April 4, 2004

Ms. Ruth Williams, Project Manager
IDEM, Voluntary Remediation Program
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

RE: Responses to Indiana Department of Environmental Management (IDEM) Comments Regarding a Remediation Work Plan (RWP) for the Former Oliver Plow Works (Area C) properties, South Bend, Indiana;SBI017.200.0028

Dear Ms. Williams:

Hull & Associates, Inc. (Hull), on behalf of the City of South Bend Redevelopment Commission (the City), has prepared this letter to respond to IDEM's comments pertaining to the RWP for Area C (VRP #6001202), submitted to IDEM in April 2004 (Hull Document # SBI017.200.0010). As you are aware, the RWP for Area C was prepared pursuant to the Voluntary Remediation Program Resource Guide (July 1996). The following are Hull's and the City's responses to comments contained in IDEM's September 28, 2004 correspondence.

General Response

Based on review of IDEM's general comments on the RWP for Area C, it appears that the reviewer may not have recalled meetings between the City, the City's counsel (Plews Shadley Racher & Braun), Hull, and IDEM regarding how investigation demolition, remediation and redevelopment are to proceed at the Site. As you may recall, your office requested submittal of the RWP despite concerns voiced by City and Hull that the submittal would be premature as critical information pertaining to the horizontal and vertical delineation of the apparent source areas in soils was not yet available. The City and Hull also believed that submittal of the RWP was premature, as the City had not decided whether to pursue of covenant for the entire property, or just the apparent source areas. Finally, during our discussions, the City and Hull informed IDEM that submittal of the RWP would largely describe investigative activities needed to define the extent of remediation activities, if necessary, for soils on Area C.

Based on the City's and Hull's understanding of our discussions, the RWP focused largely on the need to collect additional data to confidently show both the vertical and horizontal limits of the identified source areas in soil requiring remediation. Following completion of the proposed investigative activities (as summarized in Section 6.1 of the RWP), the City intended to submit an amended RWP to show the boundaries of the soils requiring remedial activities as well as defining how these soils would be specifically managed (i.e., off-Site disposal or potentially relocation on-Site with engineering/institutional controls, etc.). Furthermore, Hull and the City did not believe that sufficient data existed at the time the RWP was submitted to make an informed decision on how best to manage soil exceeding VRP Tier II non-residential cleanup goals.

Since submittal of April 2004 RWP for Area C, additional potential source areas have been discovered during demolition activities of Building #46 and #47. The City and their demolition consultant remediated these areas and collected some samples. These areas may require additional sampling should the City wish to include areas in the covenant not sue. Therefore, Hull's and the City's responses to IDEM will be incorporated into comments reflect the submittal of a revised RWP.

Former Oliver Plow Works (Soil) - VRP #6001202

Section 1.0, Executive Summary, pages 1-2:

1. The executive summary should be revised to include statements identifying the sources of contamination and the need for additional investigation.

Hull's response:

The revised RWP will include a summary of the potential source areas that are described in Section 2.2.1 of the RWP as well as a statement pertaining to the need for additional investigative activities

Section 2.1.1, Site Location and History, pages 3-8:

2. **Page 3** The text states that to date, all but two of the buildings have been demolished. According to Figure 4, three buildings (14A, 46, and 47) remain on this site. Please clarify.

Hull's Response:

The text on page 3 of the Area C RWP will be revised to state that only one building (14A) is remaining. Note that since the submittal of the Area C RWP building #s 46 and 47 have been demolished.

3. **Page 4** The text states that Weston's assessment noted three USTs in the southwest portion of the site. A review of their report in Appendix A indicates that five USTs were present at the site (four of which were located in the southwest portion of the site). Please clarify.

Hull's Response:

The text will be revised to state the five USTs were located on the Site and that four were located in southwest portion.

4. Page 2-7 of Weston's report states that the on-site sewer system received all industrial process wastes, and that there may be portions of the system that may contain residual levels of metals, oils and greases, and toxic organics. It is possible that leaks in the sewer system may have resulted in the migration of these contaminants to site soils; consequently, there could be additional areas of

the site that would require investigation/sampling. It is assumed that the sewer system was removed during the demolition of the buildings; however, this RWP does not mention any previous investigation related to the on-site sewers. This issue should be addressed in the RWP.

Hull's Response:

During demolition activities at Area C, the sewer system was removed and the resultant trenches were evaluated relative to any potential leaks and the presence of residual contamination in surrounding soils. Based on these observations, the sewer appeared to have been in good condition with no evidence of significant leakage or releases. The sewer system was therefore not identified as an area that required additional investigation and sampling.

5. **Page 5** The 1999 Phase II Site Assessment conducted by Envirocorp also included the installation of nine monitoring wells. This information should be included in the text, as well as their locations shown on Figure 2 (the first identification of these wells in on Figure 4). Figure 2 also should be revised to indication where Envirocorp's trenching investigation occurred.

Hull's Response:

The text on page 5 will be revised to state that Phase II ESA activities completed by Envirocorp included the installation of nine monitoring wells. Also, Figure 2 will be revised to include the locations of the monitoring wells and test trenches.

6. **Page 6** A review of the Former Foundry Soil Evaluation included in Appendix D indicates that only four soil samples were analyzed from the 17 borings advanced. Furthermore, stained soils were observed in several borings; however, only one soil sample from two of those borings (#5 and #13) was analyzed. In spite of the limited analytical data in this area, please provide the rationale for reducing the lateral extent of proposed sampling in Area 4.

Hull's Response:

As shown on Figure 4, the lateral extent of Area 4 is based on the approximate limits of the former foundry based on review of Site plans, etc. The borings by Herceg were completed to preliminarily evaluate the characteristics (both chemical and geotechnical) of these materials in the general vicinity of the Former Foundry for use as borrow soils. Hull recognizes the limited information, especially chemical, that this report provides. Hull has therefore proposed reevaluation of the approximate footprint of the Former Foundry.

7. The text states that Hull completed Interim Phase II ESA activities to characterize surface soils in eight Recognized Environmental Condition areas (RECs), and that the field activities included the installation of 29 soil borings. Since boring depths are not identified, it is unclear whether any subsurface soils were collected for laboratory analysis during this event. Characterization of the vertical extent soil contamination includes the collection of samples at various depths

within the vadose zone. If only surface soils were analyzed, some of these RECs will have to be revisited during this additional proposed sampling. Please revise the text to provide details regarding the Interim Phase II ESA sampling.

Hull's Response:

The text will be revised to state that samples analyzed during the Interim Phase II ESA were collected from the shallow surface soils (i.e., 0 to 2 feet). As noted on page 7 of the RWP, the analytical results indicated that shallow surface soils sampled in the eight RECs were below applicable VRP Tier II nonresidential cleanup goals. These analytical results indicate that the RECs are eligible for a finding of completion of remediation. Therefore, the collection of additional soil samples is not warranted.

8. **Page 7** Based on the location of the former loading dock shown on Figure 4, please provide the rationale for the area 20 proposed sample locations (i.e., all of the Area 20 proposed sample locations are only to the south of the former loading dock instead of encircling the former dock).

Hull's Response:

The location of Area 20 shown on Figure 4 represents the approximate area of discolored soils that were encountered and subsequently removed during demolition activities. The proposed samples will confirm that the discolored soils were sufficiently remediated such that Tier II nonresidential cleanup goals are not exceeded.

9. **Pages 7 and 8** The text states that the petroleum-impacted soil area identified on Figure 2 was excavated and confirmation samples were collected for TPH analysis, and the "green" soil area identified on Figure 2 was excavated with no mention of confirmation sampling. According to section 2.2.1 of the RWP, both of these areas need to be addressed during the additional proposed soil sampling. Soil Samples should be collected in Area 22 and analyzed for individual constituents of a TPH analysis, as well as lead, and soil confirmation samples should be collected in Area 23.

Hull's Response:

Based on interim remedial actions that were completed during Site development activities, it is apparent that the impacted soils were removed from both areas. Samples were collected from both the petroleum-impacted area and "green" soil area and tested (SVOCs, VOCs and TPH for petroleum-impacted soils and VOCs and metals for the "green" soils). Sampling locations, the extent of excavation, excavated volumes and analytical results will be presented in the revised RWP, as will proposed additional soil sampling locations and analytes.

Section 2.2.1, Sources and Extent of Contamination in Soil, Pages 8-11:

10. **Area 9** Please explain how the extent of this area was defined without the benefit of previous sampling results (MW-6 appears to be the only data point in the vicinity, and it is not within Area 9).

Hull's Response:

Currently, there is no information to define the actual extent of Area 9. Area 9 was identified as a potential source area based on historical information, which indicated that this waste drums were stored in this general location. It is not possible to further define this area. Therefore, Hull has proposed soil sampling to identify whether the drum storage resulted in leads and impacts to soils such that Tier II nonresidential cleanup levels are exceeded.

11. **Area 14** Figure 3 must be revised to identify Area 14, and Figure 4 should be revised to identify the proposed sampling locations in Area 14.

Hull's Response:
Figure 3 and 4 will be revised to show approximate locations of the numerous rail lines that occupied the Site.

12. **Areas 20 and 21** Based on encountering discolored soils in these areas during demolition activities, the potential COCs should include other constituents in addition to metals. Please revise the COCs for these two areas.

Hull's Response:

During demolition activities, the visually discolored soils were removed, characterized, and disposed at an appropriate facility. The waste characterization results indicated that metals were the only COCs for Areas 20 and 21. These data will be presented in the revised RWP.

13. **Areas 22 and 23** Soils should be addressed in these two areas (see comment 9).

Hull's Response:

Please refer to the response for Comment #9.

14. Based on the presence of stained soils at monitoring well location MW-4 (at depths up to 10.5 feet bgs), this area should also be included in the additional field investigation.

Hull's Response:

As part of the Envirocorp Phase II ESA, a soil sample was collected at the approximate depth referenced in the above comment and submitted for metals, VOCs and SVOCs. The analytical results of this sample, as summarized on the table in Appendix C-2 on the RWP, indicate that no VOCs and SVOCs are present above the method detection limit, except for methylene chloride, which was attributed to the laboratory. The metals concentrations did not appear to be elevated. Based on these results, these subsurface soils were not considered to constitute a source area at MW-4.

15. Weston's assessment shows two USTs to the east of building 46, and Figure 2 shows that previous sampling in this area is limited. This area should also be included in the additional field investigation.

Hull's Response:

During the demolition of Building #46, one UST was encountered and removed. A small amount of discolored soils was present associated with a product line. These soils were characterized and sent to a licensed disposal area. Following removal of the USTs, additional closure samples were collected and analyzed for VOCs, SVOCs and metals. The analytical results from the samples indicated that no further action is required. Hull and City intend to document the removal and sampling results in the remediation completion report for the Site. The results of the sampling will also be presented in the revised RWP.

Section 2.2.2, Ecological Assessment Results, page 11:

16. The text does not state whether the IDNR and USFWS were contacted to check on the potential for endangered/threatened species in the vicinity of the site. Please provide this information.

Hull's Response:

The revised RWP will include text to state the IDNR and USFWS were contacted to verify the presence or absence to endangered/threatened species in the vicinity of the Area C. In support of this statement, the responses for the IDNR and USFWS will be included in the Revised RWP.

17. Based on Appendix C of the 1996 VRP Resource Guide, parks are included as one of the critical habitats to be considered in the determination of the appropriate cleanup criteria for the site. A park is identified to the north of the site on Figures 2, 3, and 4. Please address this critical habitat in the RWP.

Hull's Response:

The park that is located to north of the Site is separated from the Site by a major east-west rail line. Like many parks in urban areas, the park is small (approximately seven to nine acres), is covered primarily by mowed grass with baseball fields, a small asphalt parking lot and a playground. Based on the nature and uses of the park, it is highly improbable that it supports critical habitats. Therefore, the presence of the urban park will not change the cleanup standards applied at the Site.. The revised RWP will re-state the information provided in this paragraph.

Section 2.2.3, Baseline Hydrogeological Assessment Results, pages 11-12:

18. The text states, "…the relatively permeable nature and lateral continuity of the unconsolidated deposits would tend to promote relatively rapid and extensive migration of contaminants in unsaturated soils." This statement suggests that

extensive vertical profiling of the unsaturated zone is necessary at this site. However, there appears to have been limited vertical profile sampling during previous investigations, and limited vertical profiling is proposed in Section 6.1. Because COCs include more than just lead, additional subsurface soil sampling should be conducted during this additional investigation.

Hull Response:

Hull and the City do not agree that the presence of permeable formations necessarily warrants additional subsurface soil sampling and analysis to vertically profile the Site, particularly in areas where release mechanisms are absent. This would lead to significant costs with potentially little to no benefit to the City. Hull and the City do agree that in some instances, subsurface sampling will be required to define the vertical extent of COCs that exceed VRP Tier II nonresidential cleanup goals.

19. This baseline hydrogeologic assessment should also include a discussion of the following: a more detailed site stratigraphy (fill composition, thickness, and lateral extent, thickness of the clay unit separating the two aquifers, depth to bedrock, etc.); physical results (grain size, TOC, etc.); vertical gradients within the shallow aquifer; and site topography and surface drainage pathways.

Hull Response:

Hull agrees that there is currently limited information for characterization of the Site's geologic and hydrogeologic conditions. To date, only shallow (i.e., approximately 30 feet) monitoring wells have been installed. The paucity of information at depth beneath the Site is rationale for installing the four deep (i.e., approximately 75 to 100 feet) soil borings, as described in Section 6.1 of this RWP. Hull and the City intended to provide the requested information in the amended RWP following completion of the additional investigation.

Section 3.0, Cleanup Criteria Selection, page 13:

20. IDEM's January 1996 VRP Lead Policy does not specifically indicate the amount of soil cover required for the "no exposed soil" condition. Please provide supporting information.

Hull's Response:

The text on page 22 will be revised to state:

"This policy provides for exposure limitation (no exposed soil) by establishing ground cover, laying sod, or installing an appropriate barrier."

Section 4.1, Objectives of Remedial Action, page 14:

21. This section lists the objectives of this work plan, please revise this section to provide the remediation objectives for all affected media, COCs, and exposure pathways.

Hull's Response:

Hull is unclear of the meaning of this comment. This RWP only addresses soils at Area C and proposed use VRP Tier II non-residential Cleanup Goals. The use of these cleanup goals provides for the remediation of the COCs to be the most stringent when considering direct contact, leaching, etc. exposure pathways.

Section 4.2, Summary, page 14:

22. Since many of the elements of an RWP (e.g., proposed remedy, project schedule, confirmatory sampling and analysis plan, etc.) will not be provided until submittal of the Amended RWP, this current document is essential a second Additional Phase II ESA Work Plan. Please clarify why it was submitted to the agency as an RWP.

Hull's Response:

As mentioned in the response to IDEM's General Comment provided on page #1 of this letter, Hull and the City prepared the RWP at the request of IDEM.

Section 5.0, Risk Assessment, page 16:

23. It should be noted in this section that some of the compounds (e.g., phenanthrene, benzo[g,h,I]perylene, etc.) will require a calculated Tier II nonresidential cleanup goal.

Hull's Response:

Section 5.0 of the RWP will be revised to state:

> "At this time, it is anticipated that only VRP Tier II nonresidential cleanup goals and calculated nonresidential cleanup goals will be used to guide the remediation at the Site. Therefore, completion of this Section…"

Section 6.1, Additional Field Investigation, page 17:

24. Figure 4 of the RWP only shows the area that are being proposed for additional investigation and, if necessary, remediation under this RWP. In order to evaluate the proposed additional sampling, the RWP, at a minimum, should include the Phase II ESA figures that clearly define the vertical and horizontal extent of contamination known to date.

Hull's Response:
As previously noted, available analytical results do not allow for confident definition of the horizontal and vertical extent of COCs in RECs listed in Section 2.2.1. This data gap will be addressed by completing the investigations described in Section 6.1 of this RWP.

25. Direct-push sampling is proposed to depths of 10 to 20 bgs. According to the hydrogeologic assessment results, the water table is present at approximately 20 feet bgs; consequently, each boring should extend through the entire vadose zone.

Hull's Response:

The text will be revised to state that soil borings will be advanced until the vertical extent of the impacted soils has been penetrated. If impact extends to the water table at a given location, the boring will extend to the water table.

26. Figure 4 shows the locations of 70 direct-push sampling locations, but there are 81 surface soil and 81 subsurface soils samples proposed. Are these "extra" 11 sample QA/QC samples, or will some borings have more than one surface and one subsurface soil sample submitted for analysis? Please provide clarification and detail (e.g., sample depths, rationale, etc.) on the proposed sampling.

Hull's Response:

In preparing the estimated number soil samples required to delineate the extent of impacted material, Hull generally provides for a contingency in the number of samples that will be analyzed (i.e., in cases where more than one subsurface sample would be collected to define the vertical extent of impact). In this case, the contingency was approximately 15 percent. This contingency is represented by the additional samples noted in the comment. A table will be provided in the revised RWP to provide the number of samples to be collected per area, the types of analyses proposed in each area, proposed QA/QC and notations on contingency sampling.

27. The text states that the additional field investigation also includes four continuously sampled soil borings. Please indicate the proposed completion depth(s) for these borings.

Hull's Response:

As noted earlier, there is a paucity of geologic information to allow for prediction of completion depth(s) of the soil borings. Based on information from other environmental studies in the vicinity of the Site, it is anticipated that the completion depth may be between 75 to 100 feet. The revised RWP will indicate that expected completion depths are between 75 and 100 feet bgs.

28. The text states, "An Additional Investigation Work Plan will be submitted to IDEM within 90 days of the approval of the RWP." This statement is inconsistent with others in the RWP that indicate that an Amended RWP will be prepared and submitted to IDEM for approval following the additional investigation activities. Clarification of the sequence of events/documents is required.

Hull's Response:

To complete remediation at the Site, if necessary, Hull and City believes the following events need to be completed:

1. IDEM approves the RWP;

2. An Additional Investigation Work Plan is prepared and submitted within 90 days of RWP approval;

3. The addition investigation is implemented and completed; and

4. An Amended RWP, describing the results of the additional investigation, is prepared and submitted to IDEM.

Section 6.5, Data Management, pages 19-20:

29. The text states, "Following completion of investigative activities, Hull will consolidate data into an investigative update report that will be submitted to IDEM…" This is inconsistent with previous statements in the RWP (see comment 27)(sic), and clarification of the sequence of events/submittals is required.

Hull's response:

Please see the response to Comment #28.

If there are questions or comments regarding the above response, please contact Andy Laurent at (574) 245-6112, or me at (513) 459-9677.

Sincerely,

W. Lance Turley
Senior Project Manager

ct: Andy Laurent, City of South Bend
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