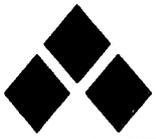


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U S NAVY RESPONSE TO ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
COMMENTS ON SITE INVESTIGATION REPORT BUILDNG 222 AREA OF CONCERN 222
(AOC 222) NS GREAT LAKES IL
5/23/2013
BLOOM COMPANIES, LLC



May 23, 2013

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Re: Site Investigation Report for Building 222 (AOC 222) - 0971255048
Naval Station Great Lakes, Great Lakes, Illinois

Dear Mr. Simes:

The Illinois Environmental Protection Agency (Illinois EPA or Agency) provided comments on the *Site Investigation Report, Building 222, Naval Station Great Lakes, Great Lakes, Illinois*. Responses to the comments are provided below.

IEPA Comment 1) Section 2.5-A justification for a Class II Groundwater determination is made here. However, although groundwater samples were collected for analysis, there was no site-specific determination made for hydraulic conductivity of the aquifer. Instead, reference is made to a regional document which identifies the potential for contamination of shallow aquifers based on generic area-wide data. This is unacceptable. A groundwater classification must be based upon site-specific data. While groundwater at this site may actually be Class II, the justification provided does not bare that out.

No hydraulic conductivity data is currently available for AOC 222. A Corrective Action Completion Report was completed for Building 229, which is adjacent to AOC 222, however no hydraulic conductivity data is available for Building 229 or other sites in the immediate vicinity of AOC 222. Installation and testing of one or more permanent monitor wells will be required for determination of site specific hydraulic conductivity if justification for a Class II Groundwater determination is desired.

IEPA Comment 2) Section 3.4 - Under Metals, it states, "The SRO for inorganic metals was determined from 35 IAC Section 742 Appendix B Table C." That is the table which lists pH specific soil remediation objectives for inorganics and ionizing organics for the soil component of the groundwater ingestion route. That table addresses only one exposure route. As was correctly stated in the first paragraph of this section, the soil remediation objectives "were determined by using the lowest or most conservative values from within all the listed exposure pathways... while taking into account the background values." Therefore, the aforementioned statement is inaccurate as is the table which represents the data in that manner (Table 3). There are other exceedances which have not been identified here or in the table which need to be discussed.

The Section 3.4 text and Table 3 have been revised to indicate samples that exceed standards for each of the applicable exposure routes. The text has been revised as follows:

Metals - Seven RCRA metals, including arsenic, barium, cadmium, chromium, lead, mercury and silver were reported in site soils. Soil remediation objectives for the exposure routes (i.e., soil

ingestion exposure route, inhalation exposure route, and soil component of the groundwater ingestion exposure route) were used to compare the concentrations of soil contaminants of concern (Table 3 and Figure 5). The SRO for inorganic metals for the soil component of the groundwater ingestion route was determined from 35 IAC Section 742 Appendix B Table C.

Arsenic - One soil sample, B222E, exceeded SROs for arsenic for soil ingestion and for Class I of the pH Specific Soil Component of the Groundwater Ingestion Exposure Route Value.

Lead - One soil sample, B222E, exceeded SROs for lead for soil ingestion and for Class I of the pH Specific Soil Component of the Groundwater Ingestion Exposure Route Value (Figure 6).

Mercury – Three samples, B222A, B222B, and B222C, exceeded SROs for mercury for the soil inhalation standard for construction workers.

None of the other metals included in the analysis exceeded SROs for the applicable exposure pathways.

IEPA Comment 3) Section 4.1 - The last sentence references Appendix A. The specified information is actually provided in Appendix E.

This change will be made in the next revision of the document.

IEPA Comment 4) Section 5.0 - The discussion provided here is incomplete as there are additional exceedances that have not been properly identified.

All known exceedances have been identified in the revised document and discussion in this section has been modified to address the exceedances as follows:

Analytical results from the soil samples collected in 2013 indicated that:

- None of the reported VOCs were present at concentrations in excess of SROs.
- Benzo(a)pyrene was reported at concentrations in excess of the SRO for ingestion for residential properties at B222E and at B222G
- One soil sample, B222E, exceeded SROs for arsenic for soil ingestion and for Class I of the pH Specific Soil Component of the Groundwater Ingestion Exposure Route Value,
- One soil sample, B222E, exceeded SROs for lead for soil ingestion and for Class I of the pH Specific Soil Component of the Groundwater Ingestion Exposure Route Value
- Three samples, B222A, B222B, and B222C, exceeded SROs for mercury for the soil inhalation standard for construction workers.
- Three samples had reported SPLP lead levels in excess of Class I but below Class II published values.
- None of the other parameters included in the analysis exceeded SROs for the applicable exposure pathways.

IEPA Comment 5) Section 5.0 - The last sentence of the third paragraph mentions that Building 222 functions as an engineered barrier. This is irrelevant at this stage of the investigation.

Bloom Response - This reference has been removed from the revised document.

IEPA Comment 6) Section 5.0 - The last paragraph requests a No Further Remediation Letter for this site based on the limited extent of contaminants reported in excess of standards. There are identified exceedances in at least 4 sample locations, 3 from the current data set and 1 from the previous data set.

Contaminants with exceedances from the current data include mercury, arsenic and lead. Contaminants with exceedances from the previous data set included a number of VOCs, SVOCs, and metals. Those four locations are the easternmost sample locations on the site. As such, additional investigation is necessary to determine the full extent of contamination to the east and south.

Bloom Response - Additional sampling is proposed to delineate the extent of impacts. The results from the sampling will be incorporated into a revised Site Investigation Report.

IEPA Comment 7) Appendix B - *Three of the soils boring logs have no entries for PID Reading. The determination for which sample depth was submitted to the lab was based initially upon the PID reading. Please explain how that determination was made in the absence of a PID reading.*

Bloom Response -The PID readings were available for all boring locations but were inadvertently omitted from several logs. PID readings have been added to the logs for B222B, B222E and B222G. There were no positive PID readings at these locations and no significantly elevated readings at any of the eight sampling locations. The highest PID reading was 3 ppm measured at 8-10 feet bgs at boring B222H. Sample intervals were selected at each location because of the following:

- B222A There was no PID indication of impacts. Laboratory sample was collected from a zone of silty clay with black discoloration. Bricks and debris were present above the zone with black discoloration however, the discolored zone appeared more likely to be a contaminant zone than the relatively inert debris noted.
- B222B There was no PID indication of impacts. Laboratory sample was collected from a zone of gravel and silt that was stained dark gray. No other suspect zones were noted at this location.
- B222C There was no PID indication of impacts. Laboratory Sample was collected from a zone with possible staining in a section of very fine grained sand. This zone also contained brick and other debris material.
- B222D There was no PID indication of impacts. Laboratory sample was collected from a zone of silty sand that included black foundry like material. Other zones within the boring encountered glass and granular material and staining, however the foundry-like material appeared most likely to represent a contaminant zone.
- B222E There was no PID indication of impacts. Laboratory sample was collected from a zone of sand/gravel/silt that was orange, brown and black and included debris type material.
- B222F There was no PID indication of impacts. Laboratory sample was collected from a zone of grey silt with bright orange oxidation, which was representative of much of the boring. A thin zone of material containing ash was noted within 1.5 feet of the ground surface however this was not sampled as it was not representative of the soil in this location.
- B222G There was no PID indication of impacts. Laboratory sample was collected from a zone of discolored yellow brown clay, sand and gravel that also contained some wood. No other debris was noted at this location.
- B222H Indication of low level PID impacts (3 ppm) were reported. Laboratory sample was collected from a zone of clayey silt with black mottling which coincided with the zone with highest PID impacts.

IEPA Comment 8) Appendix B - *A number of the boring logs note things like debris, glass, brick, concrete, ash/charcoal, and wood. There are also locations noted as stained or discolored. However, it*

appears that few of the samples were collected from the soil intervals where those items are mentioned, even in the absence of PID readings. Please explain why, in the absence of an elevated PID reading, the samples were not collected from those locations/depths. It is noted that there were no elevated PID readings listed and no VOC exceedances identified.

Bloom Response - The most elevated PID measurement noted was 3 ppm. A sample from this zone was submitted for laboratory analysis. For other locations where PID measurements did not indicate volatile component were present, samples were collected from intervals that appeared most likely to be representative of highest levels of contaminants at each boring. In instances where debris, glass, brick, concrete, ash/charcoal and wood were noted in the borehole soils, these intervals were targeted for sample collection only when staining or other indication of impacts was not present. The debris noted in the borings was recognizable as principally building debris and consisted of material that is typically inert and tend not to present significant environmental concern. Additional details on sample selection criteria are included in comment response 7.

Document Status

The revised document will be completed following collection of the additional information requested by IEPA and will include modifications to the report to move toward achieving no further action status.

Additional Investigation

Additional investigation is proposed. The investigation would include completion of seven GeoProbe borings and installation of temporary wells at each boring location. Six sampling locations will be placed to define the nature and extent of impacts to the east and south of AOC 222. The seventh sample will be located near B222E and extended to 25 feet bgs to allow for ground water sample collection for all parameters at B222E. The current well does not extend far enough below the water table to allow for quality groundwater sample collection. Soil samples will be analyzed for VOCs, SVOCs, RCRA metals, SPLP lead, and pH. Ground water samples will be analyzed for VOCs, SVOCs, RCRA metals. Proposed sample locations are included on the attached figure. Temporary wells will be appropriately abandoned once no further action status is achieved. An estimate for completing the investigation and reporting is also attached.

Please contact me if you have any questions or need additional information.

Sincerely,



Judy Fassbender, P.G., P.H.
Senior Associate