for this method. In this case, the % RSD of the calibration factors for the 5 standards must be < or equal to 20% to assume linearity so that the average calibration factor (CF or RF) can be used in place of a calibration curve." If the calibration curve is not linear using the concentration range of calibration standards, the source of the problem should be identified and corrected before a new calibration curve is built that meets the linear calibration curve requirement.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

8. *Page one of the AQAR reads, "Results for the hexavalent chromium analysis have been validated or qualified according to general guidance provided in the "USEPA Region III Innovative Approaches to Data Validation, June 1995, Level IM1" and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review" (January 2010)." Section 2;0 Hexavalent Chromium Data page 14 also references the use of USEPA Region III Modifications. National Functional Guidelines is now the standard used throughout Region III for all Data Validation.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

9. *Section 4.0 Definitions, Subsection 4.11 MDL- Method Detection Limit or Minimum Reporting MRL Verification page 4 of the SOP neglects to mention the MDL study should be carried out over at least three days using seven replicates.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

10. *Refrigeration of filters at 2-6°C is mentioned in Section 8.0 Sample Collection, Preservation, Shipment and Storage Subsections 8.2 and 8.3 page 8 of the SOP. However, nowhere in the method is refrigeration of filters mentioned.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

11. *Attachment 1 Methodology Summary and Method References page A-1 reads, "EMSL Analytical SOP WC-058, Revision 2, and April 2010." Standard Operating Procedures (SOP) should be updated annually.*

Response:

Refer to the response provided to EPA's comment under Appendix B-Control Documents, Air Monitoring Plan Text.

Head Maintenance System and Transfer Station Construction Contingency Plan

1. *General Comment- Include a critical path schedule with this plan which clearly shows overlap with any intrusive activities. A schedule of this type will assist the agencies in scheduling oversight personnel.*

Response:

A Critical Path Method (CPM) schedule for the project that specifically identifies the tasks that are intrusive to the MMC is presented in Appendix D of the DDP. The schedule shows the tasks, duration, and overlap of simultaneous tasks. A separate figure showing the sections described in the CPM schedule is also provided in the appendix for reference purposes.

2. *Section 3.0- The path forward and intent of the items in the first paragraph is not clear. Will the ERM recommendation be modified in the field? What steps are being taken to reduce the "significant risk" posed by the water main routed through Electrical/Mechanical Room?*

Response:

The first paragraph in new Section 4.0 of the Contingency Plan (formerly Section 3.0) identifies the potential occurrences that could result from exposure to dust and vibration related to construction. Any Contractor requests for modifications to ERM's recommendations will require a written request and approval from ERM and from MDE. The Contractor

shall shut off and properly prepare all water and gas utilities prior to construction.

3. *General Comment- There are multiple references to the TS Operator, the Developers Field Representative and the Developer's Construction Contractor through this plan. Provide more detail on these points of contact as was done in Section 3.0 of the SPRP.*

Response:

Personnel clarifications have been included in the new Section 2.0 of the Contingency Plan. References to the TS Operator have been replaced with reference to the Resident Site Manager.

4. *General Comment- Any damages, repairs, direct conflicts, etc. shall be documented in field logs and clearly articulated in the Honeywell quarterly progress reports.*

Response:

The Contingency Plan has been modified, accordingly. Refer to the Section 4.0 of the Contingency Plan (formerly Section 3.0).

Health and Safety Plan

1. *General Comment - EPA acknowledges receipt of the Health and Safety Plan and recognizes this plan as a necessary component of the DDP. EPA has no review comments on this document since worker protection issues are deferred to OSHA. Please note that it is the responsibility of anyone conducting work on the former Allied Baltimore Works site to maintain compliance with health and safety laws.*

Response:

Acknowledged.

Material Handling and Management Plan

1. *Section 2.0 1st Bullet- Imported fill shall comply with MDE VCP clean fill criteria. Please provide a reference to Appendix A of the plan.*

Response:

Acknowledged. See Section 2.0 for the revision in the Material Handling and Management Plan (MHMP).

2. *Section 3.3 - EPA and MDE shall be provided written advance notice (2 weeks minimum) prior to initiating the Exelon Tower moment slab excavation.*

Response:

Acknowledged. See Section 3.3 for the revision in the MHMP.

3. *Section 3.4- This section should document the specifics of air monitoring or refer to appropriate sections of the Air Monitoring plan. What air monitoring steps will be taken should a temporary storage area be utilized. For example, will air monitoring be conducted 24/7 while the temporary storage is being used?*

Response:

Acknowledged. See Section 3.4 for the revision in the MHMP. Temporary storage area air monitoring will be conducted in accordance with the Air Monitoring Plan (Appendix B of the revised DDP).

4. *Section 4.5- 1st paragraph page 10- revise" comply with State and Federal "to comply with State, Federal and Local. "*

Response:

Acknowledged. See Section 4.5 for the revisions in the MHMP.

5. *Section 5.2- This section appears to be in conflict with Section 4.5. Will this water be profiled as RCRA characteristic hazardous waste D007, as stated in Section 4.5.*

Response:

Acknowledged. See Section 4.5 of the MHMP for the revisions.

6. *Section 5.4 :_The contractor may encounter a relatively short notice for the onset on a 25-year storm. When and where will the two "modutanks" be constructed?*

Response:

Acknowledged. See Section 5.4 for the revisions in the MHMP.

Spill Prevention and Response Plan

1. *General Comment- Provide a table listing all applicable Federal, State and/or Local -permits.*

Response:

The applicable permits and approvals required for the project are provided in Section 3.0 of the Spill Prevention and Response Plan (SPRP).

2. *Section 4.0- MHMP should be spelled out the first time used in the text and included in the List of Acronyms page ii.*

Response:

The document has been modified, accordingly. Refer to the List of Acronyms and Section 4.0 for the revisions in the SPRP.

3. *Section 6.3 -Define the acronym EC and include in the table in section 3.0.*

Response:

The Emergency Coordinator (EC) has been added to the List of Acronyms; it is also defined in Section 6.1 of the SPRP. A reference for Section 6.1 has been added to Section 3.0 of the SPRP.

4. *Section 6.4- What is the basis for 1000 U.S gallons of oil in a single discharge or 42 U.S. gallons discharging twice in a 12 month period. Include the citation for this criteria.*

Response:

The citation, which is 40CFR 112.4, has been included. Refer to Section 6.4 for the revision in the SPRP.

Storm Water Pollution Prevention Plan

1. *Section 1.1 - Include a copy of the permit referenced in this section as an attachment to the plan.*

Response:

Reference to the Facility maintaining a storm water discharge permit under the SW-02 was made in error. It has since been confirmed that no discharge permit is maintained for the site in its current configuration. The need for a General Discharge Permit for Storm Water Associated with Construction Activities will be required for implementation of the construction project. As of the date of the SWPPP, the permit application had been submitted but the permit had not been issued. A copy of the permit will be provided to EPA upon issuance.

2. *Section 3.2 - Last paragraph. The text here implies to the reader that contact and noncontact water will be mixed. Please revise.*

Response:

Acknowledged. Contact and non-contact water will not be commingled. See Section-3.2 for the revision in the SPRP.

3. *Section 4.2.3 - Will multiple excavations be open simultaneously. Will these excavation be left over night when significant precipitation may occur?*

Response:

Yes, multiple excavations will be opened simultaneously. Excavations will be covered with geotextile fabric overnight. Completed excavations will be covered with geotextile fabric and a 6-inch thickness of clean cover soil will be placed across the excavation footprint in preparation for pile driving. See Section 4.2.3 for the revision in the SPRP.

Engineering Evaluation Report

1. *EE Memo 1 - Compressibility Characteristics - Given the organic nature of the clay layer, it would be helpful to have included the laboratory data used to establish the various geotechnical parameters for each layer used in the settlement estimates. Also, since the organic clay layer was previously consolidated via strip drains/surcharge loads, what effect do these measures have on the selected parameters and settlement calculations?*

Figures 1 & 3 have Area 3 in orange erroneously labeled as 4 on the drawing.

Response:

Test data used for settlement analysis provided in Memo 1 is provided in the August 22, 2013 Geotechnical Report, and is appended to the final DDP. The effect of the surcharge load was captured in laboratory tests performed on samples taken from borings within the surcharge areas, which have decreased water content and compressibility. Settlement estimates provided in Memo 1 utilized post-surcharge compressibility parameters.

2. *EE Memo 3- Sketch 1 appears to have not shown relocated SSP4 at the end of the New East Valley discharge line.*

Response:

SSP4 has been labeled in revised EE Memo 3.

3. *EE Memo 4- Calc. Sheet 2/3 for the Inboard side appears incorrect as the inboard-most face of the sheets will intersect the inboard limit of the cutoff wall 15 inches from the cutoff wall centerline, thus 3 inches, not 6 inches, should be used in the calculations.*

Response:

Agreed: Revised calculations are provided in revised EE Memo 4. The correction does not result in a material change to the performance estimate.

4. *EE Memo 7- Has there been an evaluation made that for the track cranes anticipated to be used at the site typically-available timber crane mats can provide bearing pressures which will not exceed the 2 ksf stress limit at the synthetic layers?*

Response:

MRCE has performed a computation of bearing pressures resulting from the large track crane used to install load test piles in March 2013. The calculated bearing stress at the level of the synthetic layers was well below 2 ksf because of the track area and stress distribution property of the MMC cover soil.

5. *EE Memo 9- Design of Structural System- Given the critical nature of the various MMC and HMS components, suggest adding statements as to the static and seismic loads to which the structure has been designed.*

Response:

The Dock Street platform will be supported on pipe piles and the sheet pile barrier. The platform foundations were designed to support the concrete platform, soil fill, various HMS components, and traffic live load. Lateral load testing demonstrated high lateral stiffness of the concrete-filled pipe piles. Computations indicate the platform foundations will resist IBC seismic lateral loads. The memo has been revised to describe the design static and seismic loads.

Drawings

1. *DDP C2.00: The Limit of Disturbance does not appear to encompass the loop road, stockpile and Modu-tank areas given on other drawings.*

Response:

These areas do not qualify as disturbance per MDE regulations for Erosion & Sediment Control. The limit of work line has been modified to envelope these areas.

2. *DDP C5.20:*

- a. *The Limit of Disturbance does not appear to encompass the loop road, stockpile and Modu-tank areas given on other drawings.*

Response:

These areas do not qualify as disturbance per MDE regulations for Erosion & Sediment Control. The limit of work line has been modified to envelope these areas.

- b. *SDMHs H and I do not appear labeled on the drawing.*

Response:

Labels have been added to Drawing C5.20.

3. *DDP C8.00: The Limit of Disturbance does not appear to encompass the loop road given on other drawings.*

Response:

These areas do not qualify as disturbance per MDE regulations for Erosion & Sediment Control. The limit of work line has been modified to envelope these areas.

4. *DDP Fl.01:*

- a. *General Notes- The location(s) of the bench marks used for survey control should be provided.*

Response:

The requirement to provide the locations of the benchmarks on a plan drawing is included in note 2, under the Surveyors paragraph found in drawing DDP F1.01.

- b. *Materials, Note 8- Flowable fill does not appear to have been discussed in the narrative or shown on the drawings. Where is it envisioned to be used?*

Response:

Flowable fill has been included in the materials section on the drawing to allow its use as a substitute for soil backfill, at contractor option, where cost savings can be realized.

- c. *Submittals, Pile Driving Contractor, Note 1 -Include requirement to demonstrate crane/matting will not exceed 2 ksf allowable stress on synthetic layers.*

Response:

The note has been modified. Refer to revised drawing F1.01.

5. *DDP F1.10: Add a note stating location where boring logs can be found, particularly those with blow counts.*

Response:

Referenced documents are listed in the August 22, 2013 Geotechnical Report. Drawing F1.10 has been revised to define the referenced documents.

6. *DDP F1.12: Add a note stating strip drains were used under the pre-load and their approximate spacing.*

Response:

The note has been added. Refer to Revised Drawing DDP F1.12.

7. *DDP F1.13: Add note stating where cross section/detail of MSE wall can be found.*

Response:

The note has been added . Refer to Revised Drawing DDP F1.13.

8. *DDP F1.15: Note 2 is unclear as to whether or not plates are used to cover open pipe piles prior to placing cover soil on an interim basis.*

Response:

The notes on this drawing have been revised. Note 2 has been revised to provide clarification. The note regarding the plates has been deleted. Refer to the revised Drawing. This detail /sequence has been revised to place concrete fill before piles are temporarily covered by soil. See sequence shown on drawings F1.31.

9. *DDP F1.22: Detail 5, Note 2 is unclear as to what piles are to receive the joint filler.*

Response:

Note has been revised to provide clarity. Refer to Revised Drawing DDP F1.22. Joint filler is provided for the foundation piles that are installed and then fall within the bridge slab alignment.

10. *DDP F1.24:*

- a. *Detail 4 has triangular areas on each side of the trapezoidal-shaped stone drain in which it will be difficult to properly compact the granular fill. Consider widening excavation to have a broader base for the granular fill on each side of the stone drain.*

Response:

Detail 4 has been revised. Refer to Revised Drawing DDP F1.24.

- b. *Detail 5 depicts a small slot of undimensioned height under the retaining wall, with the difficult placement of gravel above the geosynthetics in the slot. Consider a more practical revision.*

Response:

The detail has been revised in Drawing DDP F1.24 to show the dimension as 6 inches. The detail has been exaggerated to show the various synthetic layers and is therefore distorted. There is sufficient space to fill the opening with gravel as shown on the detail.

11. *DDP F1.30:*

- a. *Detail 1, Note 6 indicates folding back the 60 mil. Geomembrane. This may be difficult due to its stiffness; consider an alternative treatment.*

Response:

To clarify, the fold diversion detail is a temporary condition. The fold detail should be feasible along long side slopes; corners and other small radius bends will require welding for closure. A welding option would be allowed. The permanent isolation dam is a weld detail on fresh exposed geomembrane outboard of the fold detail.

- b. Detail 5 depicts placing granular fill next to the pile cap in a triangular shape, in which proper compaction will be difficult to achieve; consider widening the top of the granular fill.*

Response:

Detail 5 has been revised. Refer to Revised Drawing DDP F1.30.

- 12. *DDP F1.31: Detail 4 indicates the cover soil around the CR-6 material is to be placed in the triangular area where proper compaction may not possible; consider an alternative use of all CR-6 material.*

Response:

Detail 4 has been revised to eliminate the CR-6. The "Cover Soil" indicated has been clarified as "Select Granular Fill". The base of the backfill area shown and the minimums necessary for construction of the MMC penetration provides sufficient area allow for proper compactive effort to be applied, refer to revised Drawing DDP F1.31.

- 13. *DDP F1.32:*
 - a. Section A has a haunch on the bottom left side of the bridge slab, a detail which has been previously shown; please clarify.*

Response:

A detail has been added to Drawing DDP F1.54. The bridge slab was thickened to close a local gap with the adjacent protective slab at this location. Typical pipe penetration detail and sections have been moved to this drawing.

- b. Sections A and B do not define the amount of bedding beneath and on each side of the storm drain; please dimension these.*

Response:

Note has been added to Drawing DDP F1.32 to require 6" minimum thickness. Refer Revised Drawing DDP F1.32.

14. *DDP F1.40/41: It is understood the two tower crane pad locations have not been finalized, but is it the intent to place the pads on building piles or their own piles? If the latter, suggest depicting an assumed pattern consistent with the pad outline given on other sheets.*

Response:

Potential tower crane pad locations shown are shown on Drawing DDP F1.15. The tower cranes will be supported on independent pile foundations separate from the building piles. Tower crane piles and pile caps will be left in place; their construction and cap interface will be identical to building piles. Crane Loads will determine pile pattern. Crane to be used in construction has not yet been determined. The typical pile cap detail (as shown on Drawing DDP F1.50) for the appropriate number of piles will be used.

If the final crane pad location ends up over the existing HMS, the pad will be designed to bridge over the HMS and the pad support piles will be located so that they maintain a minimum distance of 3 feet from the HMS.

15. *DDP F1.42: Northings and eastings are missing on Partial Plan from some intersection points of the pile-supported slab west of the proposed Central Avenue Bridge.*

Response:

Coordinates have been added. Refer to Revised Drawing DDP F1.42.

16. *DDP F1.43: On Partial Plan 2, cross section B-B is taken though the protective slab and not the pile-supported platform as shown on the cross section; please correct.*

Response:

Location of section location is provided on revised Drawing DDP F1.43.

17. *DDP F1.52: Typical Pipe Penetration Detail does not have a dimension of the distance out laterally from the pipe; consider using 1' for consistency.*

Response:

This detail and sections have been moved to drawing DDP-D1.32.

MDE/SOLID WASTE PROGRAM COMMENTS AND RELATED RESPONSES

I. Comments Concerning the DDP.

A. Requirements for Additional Air Monitoring.

1. *We have no comments on the worker protection aspects of the plan for air monitoring and note that this is an area of oversight by the Maryland Occupational Safety and Health Administration (MOSH). Air monitoring on the interior of the site, e.g., in the vicinity of pile-driving activities, may be accomplished in accordance with protocols acceptable to MOSH.*

Response:

Acknowledged.

2. *We appreciate the efforts made to perform background monitoring for particulates and hexavalent chromium ("Cr+6"). However, the monitoring performed indicated the possible presence of some Cr+6 in the ambient air; but also exhibited detection of some Cr+6 in some of the blanks, and other quality assurance issues were identified by the United States Environmental Protection Agency (EPA) and MDE's Air and Radiation Management Administration. The Department's issues are described in paragraph I.C below. This made it impossible for us to determine the suitability of the proposed monitoring methods and action levels (see additional comments concerning the air monitoring data in the section containing comments on the Air Monitoring Plan, below).*

Therefore, we request that additional sampling using the modified California Air Resources Board method CARB-039 be performed immediately, in accordance with the following requirements:

Response:

A new Air Monitoring Plan has been prepared. As required by EPA/MDE, the preparation of a QAPP and SAP for pre-construction baseline and construction monitoring will be prepared in accordance with the new Air Monitoring Plan, and will be submitted under separate cover. Construction will not commence until the agencies have approved the Air Monitoring Plan, including the QAPP and SAP.

- a. *The additional monitoring should be for parallel monitoring using Dustrak DRX8534 for particulates, along with laboratory analysis of particulates for confirmation, and the CARB-039 method at 3 sites satisfactory to MDE and EPA. Please note and address MDE's and EPA's comments concerning*

particulate monitoring protocols. EPA will provide technical guidance concerning an acceptable air monitoring program.

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- b. The placement of the monitoring equipment must be in accordance with USEPA guidance for air monitoring, including distance from structures and other obstructions that could adversely impact the validity of the collected data, to the extent possible given the urban setting. The Department's Air and Radiation Management Administration can review proposed monitoring point locations with your consultants in the field if requested.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- c. Use of particulate size analysis need not be performed.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- d. Raw data should be submitted to EPA and MDE as soon as it is available. A report containing the validated data, and providing an interpretation of the data, must also be submitted following completion of the initial data collection period*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- f. Validation of the data must be performed to the satisfaction of EPA and MDE.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

3. *The air monitoring plan should utilize the 95% Upper Prediction Limits (UPLs) particulate value, not the 99% UTL, identified during the background monitoring period already established as the particulate monitoring action trigger standard for the perimeter monitoring points.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

4. *The air monitoring plan must specifically allow for modifications of the particulate monitoring standard as required by MDE and EPA based on the results of the expanded background monitoring, other monitoring data that may be acquired, and/or the ongoing monitoring program that is subsequently approved. Based on review of the data, the plan must include provisions allowing the agencies to require amendments to the operational procedures, monitoring protocols, and action levels, or to shut the site activities down when monitoring data indicates that this is necessary to protect the public health. Please amend the plan to allow for these requirements.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

5. *Provisions for appropriate notifications of nearby neighbors in the event of air monitoring action level criteria exceedances or other weather conditions that result in a cessation of construction activities due to potential dust concentrations, notably the Living Classrooms organization, must be drafted and included in the air monitoring response plans.*

Response:

The air monitoring alarm level for dust mitigation and possible Stop Work action (trigger level) will be set below any specific action levels. In this manner, dust mitigation measures can be properly deployed at the trigger level and not when an action level is exceeded (Daily air monitoring readings from the air monitors will be posted on the Developer's web site www.harborpointbaltimore.com). In all cases, the Developer's Field Representative will keep MDE's Field Representative apprised in a "real time" manner regarding the results of air monitoring. In the event that air monitoring dictates the need to cease construction activities, (trigger level reached) the Developer's Field Representative will immediately notify MDE's Field Representative of such an action. MDE's Field Representative will then relay the information to EPA's and MDE's Project

Coordinators as deemed appropriate by the agency's field representative. In the event that an action level is reached, The Developer's Field Representative will notify MDE's Field Representative. MDE will then determine whether or not a specific notification should be provided to nearby neighbors. In the event of a true emergency, MDE would notify Baltimore City's Emergency Response Team through the 911 emergency response system. The Developer has met with the Baltimore City Emergency Response Team and MDE's Emergency Response Division (ERD) and will provide them with copies of the Air Monitoring Plan and Health & Safety Plan for the site once approved.

A new Air Monitoring Plan has been prepared. As required by EPA/MDE, the preparation of a QAPP and SAP for pre-construction baseline and construction monitoring will be prepared in accordance with the new Air Monitoring Plan, and will be submitted under separate cover. Construction will not commence until the agencies have approved the Air Monitoring Plan, including the QAPP and SAP.

B. Comments Concerning the DDP Text.

1. *Page 20, Section 4.2 – Schedule – The schedule provided is inadequately detailed. Please provide a specification of all work activities and projects, with a detailed timeline of each subproject. Normally such schedules have been provided to MDE in a spreadsheet form, and must have been prepared by the developer or its contractors.*

Response:

A Critical Path Method (CPM) schedule for the project that specifically identifies the tasks that are intrusive to the MMC is provided in Appendix D of the DDP. The schedule shows the tasks, duration, and overlap of simultaneous tasks. A separate figure showing the sections described in the CPM schedule is also provided in the appendix for reference purposes.

2. *Page 42, Section 6.3.2 – Hydraulic head maintenance system (HMS) design changes – Please describe how the piezometers and vaults be operated during times when power is cut and/or height alterations are made.*

Response:

This comment has been address under Section 6.3.3 of the revised DDP.

- C. Comments Concerning Appendix B, Section 1, Air Monitoring Plan, Area 1, Phase 1 Development. A review of the on- and off-site air monitoring that was performed and described in Sections 2 through 5 of the Air***

Monitoring Plan indicated that there are some operational and analytical issues with the collection of the particulate and hexavalent chromium data. These issues must be addressed through the performance of additional monitoring as addressed in comment I.A above, and revision of the Air Monitoring Plan.

1. *The issues concerning the particulate monitoring data are:*
 - a. *The location of the monitor at the Baltimore Aquarium appears to be too close to two obstructing walls that impede the unobstructed flow of air around the sampler.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- b. *As part of the size segregation study the NIOSH 500 sampler was equipped with a stream separator that diverted flow in two streams, one through a TSP inlet and another through a PM2.5 inlet. In some samples the mass associated with the PM2.5 size fraction was larger than that associated with TSP. This is clearly in error and does not support the conclusion that the measured ambient hexavalent chromium is associated only with the PM 2.5 size fraction.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- c. *Part of the pre-construction monitoring included size segregation of particles into TSP, PM10, PM4, PM2.5 and PM1. The reported concentrations for these different size bins were all very similar. This is unexpected and is not consistent with contemporary monitoring results obtained in Baltimore by MDEs monitoring network. There is no discussion or explanation of these results.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- d. *The correlation between hexavalent chromium and total suspended particles (TSP) in the ambient air during the sampling period was very poor. The same comment applies to the correlation between hexavalent chromium and*

PM 2.5. However, it is noted that any airborne release of chromium from the subject site due to penetrations of the cap and associated construction activities is likely to be in the form of particulates. Therefore, until a reliable basis for an alternative conclusion is available, any use of particulates as a trigger for controlling the release of chromium from the site should be based on the presumption that all of the particulates above the ambient levels may contain chromium. Consequently, the levels established for taking actions to curtail particulate releases must be predicated on the ambient particulate concentrations.

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- e. While EPA third-party QA review guidance was followed for validating the hexavalent chromium laboratory results, apparently, no standards or criteria were used to validate the collecting and handling of the particulate matter samples. Appropriate data quality objectives should have been established prior to the study and adhered to in order to assure the quality of the particulate field sampling.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- f. There was no documentation that collocated monitors were part of the pre-construction air monitoring. Collocated monitors are needed to evaluate the bias and precision of the measurements. These evaluations are critical to understanding the degree of uncertainty in the measurements and their usefulness in relation to the monitoring objectives.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- g. No pre-approved Quality Assurance Project Plan for the PCAM study was provided.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

2. *The issues concerning the hexavalent chromium data are:*
- a. *Field and media blanks were deployed in a sporadic manner and were not associated or analyzed with every set of samples as specified in the analytical method.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- b. *Reported hexavalent chromium concentrations, both onsite and offsite, ranged from <0.6 ng/m³ to 23 ng/m³. Onsite maximums range from 4.3 ng/m³ to 8.1 ng/m³. Offsite maximums range from 9.5 ng/m³ to 23 ng/m³. The 23ng/m³ event appears to be an outlier, although there no was no reported investigation into this result. If this single event were discounted, the adjusted overall range would be <0.6 ng/m³ to 13 ng/m³ (adjusted onsite range would remain the same and adjusted offsite range would be from <0.6 ng/m³ to 13 ng/m³). On 38 out of 40 days of onsite hexavalent chromium sampling, at least one site had a concentration of >1 ng/m³. On 26 out of 28 days of offsite hexavalent chromium sampling, at least one site had a concentration of >1 ng/m³. These results appear markedly high when compared against the National Air Toxics Trend (NATTS) site results. The NATTS average urban hexavalent chromium concentration from years 2003-2010 was 0.043 ng/m³ (5,327 measurements). The single highest concentration was 2.97 ng/m³ and only 4 measurements greater than 1 ng/m³ were recorded during that period. The NATTS program uses the CARB 039 method for hexavalent chromium sampling and analysis.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- b. *A third party QA review of the hexavalent chromium analytical results, based on EPA Region III Level IM1 procedures, indicated that positive biases associated with laboratory blanks and media blanks affected approximately 95 samples. There were approximately 300 hexavalent chromium samples and so it appears that almost one third of the samples were biased high. An additional 22 samples were indicated as biased low due to surpassing holding time limits. There is no mention of the magnitude of these biases and no explanation is provided as to how the quality findings of the above mentioned report may have affected the interpretation of the results of the pre-construction monitoring. Was this considered important?*

If not, why? What are the procedures for moving forward when laboratory blanks are so high? Would it be possible to rerun these samples?

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- c. Similarly, there was no explanation of the obvious outliers found in the data and how they might have changed the monitoring results. No statistical summary of the lab control samples and the lab control sample duplicates were provided, further complicating interpretive data analysis. For all of the aforementioned reasons this data is considered to be unreliable.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

D. *Comments Concerning Appendix B, Section 2, Hydraulic Head Maintenance System (HMS) and transfer station (TS) Contingency Plan*

1. *Page 1, Section 1.0, Introduction, 3rd paragraph – Please specify how long it will take to obtain replacement equipment, install it, and return the system to operation.*

Response:

There are two equipment lists detailed in Section 7.0 (formerly Section 6.0) of the Contingency Plan: the first contains those with longer lead times and higher likelihood of the need for troubleshooting and the Contractor is required to obtain those components pre-construction; the second list contains equipment that is readily available and can be obtained through one of the vetted sources within Section 8.0 (formerly Section 7.0 of the Contingency Plan. All equipment can be obtained and installed within 24 hrs. Text providing more detail to the required pre-construction equipment, anticipated lead and downtimes of the system has been added to Section 1.0.

2. *Page 2, Section 2.0, General System Operation Description, 2nd paragraph – in the 4th line the terms “inbound” and “outbound” are used – please clarify whether what is meant is “inboard” and “outboard” when referring to piezometers inside and outside of the slurry wall containment.*

Response:

The “inbound” and “outbound” has been corrected to “inboard” and “outboard” consistent with and as defined in other DDP submittals.

2. *Page 4, Section 3.0, 2nd paragraph – a general statement is made that in the event of water level spikes the TS operator must adjust the system to compensate. Please specify exactly how this will be done, and whether contingency methods been tested. If the HMS system is damaged, what is the expected maximum downtime that the system would not be operational? Please specify how the groundwater gradient be maintained within the requirements set by the Consent Decree and the Covenant Not to Sue.*

Response:

The pile driving test identified in the 2nd paragraph of Section 4.0 (formerly Section 3.0) was the test to determine impacts to the TS/HMS operations. This referenced section is to document the anticipated impacts of pile driving on groundwater levels in proximity to the piezometers.

Additional text has been added to paragraph to reinforce required compliance with the Consent Decree and Covenant Not to Sue. All requirements to adjust the TS/HMS pump operating levels have been removed considering that groundwater levels are anticipated to rise and will only cause brief periods where groundwater will be over-pumped. The anticipated downtime (i.e., no more than 24 hours) is discussed in Section 4.0 (formerly Section 3.0) of the revised Contingency Plan.

3. *Page 5, Section 4.0 – Level I Contingency Plan -*
 - a. *The temporary “field house office” is described as being located at various points during the project. Please specify these locations on an appropriate plan sheet. Why can’t one location be identified and used?*

Response:

The “temporary field office” is detailed on Drawing DDP EN1.01. That drawing has been revised to clarify the location of the “temporary field office” as part of the “Construction Trailer Compound”.

- b. *Please ensure that the temporary Ethernet system is tested and found to be operational prior to start of construction.*

Response:

Additional testing requirements have been added to Section 5.0 (formerly Section 4.0) to address this comment.

- c. *Have systems of the same type been operated under conditions expected to prevail during the project?*

Response:

Yes. Similar wireless systems have been widely used for the control of various systems during the anticipated construction activities. The design of the alternate controls system has been devised to prepare the system and minimize system downtime.

- d. *If during the project the two control computers, BAW 1 and 2, conflict, how will it be determined which if either is accurate? Have equipment manufacturers been queried regarding the potential impacts of the project on the equipment?*

Response:

The computers BAW-1 and BAW-2 are tied together as redundant servers. As long as a healthy network connection exists between the two, they will display the same information. In other words, there can be no conflicting data between the two BAWs, only a loss of data in the event that a network component goes down.

ERM performed a TS/HMS survey to identify sensitive equipment. ERM has developed the Contingency Plan based on the identified sensitive equipment. Refer to the response to MDE General Comment 31c.

4. *Page 6, Section 4.0 – Level I Contingency Plan -*

- a. *Please ensure that the dust control system in the electrical/mechanical room is tested prior to project start.*

Response:

The document has been modified, accordingly. Refer to the Section to Section 5.0 (formerly Section 4.0) for the revisions.

- b. *Please describe how the head maintenance system (HMS) will be operated while the air receiver is being relocated.*

Response:

The document has been modified, accordingly. Refer to the Section 5.0 (formerly Section 4.0) for the revisions.

5. *Page 8, Section 5.0 – Level II Contingency Plan –*
- a. *First bullet – in the expected event of an interruption of service of the head maintenance system (HMS) LAN lines, how long will the system be out of service before wireless Ethernet systems are installed and become operational? Will this type of equipment be adversely impacted by construction activities such as pile driving?*

Response:

The document has been modified, accordingly. Refer to the Section 6.0 (formerly Section 5.0) for the revisions. The wireless system should not be adversely impacted by anticipated construction activities. It must be understood that these are contingency measures and that the existing hardline control connections will be utilized to the extent possible.

- b. *Second bullet – In view of the expectation that service will be interrupted at each HMS vault, would it be preferable to install the wireless Ethernet networks prior to construction and operate the system using that method?*

Response:

No. It must be understood that these are contingency measures and that the existing hardline control connections will be utilized to the extent possible. Considering that the wireless network scenarios will be tested prior to construction they can be placed and up and running with minimal system downtime. Refer to the Section 6.0 (formerly Section 5.0).

6. *Page 10, Section 6.0 – Parts Sourcing –*
- a. *How long will it take to order, obtain, set up, test, and return the system to full operation?*

Response:

There are two equipment lists detailed in Section 7.0 (formerly Section 6.0) of the Contingency Plan: the first contains those with longer lead times and higher likelihood of failure and the Contractor is required to obtain those components preconstruction; the second list contains equipment that is readily available and can be obtained through one of the vetted

sources within Section 8.0 (formerly Section 7.0 of the Contingency Plan). All equipment can be obtained and installed within 24 hrs. Text providing more detail to the required pre-construction equipment, anticipated lead and downtimes of the system has been added to Section 1.0.

- b. *How likely is system malfunction during the project? Shouldn't spare equipment be maintained onsite since HMS system operation interruptions are expected?*

Response:

The spare equipment with longer lead times or high likelihood of the need for troubleshooting are required to be maintained onsite during construction as detailed in Section 1.0 and Section 7.0 (formerly Section 6.0) of the Contingency Plan. Readily available components that do not have a high likelihood for needing troubleshooting will be obtained on an as needed basis as also detailed in Section 7.0 (formerly Section 6.0) of the Contingency Plan.

E. Comments Concerning Appendix B, Section 3, Health and Safety Plan

1. *Page 8, Section 6.3 - Soil Conditions – The statement is made that COPR was not landfilled at the site, although the 1985 IT report and 1986 NUS report indicate otherwise. Please specify how much COPR was actually disposed onsite, and the locations where was it disposed, to the extent this is known.*

Response:

As a general practice, COPR was not land filled at the site; however, the 1985 IT report and 1986 NUS report indicated the potential presence of COPR dispersed in soils at the site. Soil containing elevated concentrations of chromium can be expected to be encountered below the layers of the multimedia cap. See Section 6.3 for revision.

In both the 1985 IT report and the 1986 NUS report there is a discussion that Allied plant personnel, who were present during the operation of the original chromium works (which was dismantled in 1953 after the construction of the new chromium works plant in 1948) reported that small amounts of COPR were used as fill in small portions of the site. However, both reports state that the vast majority of COPR was disposed of at offsite locations during the operation of both plants. Section 4.3.1 of the IT report mentions the distribution of fill across the site including COPR. This section notes that a fine grained fill, which imparted a green

color similar to a drilling fluid, was possibly COPR. However, there was no verification provided in the report that the material was COPR.

Based on these verbal reports and some documentation and field notes, personnel from IT and NUS indicated that some COPR along with other non-specified fill was used in the area of the 'J' platform. The 'J' platform is located in the south central section of Area 1.

Also, based on verbal reports by Allied personnel to IT and NUS personnel, it was noted that scows were loaded with COPR from the original chromium works. These scows were docked in what was then the Back Basin. The methods used in that era, physically shoveling the material or loading it with an overhead crane, allowed some COPR material to be spilled around the sides of the scow and into the basin. This material was periodically dredged to maintain water access to the area. It was also reported that dredging of the Back Basin occurred frequently during these operations.

The discussion of COPR placement in both reports is not very specific and there was insufficient documentation at the time to determine the volume which was placed on the site and the extent to which any remain after Back Basin dredging. Therefore, the volume of COPR remaining in the former Back Basin location is not known.

In general chromium-impacted soils are present consistently below the multi-media cap present in Area 1. Monitoring and other health and safety requirements related activities will be implemented for when intrusive work occurs into and below the multi-media cap.

2. *Page 17, Section 11.1 – Equipment Decontamination – Please specify where containers of decontamination-generated solid and liquid wastes will be stored.*

Response:

Acknowledged. See Section 11.1, page 17 revision.

3. *Page 19, Section 12.0 – Action Levels - The reports cited above also indicated that COPR may have been disposed in the area underlying the building to be constructed. Particular attention to dust suppression activities will be required in this area to prevent the potential for the release of elevated quantities of chromium contaminated dust/particulate matter. Please include a discussion of this need in any appropriate standard operating procedures and instructions to contractors, and insure that supervisory and field management staff are aware of this need. If COPR should be encountered, not only should great care be taken in the management of the material, but the opportunity for training of field staff to*

visually identify the material should be taken to the extent that this will not contribute to a release (e.g., when weather conditions allow).

Response:

Acknowledged. See Section 4.0, and Section 12, for revisions.

4. *Page 13, Section 12.0 - Action Levels -*

- a. *2nd paragraph - Please identify the locations where the particulate air monitoring (PAM) stations are proposed to be located.*

Response:

Acknowledged. See Section 12.0, 2nd paragraph for revision. Also Figure 2 - Air Monitoring Locations has been added to the HASP Table of Contents.

- b. *4th paragraph - All air monitoring data must be provided to MDE immediately upon receipt by the developer. As noted by EPA all data obtained regarding air monitoring should be placed on a website that can be accessed by the public.*

Response:

Acknowledged. See Section 12.0, 4th paragraph for revision.

F. **Comments Concerning Appendix B, Section 4, Material Handling and Management Plan**

1. *Page 4, Section 2.0 - Environmental Requirements: All imported material must meet MDE/LRP specified standards for materials of this type. See the guidance fact sheet on MDE's website at [http://www.mde.state.md.us/programs/Land/MarylandBrownfieldVCP/MDVCPInformation/Documents/www.mde.state.md.us/assets/document/Clean%20Imported%20Fill%20Material\(1\).pdf](http://www.mde.state.md.us/programs/Land/MarylandBrownfieldVCP/MDVCPInformation/Documents/www.mde.state.md.us/assets/document/Clean%20Imported%20Fill%20Material(1).pdf).*

Response:

Acknowledged. See Section 2.0 for revision.

2. *Page 6, Section 3.2 - Erosion and Sediment Controls - 2nd paragraph - MDE's regulations governing Controlled Hazardous Substances (CHS) require that hazardous waste containers of liquid hazardous wastes be provided at all times with secondary containment, and that inspection logs be maintained, among other*

requirements – please consult COMAR 26.13.03.05E, and incorporate these requirements into the plans, operating protocols, and specifications.

Response:

Acknowledged. Reference to COMAR 26.13.03.05E and applicable provisions are provided in Section 3.3, Section 4.5, and Sections 5.2 and 5.3.

3. *Page 7, Section 3.3 – Excavation – all containers of hazardous waste solids must also be managed in accordance with the requirements of COMAR 26.13.03.05E and other applicable regulations.*

Response:

Acknowledged. Reference to COMAR 26.13.03.05E and applicable provisions are provided in Section 3.3.

4. *Page 11, Section 5.1, Stormwater – Noncontact – Has a pretreatment permit or other appropriate authorization been obtained from Baltimore City allowing discharges to the City’s sewer system? If so provide a copy of the permit/authorization to MDE; otherwise provide an explanation why no such documents are required.*

Response:

There will be no pretreatment of storm water. There is no permit required for discharging rain water to the Baltimore City storm sewer system. No discharge will be allowed to Baltimore City sanitary sewers. With the exception of total chromium (the Consent Decree supersedes the City’s requirement), the provisions in Baltimore City Article 25 Sewers, Subsection 4 for self-monitoring, and Sewer Discharge Limits published by Baltimore City Pollution Control Section will be followed. The Consent Decree establishes a surface water performance standard of no more than 50 parts per billion (ppb) of total chromium, which is less than the City’s requirement. See Section 5.1 and Section 6.2 for revisions.

5. *Page 11, Section 5.2 – Stormwater, Contact Water – Do not allow standing water in to remain in sumps; rather ensure that all potentially contaminated water is pumped to appropriate containers.*

Response:

Acknowledged. See Section 5.2 for revision.

6. Page 13, Section 5.4 – 25-Year Storm Event

- a. *The 1st paragraph mentions discharging impacted water – no such discharge is permitted without first obtaining a National Pollution Discharge Elimination System (NPDES) permit issued by MDE. Provide a copy of the NPDES permit to the Land Management Administration (LMA)/Solid Waste Program (SWP) prior to construction of the tanks.*

Response:

Acknowledged. See Section 5.4 for revision. To clarify, there is no discharge of impacted contact water.

- b. *If the liquid in the tanks is CHS, no discharge from the site would be permissible without first obtaining a CHS facility permit from MDE.*

Response:

Acknowledged. See Section 5.4 for revision.

- c. *Please include a plan for the management of contaminated snow/ice is generated that might be encountered in open excavations during cold weather. It is noted that capillary draw-up of chromium salts into the uncontaminated working layer within excavations can occur unless there is a capillary break. Please include a plan for informing field management staff of this possibility, and include arrangements to handle any material so contaminated in the material management plan.*

Response:

Acknowledged. See new Section 5.5 for revision associated with snow/ice. Regarding “capillary draw-up of chromium salts”, refer to Response No. 8 below.

- d. *The calculations regarding the storage volumes of the proposed modutanks apparently use the total volume of the tanks. How much freeboard if any is required to safely operate the tanks? What would the usable tank volume be in that case? Would any extra tank(s) be required to provide capacity for the 25 and 100 year storms discussed in the Engineering Evaluation (EE)?*

Response:

See revised Engineering Evaluation Memo #2.

7. *Page 14, section 6.1 – Soil/debris – Cite data to support the contention that no other CHS than chromium would be found below the cap.*

Response:

Historical data will not be relied upon for waste profiling. Instead, waste characterization analyses will be performed per the Subtitle C landfill requirements. See Section 6.1 for revision.

8. *It is noted that capillary draw-up of chromium salts into the uncontaminated working layer within excavations could occur unless there is a capillary break between any contaminated material and the clean soil placed in the excavations. Please include a plan for informing field management staff of this possibility, of identifying it when it occurs (e.g., the appearance of a greenish crust at the surface of the soil, etc.) and include arrangements to handle any material so contaminated in the material management plan.*

Response:

The capillary break is replaced as part of the MMC restoration. See DDP Drawing F1.30, Panel 2, for sequence including placing capillary break and clean cover soil to eliminate the condition described in this comment. Only environmentally trained personnel, familiar with chromium contamination, will enter the excavation zone until the excavation zone has been restored to a clean working environment for general construction workers. See Section 3.3 for revision.

9. *Page 15, section 6.3 – Water – Contact and Groundwater - See comment I.E.7.*

Response:

Acknowledged. See Section 6.3 for revision.

10. *Page 15, section 6.4 – Imported Soil/Aggregates –*

a. Please provide copies of all imported fill material analyses to MDE

Response:

Acknowledged. See Section 6.4 for revision.

b. Please comply with the guidelines established by MDE's Land Restoration Program (LRP) regarding imported fill materials. The applicable standards must be added to the specifications, and provisions made for notifying contractors and materials suppliers.

Response:

Acknowledged. The analytical results from the imported fill will be compared to non-residential soil standards presented in MDE's *Cleanup Standards for Soil and Groundwater, dated June 2008*, to determine whether the fill source is acceptable. Copies of all imported fill analyses will be provided to MDE for review, consultation and approval prior to importing fill. This clarification has been provided in Section 6.4.

G. Comments Concerning Appendix B, Section 5 – Spill Prevention and Response Plan

1. *Page 2, Section 1.1, Background and Purpose – In the event of a spill Honeywell's representative should also be notified at the same time that the developer is notified. Records of all releases must be maintained in the operating log. MDE/SWP must be notified in the event of release(s) of hazardous wastes or hazardous waste-contaminated materials. After hours, the release must be reported to MDE's emergency response line at (866) 633-4686.*

Response:

The document has been modified, accordingly. Refer to the Sections 1.1, 6.0 and 6.3 for the revisions.

2. *Page 2, Section 1.2 – Consistency with Other Plans - The paragraph contains a statement regarding “the intent of maintaining operation of the HMS and Transfer Station with minimal service interruptions”. Please discuss the conditions under which a service interruption might occur, and steps being taken to avoid them. It would be better to implement a plan that would have no service interruptions.*

Response:

Due to the nature and elements of construction, limited service interruptions to the head maintenance system (HMS) are anticipated and considered within the project. These interruptions will be local and will not have significant impact on the overall system. The conditions for which service interruptions may occur and how they will be managed are described in both the comments and responses provided for Comment III.B.25.a, III.B.26.a, and III.B.27.b as well as the drawings referenced in those comments. Reference to the drawings has been added to Section 1.2.

3. *Page 5, Section 4.0 – Liquid Discharge Prevention –*

- a. *As indicated above provide any pretreatment permits obtained from Baltimore City.*

Response:

Refer to the response provided for F.4 above (Material Handling and Management Plan).

- b. *What is the total volume of petroleum materials that would be maintained onsite during the project?*

Response:

The total volume of petroleum stored on site during the project, including the generator day tank and small AST, is anticipated to be between 500 and 750 gallons. The document has been modified, accordingly. Refer to the Section 4.0 for the revision.

4. *Page 9, Section 5.0 – Construction Storage and Operations – The 2nd paragraph proposes to store spilled fuels in the groundwater storage tanks. This proposed action is unacceptable. Do not mix petroleum wastes with CHS/maintain separate storage containers for spilled fuels and other petroleum materials.*

Response:

The document has been modified, accordingly. Refer to the Section 5.0 for the revision.

5. *Page 10, Section 5.1 – Disposal of Recovered Materials - 3rd paragraph – MDE’s Emergency Response Division (ERD) would most likely inform the developer to hire a private contractor to recover spilled materials. (ERD can be reached at 1-866-633-4686). The developer should make prearrangements with an appropriate spill response contractor to manage such events. MDE/ERD must be notified should releases occur/that Division will inform the developer of ERD’s response.*

Response:

The document has been modified, accordingly. Refer to the Sections 5.1 and 6.2 for the revisions.

6. *Page 13, Section 6.3 – Discharge Response Procedures – Last bullet – Presumably the reference to released material not being treated or disposed of refers to offsite management – no treatment or disposal of any waste materials may occur at the site.*

Response:

The document has been modified, accordingly. Refer to the Section 6.3 for the revision.

7. *Page 14, Section 6.3 - Discharge Response Procedures – The last paragraph does not specify where or in what manner spilled materials will be stored. Please provide more information concerning the disposition of these materials.*

Response:

The document has been modified, accordingly. Refer to the Section 6.3 for the revision.

8. *Please contact the Department's Water Management Administration to determine whether a specific or general industrial stormwater discharge permit will be required for the proposed activities. When the required permit is obtained, please provide a copy to the Solid Waste Program.*

Response:

Discussions with Mr. Ed Gertler and Mr. Jesse Salter with MDE, Water Management Administration (WMA) have been conducted. They concurred that an industrial NPDES permit is not required based on the project approach as presented in the drawings and project control plans, as no contaminated water (i.e., contact water) will be discharged at the site. Rather, a General Permit for Stormwater Associated with Construction Activity is required, and when obtained, a copy of the permit will be provided to the Solid Waste Program.

9. *Page 14, Section 6.4 – Written Notifications – Provide copies of any petroleum spill report to the Land Management Administration's Oil Control Program, which can be reached at 410-537-3442. After-hours spills should be reported to MDE's emergency response line at (866) 633-4686.*

Response:

The document has been modified, accordingly. Refer to the Section 6.4 for the revision.

H. Comments Concerning Appendix B, Section 6 – Stormwater Pollution Prevention Plan

1. *Page 6, Section 3.0 – Identification of Potential Pollution Sources – Which acid is being used at the site to clean conveyance piping?*

Response:

Sulfuric Acid (90% solution). See Section 3.0 for revision.

2. *Page 7, Section 3.2 – Loading and Unloading Operations – All hazardous waste storage operations must be performed in compliance with all relevant requirements specified in COMAR 26.13.*

Response:

Acknowledged. All hazardous waste storage operations shall be performed in compliance with all relevant requirements specified in COMAR 26.13. See Section 3.2 for revision.

3. *Page 8, Section 3.2 - Loading and Unloading Operations – Please specify the entity that will be the actual generator of any hazardous wastes generated at the site.*

Response:

Honeywell is the generator of Hazardous Wastes at the site. Refer to Section 3.2 for revision.

4. *Page 9, Section 4.2.1 – Non Contact Water – The paragraph mentions storing noncontact water that may be contaminated in a frac tank that is normally used to store groundwater. If the tank already contains groundwater then the entire volume of material in the tank would be CHS and must be managed appropriately.*

Response:

Acknowledged. Non-contact water will not be commingled with groundwater. See Section 4.2.1 for revision.

5. *Page 10, Section 4.2.2 – Contact Water – As noted above, if contact water is added to a frac tank already containing CHS the entire volume of stored material is CHS, since addition of non-CHS to CHS constitutes impermissible treatment.*

Response:

Acknowledged. Non-contact water will not be stored in a Frac tank designated for contact water. See Section 4.2.2 for revision.

6. *Page 10, Section 4.2.3 – Stormwater Management System –*

- a. *A statement is made that the drainage net is sealed at the edge of the excavation – how will the seal be tested to assure it is tight?*

Response:

The drainage net will be flapped-up the slope of the excavation and anchored at the edge of the excavation to divert storm water from entering into the excavation zone. The drainage net cannot be sealed. See Section 4.2.3 for revision.

- b. *Has the freeboard been accounted for in calculating the tank storage volume? What is the plan should the modutanks contain CHS?*

Response:

See revised EE Memo #2. See Material Handling and Management Plan, Section 5.4 response and revisions.

7. *Page 11, Section 4.2.5 – Spill Prevention and Response Procedures – The first bullet states “assess risk”. The first action in a spill response should be to contain the spill.*

Response:

Acknowledged. See Section 4.2.5 for revision.

8. *Page 12, Section 4.2.7 – Visual Inspections – Provide to MDE a copy of the general discharge permit.*

Response:

Acknowledged. See Section 4.2.7 for revision.

9. *Page 13, Section 4.2.7 - Visual Inspections – The first paragraph mentions that the SWPPP may be revised. This statement must be amended to indicate that no changes to the Plan may be made without prior MDE approval.*

Response:

Acknowledged. See Section 4.2.7 for revision.

10. *Page 13, Section 4.3.1 – Oil/Water Separators – Provide design drawings or specifications and proposed locations of all oil/water separators to be installed.*

Response:

Oil/Water Separators have eliminated from the design. Other best management practices (BMPs) have been incorporated, including a small basin, interceptor, conveyance pipes, sand traps, and filters. Section 4.3.1 has been modified, accordingly. Appendix A has been added with the plumbing drawings for the building that present the BMPs.

11. *Page 14, Section 4.3.3 –Preventative Maintenance –*

- a. *Provide the identity of the party responsible for conducting the specified inspections.*

Response:

Acknowledged. See Section 4.3.3 for revision. Honeywell’s on-site consultant, CH2M Hill, performs inspections and preventative maintenance at this facility. Additionally, CH2M Hill performs operations, maintenance and inspections required by the Consent Decree and the Covenant Not to Sue.

- b. *How will these inspections be integrated with those required by the Consent Decree and the Covenant Not to Sue?*

Response:

See Section 4.3.3 for revision. Honeywell’s on-site consultant, CH2M Hill, performs inspections and preventative maintenance at this facility. Additionally, CH2M Hill performs operations, maintenance and inspections required by the Consent Decree and the Covenant Not to Sue.

- c. *Provide copies of all proposed inspection plans to MDE.*

Response:

Inspection forms are provided as Appendix B in the revised SWPPP.

12. *Page 15, Section 4.3.4 – Good Housekeeping –*

- a. *As there is a potential for spills to occur on unpaved areas, please specify the response plan, which is likely to differ from the cleanup of spills on paved areas.*

Response:

Acknowledged. See Section 4.3.4 for revision.

- b. *What will be done with oil and any sludge or solids collected in the oil/water separators? Please provide proposed procedures for managing these materials.*

Response:

The oil/ water separators have been eliminated from the project design. See Section 4.3.4 for revision. Also, refer to response to comment H.10 above.

13. *Page 16, Section 4.4 - SWPPP Revision - As noted above do not change the SWPPP without prior MDE approval.*

Response:

Acknowledged. See Section 4.4 for revision.

14. *Page 17, Section 5.2 – Training requirements – Please specify the entity responsible for conducting the inspections discussed.*

Response:

Acknowledged. See Section 5.1 for the revision.

15. *Page 18, Section 5.2 - Training requirements – What types of materials other than petroleum products and materials associated with the transfer station would be maintained/used onsite?*

Response:

No other types of materials other than petroleum products and materials associated with the Transfer Station and general housekeeping products are anticipated to be maintained/used onsite. See Section 5.2 for revision.

II. Comments Concerning the Engineering Evaluation (EE).

A. Cover Letter

1. *Part 1, Page 1 – 2nd paragraph –*
- a. *Specify what the term “OCR” means.*

Response:

OCR refers to over consolidation ratio and is an indication of the stress history of compressible soils. The OCR is the ratio of the maximum past effective stress (preconsolidation stress) to the existing effective stress.

- b. *Provide the basis for the claim that 3.8" settlement will not adversely impact the MMC.*

Response:

Settlement in the referenced location on the order of 3.8" does not create a negative slope in the drainage net grade; therefore it will not adversely impact the MMC drainage. The document has been modified, accordingly.

- c. *Will the expected settlement adversely impact the head maintenance system (HMS) and other system components?*

Response:

The document has been modified, accordingly.

The HMS system includes pump wells at vaults, and pressurized fluid mains and electric wiring in conduit between vaults, and piezometers casings / manholes between vaults.

- The vaults are open underground space which unloads the underlying soil and reduces settlement potential.
 - The pressurized mains and electric wiring are flexible features which operate properly with moderate settlement; the conduit housing removes soil friction from the utility wall to allow ground deformation to be accommodated over long lengths which prevents stress concentrations in the utility.
 - Piezometer casings, the piezometer elevation reference, is included in the HON maintenance survey. Settlement at the piezometers is incorporated in the maintenance expectation and system.
2. *Part 2, Page 2 – Stormwater Storage Demand - as noted above the calculated volume assumes filling the tank completely. Freeboard must be provided to allow for volumetric expansion due to temperature change etc., so a larger tank or other provisions for additional storage space must be provided and depicted on the plans.*

Response:

The tanks are structurally designed to support fluid to the top of the liner. The secondary containment system outside of the tanks provides safety factor to collect overtopping. The calculations demonstrate total tank capacity is available to manage the 25-yr design storm; freeboard distribution among Tank 1 and Tank 2 will be managed to prevent spillage. Calculations demonstrate tank capacity is available to manage a 1-day 100-yr storm with freeboard. Memo 2 has been revised for clarity and to define the maximum open area which can be retained in the two 75x75 tanks for 25-yr and 100-yr storms. Storm water containment will be accomplished by managing the open area which requires collection.

3. *Page 4, 1st paragraph – what is the maximum vibration expected, and how much damage to the remedial measures could occur, if any?*

Response:

See Drawing No. F1.01, Section entitled “Vibration Monitoring”, Note 7 for threshold and limiting values for the hydraulic barrier, vault, and transfer station tank pad and mechanical room. Barrier sheeting prior to pile driving for damage control.

- Buried vaults at shallow burial depth have high safety factor against structural damage due to ground vibrations. The HDPE stud liners attached to the outside face of the vaults prevent seepage even with concrete cracking.
- Tank pad structures incorporate “Environmental Concrete” reinforcing steel design guidelines and fiber reinforced concrete to reduce risk of cracking. With tanks empty during pile driving, the tank pad has high safety factor against structural damage and reduced risk of differential settlement.

B. EE Memo 1

1. *Estimated Settlement under Development Fill - Page 6 – Please explain why the “non-detrimental” settlement of the MMC would not be harmful to the hydraulic head maintenance system (HMS) and slurry wall.*

Response:

As long as the drainage net maintains a positive slope, settlement of the MMC is considered “non-detrimental.” All computed settlement maintains a positive drainage net slope, as seen in Figure 4 of EE Memo 1.

The “Valley Drain” design largely removes the risk of settlement and negative slope along Dock St. by moving the low point in the geomembrane south of the bulkhead to areas which have reduced risk of settlement (small increase in overburden, and reduced thickness of compressible materials or in the vicinity of pre-loaded compressible materials).

Negative slope causes water to pond in the drainage net after each storm event. Ponded water may seep downward if holes or penetrations exist in the underlying geomembrane. The volume of water stored in the MMC above the geomembrane will be small, and is readily collected by the HON HMS systems. The design isolates pile penetrations from the drainage net, and adds structural floors and roofs, and streets with storm drains as primary control or storm water. These features reduce the risk of negative slope by reducing recharge to low points.

2. *Figure 1 – Legend – there are two areas marked “4” on the figure. Please rectify this typographical error.*

Response:

The document has been modified, accordingly. Refer to Memo 1 for the revisions.

C. EE Memo 2

1. *Page 2, last full paragraph – a calculation is provided that indicates that ~3/4 acres will be open during construction. Does this mean that the entire area will be open below the MMC/if not what is the maximum area anticipated to be open at any time?*

Response:

The maximum area anticipated to be open at one time is for the shear wall pile cap at approximately 27,000 sf. The Contractor has indicated the pile cap in this area will be constructed in segments to permit equipment access. Membrane repair will be accomplished during pile cap construction to restrict open area. The temporary soil cover and active dust control will prevent dust generation during active pile construction and cap geomembrane restoration. The modu-tank capacity is sufficient for 20,250 sf to be open during 2 days of a 100 year storm event.

2. *Page 3, 3rd paragraph – since the open excavation > 26,777 ft² would generate a liquid volume that exceeds the maximum tank capacity, assure that the maximum open area is less than the area that would exceed the tank capacity, or provide additional storage capacity.*

Response:

Memo 2 has been revised for clarity and to define the maximum open area which can be retained in the two 75x75 tanks for 25-yr and 100-yr storms. Storm water containment will be accomplished by managing the open area which requires collection. A note has been added to Drawing DDP F1.15 setting a maximum of 20,250 sf be open during a 100 year storm event.

3. *Page 3, Discussion – as noted above does the site have a pretreatment permit from Baltimore City/if so provide a copy to MDE.*

Response:

There will be no pretreatment allowed for this project.

4. *Figure 2 – It is noted that the rainfall data provided is the period 1903 – 1951. Please provide more recent rainfall data if it is available. Also the print is barely legible in some places; please provide a clear copy.*

Response:

The document has been modified, accordingly. Refer to Memo 2 for the revisions. Data was obtained from the National Oceanic and Atmospheric Administration Precipitation Frequency Data Server from Atlas 14, Volume 2 from 2006.

5. *Appendix A- Please specify precisely the total number of piles that will be installed as part of this project.*

Response:

1,097 piles will be installed for building and Dock St. platform support. A few additional piles may be required for the tower cranes.

6. *Appendix B – 4th Page – As noted above, the total tank volume is assumed to be available for storage of precipitation. However, freeboard must be provided to allow for expansion.*

Response:

The document has been modified, accordingly. Refer to Memo 2 for the revisions. Freeboard is not included in design as a secondary containment structure allows for rupture of a tank and for overspill during extreme events.

D. EE Memo 3

1. *Page 2, Multimedia Cap – the first paragraph mentions an assumption that site settlement has not altered the slope of the drainage net. An accurate survey should be performed to address this data gap.*

Response:

The MMC surface will be exposed and surveyed during construction. Settlement data from surveys performed by Honeywell for points along Dock Street indicate that cumulative settlement is generally less than 2 inches and is complete under the existing load. Settlement data is provided in Figure 1.

2. *Page 2, Utility Installation – This paragraph mentions that the multi-media cap (MMC) will be lowered to accommodate the 30" stormdrain. A description of the procedures to be used must be provided, and the locations where this will occur be shown in the plans. This may cause a linear low area in the cap which would cause a saturated zone to form under the utility lines. Please analyze the potential for damage to the utility lines and for adverse impact to the cap, and propose a means of addressing any concerns identified (e.g., draining the lower zone thus created).*

Response:

Drawing F1.32 addresses design and location of storm drain, a reference will be added, means and methods will be addressed in approved Work Plans by the Contractor.

E. EE Memo 4

1. *Page 2, Sheet Pile Barrier – the 2nd paragraph mentions that settlement of the SB backfill could occur – what effect will this settlement have on its performance, and how much is the maximum expected settlement? Please provide an estimate and the basis for the estimate calculated.*

Response:

Vibratory settlement will help to re-seal “bridges” or gaps that may have formed since the installation of the SB Backfill. If settlement exceeds 3

inches during installation, replacement SB Backfill will be placed as described in approved Contractor Work Plans.

2. *Page 4 – equation 1 – define the terms used in the equation on this page.*

Response:

The document has been modified, accordingly. Refer to Memo 4 page 4 for the revisions.

3. *Page 5 – Verticality of sheet pile – Please provide a discussion of the likelihood that the slurry trench walls will be penetrated by the sheetpiles, and the effect if any that would have on the hydraulic barrier performance.*

Response:

Anticipated soils at the side walls of the trench at depths of potential penetration are significantly stiffer than the soil within the trench and will meet refusal. Piles meeting refusal shallower than the record bottom of the trench will be rejected. See memo text for revisions and additional discussion.

4. *Swelldseal sheets – 3rd sheet – Please provide documentation of any effect that exposure to water containing the anticipated concentrations of hexavalent chromium (Cr+6) would have on the polyurethane sealant.*

Response:

Communication and literature from the SWELLSEAL manufacturer indicate that exposure to the pH levels in the overburden and the SB Backfill must fall within pH = 3 to 11. Laboratory testing from investigations and during construction indicate that the in-situ pH of the soil used for SB Barrier backfill generally ranges from pH = 6 to 9 with an average pH = 8.5.

F. EE Memo 5

1. *Sketch SK-1 – the print on this sketch is illegible. Please provide a legible copy.*

Response:

Sketch SK-1 has been replaced with the relevant Drawing DDP-F1.44.

G. EE Memo 6

1. *Page 3 –Tow Truck – This memorandum provides a calculation of loading caused by various vehicles on the plaza garage slab during construction. The truck specifications of vehicles that will and will not be allowed to traverse the floor described must be provided to the construction contractor. The means of preventing heavier vehicles from traversing the floor must be specifically identified.*

Response:

Contractor will be provided with the required information on Vehicle Size Limitations.

2. *Page 4 – 1st paragraph – This memorandum provides a calculation of loading caused by various vehicles on the plaza garage slab during construction, and finds that vehicles that impose a load greater than the modeled tow truck should not be allowed to traverse the floor due to the potential for damage to the cap layers, but that the modeled tow truck would not cause “undue harm”. Please specify the harm that this would be caused by both the modeled tow truck and the heavier vehicles so that we can evaluate this risk.*

Response:

The bearing stress on the Drainage Net was analyzed for the most extreme load conditions beneath the Design Truck, Wheel Loader, and Tow Truck. This bearing stress on the MMC synthetic layers should not exceed 2 ksf (See EE Memo No. 7), as any higher stress will compromise the flow of the Drainage Net, causing ponding of water on the geomembrane and potential sink holes.

The Design Truck exceeded the bearing limit with pressures of 2.99ksf in Location 1 and 3.57ksf in Location 2. The Wheel Loader also exceeded the bearing limit with pressures of 2.90ksf in Location 1 and 3.54ksf in Location 2. Only the Tow Truck induced bearing stresses below the limiting value (1.47ksf in Location 1 and 1.82ksf in Location 2), and this or a comparable vehicle should be the largest type of vehicle and maximum allowable load to access the garage.

Height restriction will not allow the transit of heavier vehicles while the garage is operational, and transit restrictions should be enforced during construction.

3. *Sheet 1 – the sketch depicts 5” of concrete and 3” of soil, while the paragraph lists 4” of each. Please identify the conditions actually modeled, and eliminate these discrepancies between the drawing and text.*

Response:

Refer to the first paragraph in calculations for the revisions. Values and conclusions are correct.

H. EE Memo 7

1. *Page 4 – Water and Soil Container Load Spreading – Explain how it will be assured that CHS containers will be positioned in areas that will not subside or will be damaged by containers in any way. Assure that all the hydraulic head maintenance system (HMS) and any other system components will also be protected from subsidence from any cause.*

Response:

Control of access and laydown areas will be addressed by approved Work Plans from the Contractor in accordance with Drawing F1.15, reference to the drawing will be added to the text.

2. *Page 4 – Construction Road Layout – Assure that all vehicle speeds are <15 mph by placing requirement in documents provided to all contractors, etc.*

Response:

The drawing has been revised accordingly. Refer to Revised Drawing.

I. EE Memo 8 -

1. *This memo is out of sequence in the EE.*

Response:

The memoranda will be placed in sequential order.

2. *Page 2 – Install Permanent Exhaust Fan and Louvers – drawing M4.07 is cited but not provided.*

Response:

Drawing M 4.07 is attached to Memo 8. The text in the memo has been updated accordingly.

3. *Pump Size, Sump Pump – what will be the referenced change in the length of the pipe? Insure that the correct value is shown on the plans and specifications.*

Response:

The piping between the new sump and the tanks will be approximately 40 feet shorter than the existing piping between the existing sump and the tanks. Piping reroute plan on DDP EN 1.07 and the EE Memo 8 has been updated accordingly.

J. EE Memo 9

1. *Page 3 – Design of Structural System – 5th paragraph – damage to HMS conduits is mentioned – what type of damage is anticipated and how would such damage be repaired?*

Response:

Vibration may induce settlement of the conduit which should be of no concern to performance of the utility within. Cracking of the conduit casing is of little risk (high strength material type) and of little consequence as they are above the water table and below the membrane.

2. *Page 3 – Last paragraph – Please describe in detail how probing to locate timber tiebacks will be performed. Please ensure that the HMS, MMC, and any other remedial component will not be damaged by the proposed probing.*

Response:

Buried timber tiebacks can be located by various methods such as test pits or probes. Probes will encounter penetration refusal. Timber ties are long, and probes can be performed away from MMS alignment.

III. Comments Concerning “Progress Drawings”.

- A. **The drawings are marked “not for construction” - drawings that will be issued for construction must be provided to MDE, at least those concerning construction from base of subgrade work to the new surface elevation and the first construction level.**

Response:

Acknowledged. The “not for construction” will remain on the redline set of revisions. Upon EPA and MDE acceptance of the redline submittal, this notation will be removed.

B. Specific Comments. (Alphanumeric designations refer to the drawing numbers.)

1. C1.00 – Note 9 indicates that the “Owner” will be provided access to remedial system components. Since the property will be conveyed to Beatty Development, presumably Honeywell will continue to operate and maintain the remedial system; the company must be granted access to all system components without restriction.

Response:

Honeywell will be provided access in perpetuity to the remedial system components pursuant to the Purchase Agreement and accompanying Environmental Agreement, with the Developer.

2. C7.30 – the box in the upper right corner references foundation drawings for cap penetration details. Please provide the identification numbers of the specific drawings referenced.

Response:

This note has been revised. No cap penetrations are proposed for utilities. All utilities will be installed above the existing geomembrane or a reconstructed geomembrane layer.

3. C8.00 –
 - a. In the "Erosion and Sediment Control Sequence of Operations" box, note 3, the contractor is directed to prepare a phasing plan for the foundation excavation that complies with the soil and liquid management plans. A copy of the contractor's plan must be provided to MDE.

Response:

We will modify note 3 to require the Contractor to submit the plan to MDE.

- b. Will the “material laydown area” have an asphalt base?

Response:

Yes. We will add a reference note to this plan pointing the Contractor to the Environmental drawing EN1.01 where it is specified.

4. F1.01 –

- a. *Earthwork, Note 7 – the second sentence states “use membranes to isolate contaminated soil” – does the term “membrane” refer to the multimedia cap (MMC) membrane system?*

Response:

Note 7 has been revised to replace the word “membrane” with “polyethylene plastic” to avoid confusion with the multimedia cap. Refer to Revised Drawing

- b. *Materials, Note 1 – all replacement stone must be at least equivalent in quality to onsite materials currently in use. All imported materials must meet criteria established by MDE/LMA Land Restoration Program (LRP) standards. Please see the guidance fact sheet on MDE’s website at [http://www.mde.state.md.us/programs/Land/MarylandBrownfieldVCP/MDCPIInformation/Documents/www.mde.state.md.us/assets/document/Clean%20Imported%20Fill%20Material\(1\).pdf](http://www.mde.state.md.us/programs/Land/MarylandBrownfieldVCP/MDCPIInformation/Documents/www.mde.state.md.us/assets/document/Clean%20Imported%20Fill%20Material(1).pdf).*

Response:

MRCE has reviewed the guidance fact sheet on MDE’s website and has updated notes to require compliance with the guidelines.

- c. *Optical Survey, Note 3 – Please insure that a survey of the hydraulic barrier occurs after the sheet piles are installed to check for unforeseen damage or conditions.*

Response:

Where sheetpiles are driven into the hydraulic barrier, observation of settlement will be performed and any settlement of backfill will be corrected with addition of fresh Soil Bentonite mixture. Optical survey will be performed in areas where sheet piles are not being driven. See Note 3 under Optical Survey on Drawing F1.01.

- d. *Optical Survey, Note 5 – what do the terms “threshold value” and “limiting value” mean? What would it mean if the “limiting value” were exceeded?*

Response

Threshold Value – the instrumentation value range above which will trigger the evaluation of current construction methodology and if

necessary, implementation of mitigative action to avoid detrimental effects on the surrounding facilities.

Limiting Value – The second and greater instrument reading that stops the construction and necessitates mitigative action to halt settlement or other movement and avoid damage to existing structures and facilities.

5. F1.02 –

- a. *Pile Load testing and Indicator Pile Program – this program sounds similar to that conducted during the spring, and the one proposed to MDE that was commented upon by the Department. Would air monitoring and vibration monitoring be conducted during the tests? Provide plans addressing these matters. Comments made previously by MDE regarding this matter continue to be applicable.*

Response:

Testing and indicator pile program will occur during the production pile driving and will include a vibration and air monitoring program. Notes have been added to the drawing DDP-F1.01.

b. *Sheet Piles –*

- i. *It appears that sheet piles are to be welded in pairs then driven into place. Will pile driving damage the welds and seals? How would welds and seals be tested for tightness once the sheet piles are driven into position?*

Response:

Our experience in similar geologic/engineering conditions indicates sheet pile installation should not damage welds or sealant. Welds are continuous and stronger than steel sheet. Calculations provided in EE memo 4 on hydraulic conductivity account for potential gaps in the sheet pile wall. The welds and seals testing is not feasible. Performance is measured with overall Q to HMS with time.

- ii. *Note 16 – the cited work plan must be provided to MDE prior to extraction of any sheet piles.*

Response:

Will be provided to MDE.

c. *Submittals –*

- i. *There are two notes identified as “6” in the list – provide correct numbering on a revised drawing.*

Response:

The numbering has been corrected. Refer to revised drawing.

- ii. *Provide to MDE the information required of the contractor in notes 1, 4, 5, and the first note 6.*

Response:

Will be provided to MDE.

- iii. *All records and submittals by the contractor regarding the other points in this section and elsewhere in the DDP and related documents must be maintained by the developer for review by MDE.*

Response:

Noted, this will be addressed by QA/QC Plan (under development).

6. *F1.03 - Synthetic layer penetrations and repairs -*

- a. *All replacement materials must be at least equal in quality to the materials originally used to construct the MMC.*

Response:

Materials specified are taken from original construction specifications.

- b. *Note 8 – Demonstration – has the required demonstration been performed? If so provide the test results to MDE immediately. If not when will the tests be performed?*

Response:

The required demonstration will be performed after Contractors are engaged and before implementation.

- c. *Note 12 – Installation – all installation standards and specifications must be at least equivalent to those used by Black & Veatch.*

Response:

Any deviation from original construction specifications has been verified for equivalency.

- d. *Note 13 – to what does the word “holiday” in the next to last line of the paragraph refer? Provide the testing summary discussed to MDE.*

Response:

A “holiday” is an undesirable hole or discontinuity in the protective material.

- e. *Note 14 - provide the submittals specified in the note to MDE.*

Response:

Submittals indicated in Note 14 will be provided when available.

7. *F1.10 – are any of the borings cited still open or were all abandoned?*

Response:

All borings have been decommissioned with tremie grout at completion. Some of the borings indicated were not inspected by MRCE or under MRCE specifications, they may not have been grouted.

8. *F1.13 – the drawing indicates that IP-11S will be abandoned – what was the purpose of this piezometer?*

Response:

IP6S, IP8S and IP11S were installed at the Agencies request to verify that extraction of groundwater from the deep aquifer would control the gradient in the shallower fill zone. The control of the groundwater gradient in the upper fill was documented in the Black and Veatch report.

9. *F1.14 - Specify the exact number of piles that will be driven as part of this project, and how many will penetrate the MMC.*

Response:

1097 Piles will be driven as a part of this project. 1050 Piles will penetrate the MMC. The remainder of the piles are below the Dock St. platform and are wholly below a new geomembrane.

10. F1.16 -

- a. *Note – Stage 1 Demolition Sequence – provide a copy of the hazardous materials assessment performed by the contractor’s consultant.*

Response:

A note has been added to the drawing instructing the contractor to provide this information 3 weeks prior to demolition. The information will be provided to MDE and Honeywell through the appropriate reporting protocols.

- b. *How would the HMS components be protected during partial building demolition, and how will the vaults, tanks and other equipment be accessed during demolition?*

Response:

Tanks and Maintenance Room can be accessed through the entrance on the truck pad. All equipment not stored in the Maintenance Room or Tank room will be moved to a temporary office trailer prior to demolition.

- c. *Please provide a schedule and duration for the demolition of the office side of the building.*

Response:

A Critical Path Method (CPM) schedule for the project indicating tasks, duration and overlap of simultaneous tasks that specifically identifies the tasks of intrusive activity to the MMC has been included in the DDP as Appendix D.

11. F1.20 - *What do the various shadings on the drawing mean? No key was provided.*

Response:

Drawing has been revised to include a legend. Refer to Revised drawing.

12. *F1.21 – Note 20 – where exactly will the “Low Platform” be located – it is unclear on the drawing. Dewatering is mentioned – how will the removed water be managed?*

Response:

MRCE has added a note referring to the EN Series drawings for the Water Management. MRCE has added a note to the drawing calling out the location of the Low Level Platform. Refer to Revised Drawing.

13. *F1.22 – Typical Existing Conditions – Note 2 indicates that the outboard piezometer communication wiring will be relocated – to what location will the wiring be relocated, and how long will this process take? Provide answers to the same questions regarding the reverse process. Will HMS monitoring be impacted by the relocation projects?*

Response:

Piezometer communication wiring will not be relocated with the exception of JB-11 as shown on EN1.01. That relocation is due to a proposed curb conflict. The outboard piezometer wiring will be disconnected at each paired piezometer location during sheet pile driving. The communication downtime at any individual HMS component modification is expected to be no longer than one work day.

14. *F1.23 –*

- a. Detail 2 – Please specify where exactly the stormwater pipe at location A is located – it is unclear from the drawing what is meant by this detail note.*

Response:

The document has been modified. Refer to revised drawing detail.

- b. Detail 4 – note 7 – why is there no need to reconnect the piles to the geomembrane? Leaving the cap geomembrane unsealed to any penetrations through the cap is not acceptable.*

Response:

The existing MMC is abandoned in place below a new MMC. The new MMC is constructed above the pile supported Dock St. platform. The new MMC utilizes the existing capillary break gravel below the abandoned geomembrane.

15. F1.24 –

a. *Detail 1 – there is an arrow without a text designation; to what is it referring?*

Response:

The arrow is referring to “60 mil. LLDPE Geomembrane” The detail has been revised. Refer Revised Drawing.

b. *Detail 4 – how long will the valley drains be open, and what is the purpose of the “advantage drain”?*

Response:

The Valley Drain is a permanent condition. “Advan Edge” is a name-brand HDPE box pipe. The call out has been revised to correctly identify the Advan Edge pipe. Refer to Revised Drawing.

c. *Detail 5 – what does “supper drainage slot” mean?*

Response:

This Typographic error and has been corrected to read “scupper drainage slot”. Scuppers are drainage openings at the base of bulkheads to prevent water retention. The retaining wall is designed to allow the drainage slot. Infiltration on top of the new MMC geomembrane will pass through the slot to be collected by the Valley Drain. Refer to Revised Drawing.

d. *Detail 6 – how can the geomembrane be stretched to cover the longer distance proposed once the Dock Street Platform is installed? If additional cap material is to be added please describe the procedure and show where this will occur.*

Response:

Membranes will not be subjected to tension or otherwise stretched. Additional membrane is bonded to existing membrane, without tension. See F1.23 Detail 5.

16. F1.30 –

- a. *Detail 5 – there appears to be a gap between the floor slab and the cover soil – what will fill the gap, if anything?*

Response:

The Floor Slab is supported on the pile caps. In some locations there will be a formed void between the floor slab and the top of cover soil.

- b. *MMC Repair at Location C – on the sloped area on the right side of the drawing, both the geomembrane dam and cover geotextile arrows appear to point to the wrong layer. Please correct this drawing.*

Response:

The drawing has been corrected. Refer to Revised Drawing.

17. F1.31 –

- a. *Details 2 and 3 – will a sump pump be maintained in the excavated area? If not how would accumulated precipitation and any other accumulated liquids be removed?*

Response:

Excavations will be shaped to have a low point for pump placement. Pumps will be available on site and mobilized and operated for storm infiltration and when needed to remove collected water Refer to Drawing callout for the revisions.

- b. *MMC Repair drawing – the phrase “height strength epoxy” is used where “high strength epoxy” is apparently intended. Please correct this error.*

Response:

The error has been corrected. Refer Revised Drawing.

18. F1.41 –

- a. *Note 2 – refers to drawing F1.07, which is not included in the submittal/provide this drawing.*

Response:

The note has been corrected on the drawing. Refer Revised Drawing.

- b. *Several piles in the drawing are referred to as "PDA" piles. What does that term mean?*

Response:

PDA refers to Pile Driving Analyzer. This is defined on Drawing F1.02. A legend has been added to drawing F1.41 for clarity.

19. *F1.53 – Will the various cut-off sheet piles be installed after the hydraulic barrier sheet piles?*

Response:

Hydraulic barrier sheet pile will be placed first to satisfy HON lease criteria. A Note stating placement sequence has been added to Drawing F1.02.

20. *F1.54- What is the actual extent and location of the proposed "MSE" temporary wall at the plaza garage?*

Response:

See Drawing F1.40 for MSE wall extents. A note has been added to the detail on drawing DDP F1.54 for clarity. The wall provides grade change at the Plaza Garage perimeter.

21. *EN1.01-*

- a. *What volume of soil is expected to be stored on the designated stockpile area?*

Response:

The Cover Soil Stockpile Areas is designed to store approximately 1,600 cubic yards of clean soil, assuming a uniform, low-profile height of five feet. The Cover Soil stockpile will be covered and air monitoring will be performed at an adjacent downwind location. No material removed from below the cover soil layer will be stockpiled.

- b. *Construction Notes – Note 6 – there may be times when the Transfer Station/Head Maintenance System operator will require unanticipated and unscheduled access to system components – how will such matters be handled? Would construction activities be halted if necessary?*

Response:

Additional text has been added to Construction Notes - Note 6 - requiring the Contractor to halt construction activities as necessary for the Operator to enter the work zone.

22. EN1.02 –

- a. *Note Aa3. - when will BAW-1 be relocated? Where exactly will BAW-2 be located in the transfer station? Why can't the location be determined now?*

Response:

The BAWs will be relocated prior to construction. The location of BAW-1 will be in the temporary field office detailed on DDP EN1.01. BAW-2 will be relocated to the Electrical/Mechanical Room that will be placed under positive pressure. This information has been added to the DDP EN1.02 Note Aa3.

- b. *Note Aa11. – the note mentions “regular” inspections of the PLC gasket seal – what does “regular” mean, i.e., how often will inspections be performed?*

Response:

DDP EN1.02 Note Aa11 has been revised to indicate that the PLC gasket seal will be inspected every other week.

- c. *Note Ab1. – will the proposed procedures be tested prior to any actual real-time need?*

Response:

Yes. Additional testing requirements for the wireless connections have been added to this note.

- d. *Note Ab4. - How long will it take to obtain the required equipment? How long would the affected subsystems be inoperative? What impact would outages have on performance of required monitoring?*

Response:

The lead times and required equipment have been addressed under MDE Comment D.7. The remote I/Os will be maintained on site. Additional testing requirements have been included as part of EN1.02 Note Ab4. It is anticipated that any system impacts will be isolated (e.g. one piezometer) and be limited to a single workday.

23. *EN1.03 – Notes for Detail 11, Note 3 – if the flexworks doublewall primary outlet is positioned over the vault manway, how will the interior of the vault be accessed?*

Response:

There are four manways/openings in Vault 1 (three with 24" x 24" size and one 30" x 36" in size). Flexworks double wall primarily outlet will be positioned over one 24" x 24" vault opening. Primarily access to vault's interior will be from 30" x 36" manway. Note 3 for Detail 1 in Drawing EN 1.03 has been updated accordingly.

24. *EN1.04 –*

- a. *Notes for Detail No. 1, Note 4 – any hazardous wastes accumulated in any sump must be removed to an appropriate storage device immediately upon generation, or else the sumps must be registered with MDE as hazardous waste tanks.*

Response:

The sump is not intended for the storage of hazardous materials. In accordance with the design (Detail No.1), clean materials will be placed in the excavation/sump to cover impacted or waste materials. Water that accumulates in the sump will be pumped and conveyed to a designated on-site tank. If there is any potential that accumulated water in the sump has come into contact with impacted materials, i.e., contact water, the water will be removed and stored in the designated tank upon observation. The contact water will be tested and disposed off-site as described in the Material Handling and Management Plan.

- b. *Controls Detail Scenario 3 – in the lower bold font box, the last word is "temporary" – it appears that more text is required to complete the sentence.*

Response:

This text was a typo and has been removed from DDP EN1.04 Controls Detail Scenario 3.

25. EN1.05 –

- a. *Section Z-Z' – Note 3 indicates that the 480 volt power conduits must be temporarily disconnected. How will power be provided to system components during the disconnection? What impact will the power loss have on HMS operation?*

Response:

Note 3 of Section Z-Z' has been updated to address power supply during temporarily disconnection.

Minimal downtime of few hours (not expected to exceed more than 24 hours) of the operation of the vault and associated remedial system components is expected during the power loss and proposed modification. The downtime will be coordinated with Honeywell. Further, the downtime will be localized. In other words only the vault that is being modified (and associated piezometer set, IP/OP-1 for vault 1) will be nonoperational. The remaining HMS system will be in operation. As such, the proposed vault modification will not have a significant impact on the overall HMS operation.

- b. *Section Z-Z' – vault walls were coated with stud-liner and connected to the geomembrane. Would the proposed cutting of the vault walls damage the coating or adversely impact the connection to the geomembrane?*

Response:

Note 5 of Section Z-Z' on Drawing EN 1.05 has been updated to address this comment.

- c. *Section Z-Z' – will vaults that are being reduced in height have sufficient room afterward for workers performing various jobs inside the vaults? What would be the final inside vertical dimension in the vaults being reduced in height?*

Response:

To achieve the required height reduction of 2.38 feet, the height of the riser was minimized and the retention of the walls height was maximized to the extent possible to maintain as much head room in the vault as

possible. The proposed modification reduces the height of the riser by 6.5 inch (reduce to 10 inch) to maintain a design requirement of a minimum of 8 inch of cover over the vault ceiling. Then, the vault wall will be reduced by 1.83 feet to achieve the required height reduction of 2.38 feet.

Current inside vertical dimension of the vault is 7 feet. After proposed modification the inside vault height will be 5.17 feet.

d. *Vault 2 Access Port Plan – what will be the vertical distance separating the Wills Street Ramp from the vault V2 covers?*

Response:

Vertical separation between the Wills Street Ramp and V2 covers will be approximately 13 feet. Note 7 of Section Z-Z' and Note 1 of Vault 2 Access Port Elevation detail in Drawing EN 1.05 have been updated accordingly.

26. EN1.06 –

a. *How will piezometers and other affected remedial system components be operated while height extensions or reductions are being performed?*

Response:

Minimal downtime of few hours (not expected to exceed more than 24 hours) of the piezometer and associated remedial system components is expected during the proposed modifications. The downtime will be coordinated with Honeywell. Further, the downtime will be localized. In other words, only a specific set of piezometers that is being modified (and the corresponding remedial system components such as associated extraction wells) will be nonoperational, while the remaining HMS system will be operational. As such, the piezometers height adjustment will not have a significant impact on the overall HMS operation.

b. *What will be the vertical distances separating the Wills Street Ramp from the piezometer access ports?*

Response:

Note 4 of Piezometer Height Adjustment Detail in Drawing EN 1.06 has been updated to provide the vertical separation between Will Street Ramp and surface finishing of piezometers.

27. EN1.06.01 –

- a. *Surface Soil Monitoring Point (SSMP)-4 and SSMP-4A Detail – the proposed design must be at least equivalent to the design of existing SSMP-4 structure.*

Response:

The proposed design of SSMP-4 and SSMP-4A mimics the design of existing SSMP-4 structure.

- b. *Section A-A' - JB11 Junction Box Relocation – this design must also be equivalent to the existing one. How long will the junction box be out of service before the new structure is operative, and what impact would the outage have on HMS function?*

Response:

The design of new Junction Box 11 (JB11) is similar to the design of existing JB11.

The JB11 is expected to be out of service for few hours (not expected to exceed more than 24 hours) during the proposed modifications. The downtime will be coordinated with Honeywell. Further, the downtime will be localized. In other words, only JB11 that is being modified (and the associated remedial system components such as piezometers OP-11/IP-11 and extraction wells in Vault 11) will be nonoperational while the remaining HMS system will be operational. As such, the junction box relocation will not have a significant impact on the overall HMS operation.

- c. *Typical Sump Detail for Temporary Decon/Stockpile Pad – where will collected contaminated water be transferred? No transfer pipeline is shown on the drawing.*

Response:

Note 2 of Stockpile and Decontamination Pad Detail on Drawing EN 1.06.01 has been updated to address this comment.

28. EN1.07 –

- a. *Tank Area Piping Reroute – Note 4 indicates that the rerouted contaminated groundwater transfer line will pass through occupied space. Is there any way to avoid this design feature? Only properly trained personnel*

should not be placed in areas where they potentially could be exposed to hazardous wastes.

Response:

The team explored this design and other alternatives in detail. Another option considered was a sub-slab conveyance pipe, which presents many challenges regarding access, configuration of the Tank Room and new structure, selective demolition, conflicts with piles, and other issues. Consequently, the current design presented in EN1.07 includes a portion of the re-routed groundwater transfer pipe located overhead across the hallway as the comment suggests. The transfer pipe is used to transfer groundwater from the tanks inside the tank room to the trucks in the loading dock area. It is important to re-iterate that the transfer operation is intermittent and that the transfer pipe will convey groundwater only during unloading operations. In addition, the transfer operation will be performed manually. The transfer operation will be closely monitored during the transfer process. The proposed new route of the transfer pipe will be double contained. A leak detection system will be installed and the pipe is designed to slope at 1/8" per foot towards the loading dock so that liquids are not stored in the pipe segment over the hallway.

The space that the pipe crosses will be occupied by Honeywell staff and will be included in the inspection program during loading activities. Notification information will be provided on the pipe in the event that the pipe has been damaged or a leak is observed. The notification will include, or be similar to, the following:

"Any damage to or discharge from this pipe must be immediately reported to Honeywell at 443-271-6694."

b. Temporary Pipe Support Notes – Note 5. – This note indicates that the contractor is responsible for damage to the items to be relocated. What plans does the developer have in place to address repairs of any items? How would the HMS function if the transfer pipes and/other items are damaged?

Response:

The temporary relocation of pipes is being performed as a cautionary measure during pile driving and demolition around the tank room. The vibration during pile driving may impact the cinder block wall, and as a consequence to that the groundwater and other pipes that are hanging on the wall may also be impacted. Thus, as a cautionary measure the pipes on the wall will be transferred to a metal rack that will be founded on concrete floor inside tank room. This step will avoid potential damages, if

any, to the HMS components that are hanging on the wall. The cinder block wall will not be demolished during the construction. Once the demolition and pile driving activities are completed in the surrounding area, the pipes will be relocated back to the cinder block wall at the preconstruction location. During the relocation activity, the HMS operation will have to be shut down. However, the downtime is not expected to be more than 48 hours. If the pipes are damaged or break during relocation the damaged portion will be repaired or replaced immediately.

29. EN1.09 -- Section A-A -

- a. *Please identify the volume of material to be removed from the proposed excavations. Specify the exact dimensions of the excavated areas.*

Response:

There are 65 locations for the pipe support brackets to support the conveyance lines at 8-foot intervals from MJ-1 to Vault 11. Cover soil will be removed and sloped back to access the MMC synthetic layers. Each excavation below the MMC synthetic layers will be approximately 4 feet by 4 feet. The conveyance lines are approximately 3 feet below the MMC synthetic layers. As such, each excavation will yield less than 2 cubic yards of what will be considered to be contaminated sand. The total estimated volume of contaminated sand from this work is 130 cubic yards.

- b. *Please describe how the excavated area will be kept open during installation of the steel channels and threaded steel rods.*

Response:

A small, utility trench box (nominally 4' W x 4' L x 5' H) will be placed in each excavation below the MMC synthetic layers to perform the work.

- c. *Please describe how the steel channel will be installed below the pipelines without damage to either.*

Response:

The HMS system, including the conveyance piping, was installed on a sand bed and backfilled with clean sand. Sand bedding will be removed by hand excavation to expose the conveyance lines at each pipe support bracket. A minimal area of the sand bedding under the conveyance pipes will be disturbed to slide the steel channel under the lowest elevation pipe. After attaching the threaded steel rods, the disturbed area will be

backfilled to the proposed subgrade with clean sand in 6-inch layers and compacted by hand tamping

- d. *The proposed excavation is to be performed by hand. Hand excavation may not be possible in all cases due to obstacles (buried concrete etc.). Please describe how the hand excavation will be performed, and what method(s) would be used if hand-excavation proves to be unworkable.*

Response:

The existing conditions are understood to be conducive to hand excavation for this work. The HMS system, including the conveyance piping, was installed on a sand bed and backfilled with clean sand. There are no obstructions anticipated that will interfere with the proposed work.

30. *During the September 25, 2013 technical review meeting, statements were made indicating that the Dock Street platform being considered might not be installed. Has that matter been decided, and if so what action is planned?*

Response:

No, an alternate solution to the Dock Street Platform is still being considered based on pricing and contractor input. If an alternate solution is decided upon, an addendum will be submitted.

31. *General Comments:*

- a. *What is the total number of piles that will be driven during the project, and how many of those would be inside the hydraulic barrier? What is the maximum number of pile drivers will be active at any time?*

Response:

The total number of piles that will be driven as a part of the is project are 1097. 1050 will be inside the hydraulic barrier. We understand two pile rigs and crews will be mobilized for the foundation pipe piles and a separate rig and crew will be mobilized for sheet pile.

- b. *How long will the pile driving phase of the project last, and what are the planned work hours during that part of the project?*

Response:

A Critical Path Method (CPM) schedule for the project that specifically identifies the tasks that are intrusive to the MMC is provided in Appendix D of the DDP. The schedule shows the tasks, duration, and overlap of simultaneous tasks. Refer to the response to comment IV.C for anticipated work hours; however, similar to large projects of this nature, the daily work hours may vary as the project proceeds based on the progress of the activities.

- c. *Regarding HMS components, have equipment manufacturers been contacted to determine whether the system can withstand the effect of pile-driving and other intrusive operations at the site?*

Response:

ERM performed a TS/HMS survey to identify sensitive equipment. ERM has developed the Contingency Plan based on the identified sensitive equipment. The equipment is more sensitive to dust than vibrations. The majority of the sensitive equipment is located in the Electrical/Mechanical Room of the TS. It is anticipated that the brittle PVC pipe are susceptible to vibrations. The Contingency Plan was developed around the survey to protect the most sensitive systems and mitigate potential threats (i.e. shutting off the water main, natural gas lines, etc.) and minimize downtimes. The Contingency Plan procedures are configured to address component operations that may be affected by construction, such that the necessary spare parts are available and personnel will be on hand to address all operational issues during construction.

- d. *How often is the HMS instrumentation calibrated during current operations? Has consideration been given to increasing the calibration frequency during the pile-driving phase to assure that the instruments are operating properly?*

Response:

The document has been modified, accordingly. Refer to the Potential Impacts: Section 4.0 (formerly Section 3.0) of the Contingency Plan.

32. *Comments regarding the Proposed Air Monitoring Program:*

- a. *As noted in Comment I.A relating to the DDP above, the Proposed Air Monitoring Program must be significantly revised. However, the following are specific issues that were determined with respect to the existing text that also must be addressed during the revision:*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

b. *Section 4.0, Meteorological Considerations*

- i. *page 7 – The last two paragraphs appear to contradict each other, and the accompanying outputs from ProUCL were not provided. Provide the ProUCL outputs and utilize the appropriate statistical test to make all comparisons.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- ii. *2.0 PCAM Study results - the supporting tables and ProUCL outputs presented in Appendix B do not appear to support the tables listed throughout the text. Clarify and provide the appropriate outputs.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- b. *Section 6.0 Site Specific Background and Action Levels to be used during intrusive activities, 3.1.2 surface water monitoring, page 3-3: Use of 99% UTLs for the real-time total airborne particulate concentration action level and the site-specific hexavalent chromium background threshold value concentration are not appropriate. Revise the proposal and utilize the 95% Upper Prediction Limits (UPLs) rather than the 99% UTLs.*

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

IV. Issues Relating to the Requirements of the October 24, 2012 MDE Letter Concerning the Conceptual Design Plan (CDP).

- A. **MDE noted that an air monitoring station should be placed adjacent to contaminated soil piles - assure that this requirement is met in accordance with MOSH requirements.**

Response:

Refer to the response provided to MDE's comment I.A.2. under Requirements for Additional Air Monitoring.

- B. **The note re Section 7.2.10 noted that the effects on the MMC of releases of any liquids must be stated - this requirement was not addressed in the DDP.**

Response:

Provisions for the proper handling of fuels and other controlled liquids are provided in the project-specific Spill Prevention and Response Plan (SPRP). Activities will be confined to the Limit of Disturbance, where the design shows the area of MMC to be restored. See DDP Section 7.2.9 for the revision and the revised SPRP.

- C. **Provide the hours during the day when construction activities will be performed. These hours should be posted on a webpage that can be accessed by the public.**

Response:

Construction hours are projected to be 7:00 a.m. to 4:00 p.m., Monday through Friday. Construction hours may change based on progress of the project; the hours of operation will be posted on the Project website.

- D. **MDE noted that it is expected that weekly construction meetings will be held, and that MDE must be invited to those meetings. Assure that this requirement is met.**

Response:

Acknowledged.