ANCHOR QEA

614 Magnolia Avenue
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Phone 228.818.9626
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VIA FEDEX

April 8, 2013

Gary Miller, Remedial Project Manager
U.S. Environmental Protection Agency, Region 6
Superfund Division (6SF-RA)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: San Jacinto River Waste Pits Superfund Site
U.S. EPA Region 6, Unilateral Administrative Order, CERCLA Docket No. 06-03-10
Notice of Possible Delays in Performance

Dear Mr. Miller:

This letter is submitted pursuant to Paragraph 92 of the above-referenced Unilateral Administrative Order (UAO) on behalf of International Paper Company and McGinnes Industrial Maintenance Corporation, the Respondents named in the UAO. It provides the written notice required under Paragraph 92 with respect to possible delays in the performance of certain actions set forth in the approved November 2012 Remedial Investigation/Feasibility Study (RI/FS) Schedule (Schedule). The possible delays were reported to you in a telephone call on April 4, 2013.

My letter to you dated April 1, 2013 (a copy of which is attached as Attachment 1) explained the nature of the possible delays addressed further by this letter. As explained in that letter, your letter dated March 25, 2013 (March 25 Letter, a copy of which is attached as Attachment 2) stated that USEPA was "approving with modifications" the Respondents' draft Baseline Human Health Risk Assessment (BHHRA), submitted to USEPA in accordance with the Schedule on December 5, 2012. The "modifications" include nineteen substantive

comments on the draft BHHRA which must be evaluated by Respondents and addressed in a revised submission of the BHHRA to USEPA. The Schedule contemplated that the same process that has been followed with respect to previous submissions by Respondents under the UAO would be followed for the BHHRA. That is, the Respondents would submit a draft report, USEPA would review and provide comments on the draft report, Respondents would evaluate USEPA's comments and submit a draft final version of the report, and then USEPA would review and approve the draft final report or approve it with modifications. To the extent that USEPA regards its March 25 Letter to require Respondents to submit a final BHHRA, it would thus skip over two steps contemplated and agreed to by USEPA and Respondents as part of the approved Schedule – USEPA's comments on the draft report and the Respondents' preparation of a draft final report for USEPA's review and approval.

The Schedule contemplated that USEPA's comments on the draft BHHRA would be received by January 24, 2013, that Respondents would have 25 business days from receipt to address USEPA's comments and to submit a draft final BHHRA. It further contemplated that within 20 business days thereafter, USEPA would approve that document or to approve it subject to modifications, and that Respondents would then have an additional ten business days to submit a final BHHRA. The March 25 Letter, received by regular mail on March 28, 2013, was thus received about 60 days after the agreed-upon date for receipt of USEPA's initial comments on the draft BHHRA.

In addition to the above-described concerns regarding the potentially truncated approval process for the draft BHHRA, the Respondents received a letter dated April 2, 2013 from USEPA (April 2 Letter, a copy of which is attached as Attachment 3), via email on April 4, 2013 and by regular mail on April 8, 2013. The April 2 Letter purports to "approve," subject to modifications, the draft Remedial Investigation (RI) report that was submitted to USEPA, along with the draft BHHRA, on December 5, 2012. As with the draft BHHRA, the modifications referenced in the April 2 Letter include many substantive comments that will need to be analyzed and addressed in a revised submittal to USEPA. Again, to the extent USEPA regards its April 2 Letter to require Respondents to directly submit a final RI report, this would skip over the steps agreed-upon as part of the approved Schedule for USEPA comments on the draft RI report and the Respondents' preparation of a draft final RI report.

The approved Schedule provided for USEPA to provide comments on the draft RI report and for Respondents to evaluate those comments and submit a draft final RI report on the same timetable as for the BHHRA. As in the case of the BHHRA, USEPA's comments on the draft RI report were received by Respondents long after the date contemplated by the Schedule -- in the case of draft RI report, 70 days after the January 24, 2013 date for receipt of such comments.

To the extent, the "approval with modification" letters are interpreted as final approval of the respective documents, then Respondents' submissions of the final BHHRA and the final RI report are arguably due within ten business days of the receipt of those approvals under the UAO and approved Schedule. Respondents respectfully contend that the "approval with modification" letters should not be construed as final approval letters because many of the "modifications" required under the letters are not mere wording changes; they are substantive comments that will require technical evaluation and preparation of substantive revisions to the documents. The Schedule currently provides for a period of 25 business days to address USEPA comments on the draft BHHRA and draft RI report and then ten additional business days to finalize the reports after receiving USEPA's approval of the draft final reports submitted by Respondents. Respondents commenced an assessment of the substantive comments on the BHHRA contained in the March 25 Letter promptly following receipt of that letter; that assessment is ongoing. The process of addressing the comments in the April 2 Letter began shortly after its first receipt by e-mail on April 4, 2013, but is only in its initial stages. Notwithstanding their diligence, given the scope of the comments, Respondents have no reasonable means of submitting final documents by the dates set forth above.

As USEPA is well aware, the BHHRA and RI report, which are lengthy and complex documents, are extremely important to the RI/FS process and form the basis for the preparation of the draft Interim Final Feasibility Study (FS), which under the Schedule is due 45 business days after submission of the final BHHRA and RI report. Given the current uncertainty regarding timing for issuance of the BHHRA and RI report in final form and regarding their content in light of the substantive comments contained in the March 25 Letter and April 2, Letter, it is not possible for Respondents to proceed at this time with completion of the draft Interim Final FS.

In accordance with our discussion on April 4, 2012, Respondents intend to complete their review of the March 25 Letter and the April 2 Letter and then prepare proposed modifications to the Schedule (Proposed Modified Schedule) for your consideration and discussion. The Proposed Modified Schedule will include, at a minimum, new proposed submission dates for the draft final BHHRA, draft final RI report, and draft Interim Final FS. In the meantime, Respondents will continue to address the comments on the draft BHHRA contained in USEPA's March 25 Letter and the comments on the draft RI report contained in USEPA's April 2 Letter.

We look forward to working with you to resolve these issues. Please do not hesitate to call if you have any questions.

Sincerely,

David C. Keith
Project Coordinator
Anchor QEA, LLC

cc: Barbara Nann, USEPA
Anne Foster, USEPA
Amy Salinas, USEPA
Phil Slowiak, International Paper Company
Dave Moreira, McGinnes Industrial Maintenance Corporation
Jennifer Sampson, Integral Consulting Incorporated

Attachments

ATTACHMENT 1

ANCHOR QEA

614 Magnolia Avenue
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Phone 228.818.9626
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April 1, 2013

Gary Miller, Remedial Project Manager
U.S. Environmental Protection Agency, Region 6
Superfund Division (6SF-RA)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Remedial Investigation/Feasibility Study (RI/FS) Schedule – Correspondence dated March 25, 2013 regarding Draft Baseline Human Health Risk Assessment (BHHRA) San Jacinto River Waste Pits Superfund Site, Harris County, Texas, Unilateral Administrative Order, CERCLA Docket No. 06-03-10

Dear Gary:

This letter is submitted on behalf of the Respondents for the San Jacinto River Waste Pits Superfund Site (International Paper Company and McGinnes Industrial Maintenance Corporation), in response to your correspondence dated March 25, 2013 regarding USEPA's "approval" of the Draft BHHRA, subject to modifications as set forth in the Agency's comments.[1] These comments are the first substantive comments that have been provided to Respondents with respect to the Draft BHHRA, which was submitted to USEPA on December 5, 2012. The comments raise at least 19 substantive issues related to this document.

Under the current agreed-upon schedule for the RI/FS, the approved November 2012 Revised RI/FS Schedule (Schedule), USEPA had committed to provide comments on the Draft BHHRA by January 24, 2013 and Respondents were to have 25 business days to submit a revised Draft of the BHHRA to USEPA (by February 28, 2013, assuming timely receipt of

[1] A PDF version of the letter was received by email from Gary Miller to David Keith on March 25, 2013; the hard copy of the letter was received by David Keith on March 28, 2013.

USEPA's comments). USEPA was to then complete a review of the Draft Final BHHRA and provide approval of the BHHRA by March 28, 2013, with a Final BHHRA to be submitted 10 business days later (or by April 11, 2013, assuming receipt of no additional USEPA comments on the Draft Final BHHRA). This schedule was worked out between USEPA and the Respondents to ensure that there would be an opportunity for Respondents to address USEPA's substantive comments on the Draft BHHRA. It was also intended to ensure that the BHHRA (together with the Remedial Investigation (RI) Report), which provide the underpinnings for the Draft Feasibility Study, would be completed sufficiently in advance of the May 2, 2013 deadline by which, under the Schedule, Respondents are to submit the Draft Feasibility Study.

USEPA's "approval" of the BHHRA on March 25, 2013, subject to numerous substantive comments and requiring extensive modifications to the Draft BHHRA, is inconsistent with the agreed-upon Schedule and process. It comes 60 days after the deadline by which USEPA had agreed to provide comments on the Draft BHHRA. By proceeding in this fashion, USEPA appears to have unilaterally eliminated the interim period for review and response to substantive comments and shortened the review period. USEPA's actions are of particular concern because USEPA has yet to provide comments on the Draft RI Report, which was submitted to USEPA along with the Draft BHHRA on December 5, 2012. Per the Schedule, comments on the Draft RI Report were also due on January 24, 2013, and it is also our understanding the Draft RI Report may be "approved" in a similar manner (i.e., approval subject to substantive comments and requiring Agency-mandated modifications).

In light of USEPA's recent delivery of the "approval" of the Draft BHHRA and the anticipated "approval" of the Draft RI Report, the Respondents request an opportunity to discuss with you a revised Schedule that provides Respondents with a reasonable response time to address USEPA's comments and to make modifications to the BHHRA, to address USEPA's comments on the Draft RI Report once such comments are provided, and a revised date for submittal of the Draft Feasibility Study. In the meantime, we are diligently working to address comments received from USEPA on the Draft BHHRA.

Sincerely,

David C. Keith
Project Coordinator
Anchor QEA, LLC

Cc: Phil Slowiak, International Paper Company
Dave Moreira, McGinnes Industrial Maintenance Corporation
Jennifer Sampson, Integral Consulting Incorporated

ATTACHMENT 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

MAR 2 5 2013

Mr. David Keith
Project Coordinator
Anchor QEA, LLC
614 Magnolia Avenue
Ocean Springs, MS 39654

RE: Draft Baseline Human Health Risk Assessment
San Jacinto River Waste Pits Superfund Site, Harris County, Texas
Unilateral Administrative Order, CERCLA Docket No. 06-03-10

Dear Mr. Keith:

The Environmental Protection Agency (EPA) and other agencies have performed reviews of the above referenced document dated December 2012. The EPA approves this document with the enclosed modifications.

Please provide copies of the final document to the distribution list. If you have any questions, please contact me at (214) 665-8318, or send an e-mail message to miller.garyg@epa.gov.

Sincerely yours,

Gary Miller
Remediation Project Manager

Enclosure

cc: Luda Voskov (TCEQ)
Bob Allen (Harris County)
Linda Henry (Port of Houston)
Jane Sarosdy (TGLO)

Comments
Draft Baseline Human Health Risk Assessment

1. (General Comment): Due to the lack of certainty, lack of consensus, and controversial nature of cancer toxicity assessment of dioxins, specifically TDI versus cancer slope factors, the BHHRA shall include a side-by-side risk analysis (sensitivity analysis) of the use of the TDI of 2.3 pg/kg-day and the CSF of 156,000 $(mg/kg\text{-}day)^{-1}$ values. Although several citations are provided suggesting EPA and TCEQ may be moving in the direction of use of non-linear cancer assessment for TCDD, they have not made this practice official policy as of yet. It is clear, that the use of 156,000 $(mg/kg\text{-}day)^{-1}$ will show additional risk in some areas. This additional risk may or not change the need for certain remedial actions; hence why this analysis should be performed.

2. (P. 1-3, Last sentence of Section 1.2): "There is no basis for assuming… that baseline conditions would have continued to exist had the TCRA not been implemented." Though it may be true that exact conditions may have been somewhat different, there is basis to assume a large degree of contamination existed before the TCRA and would have continued had the TCRA not been implemented. Data that contributed to site discovery and listing dates long before implementation of the TCRA. This statement shall be modified accordingly or removed.

3. (Section 2.2, Demographics): This section does not identify the demographics of the Highlands community nor does it refer to Highlands as a residential area adjacent to the USEPA's Preliminary Site Perimeter. This section does, however, recognize Channelview and its residential demographics given information from the 2010 Census. Demographic information shall be included for the Highlands community.

4. (P. 2-6, Section 2.3.2.1, Trespasser): The HHRA shall better define trespasser/ hypothetical trespasser as referred in the BHHRA. The only exposure medium for which a theory of exposure scenario was assessed was soil. The HHRA shall describe the activity the trespasser would be engaged in while present at the site North of IH-10 and activity on the Peninsula South of IH-10.

5. (P. 3-2, Section 3.1.2.2 Tissue): The discussion correctly notes the uncertainty in relating the catfish tissue analyses for COPCs to ingestion risks. It is asserted in this section that no data are available on use of the Site for fishing, but the absence of this data is a data gap of the RI, and the deficiency must be met with conservative assumptions. There is uncertainty in fish tissue analyses and use of those data. No records have been offered as to the sizes / ages of fish used in the tissue analyses compared to those eaten. Justification shall be provided to document why the analyses of tissue from the RI program represents the tissue concentrations of the COPCs used in the BHHRA. In addition, data/ references/justification shall be provided that supports the claim that use of catfish data are more conservative than use of other fish. Documentation shall be provided that the fish tissue analyzed is representative of the ages of fish likely to be consumed. If such is not available, a credible projection of contaminants in mature catfish shall be included.

6. (P. 3-3, Section 3.1.2.2): This section first mentions the uncertainty of the various finfish and shellfish caught and eaten in the USEPA's Preliminary Site Perimeter. Thus the hardhead catfish was used as the bases of the assessment. The HHRA shall provide what, if any, information that was gathered in the profile survey (conducted by the PRP's independent contractor) regarding the fishing bounty. If the data from this activity was utilized in developing the BHHRA, it shall be included; and if not utilized, then the HHRA shall justify that. See comment above for page 3-2, Section 3.1.2.2.

7. (P. 3-4, Section 3.1.2.3, Soil): Use of shallow subsurface soil data (6" – 12" below grade) is used for the commercial worker receptor in the area south of I-10. However, construction-type activities may take place in this area in the future. The HHRA shall evaluate deeper (> 2 ft) soil data for risk.

8. (P. 5-1, Section 5.1.1, Exposure Scenarios): This section describes the exposure a recreational fisher would encounter as well as what exposure a subsistence fisher would encounter. The differing factor is the inclusion of the descriptor "incidental ingestion and dermal contact" in reference to sediment and soils for the recreational fisher. The HHRA shall define why this was used and clarify what difference it signifies in the identification of the types of fisher.

9. (P. 5-8, Section 5.1.2.2.2, Exposure Parameters): This section seeks to detail the differences in activity and intake for exposure based on age categories. It goes on the explain that the assumption that "young children would have higher potential exposures (on a per unit body weight basis) relative to other age groups" is a *conservative assumption* based on the upper-bound RME scenario. It continues to say that the individuals considered most likely to use the area under study under baseline conditions are adults. Given this only adult exposures were evaluated for the CTE evaluation. Children are likely brought to the site by adults, and although they may be too young to fish, they are more likely to be exposed through incidental ingestion and dermal contact of sediment and soil. Therefore, this group and exposure scenario shall be included in the BHHRA.

10. (P. 5-14, Section 5.1.2.2.2, Relative Bioavailability Adjustment): The use of RBA's less than 100% in the deterministic baseline assessment shall be explained in more detail. Specifically, clear justification shall be provided regarding use of a relative bioavailability adjustment (RBA) of 50% for the two COPCs, arsenic and dioxin/furans, for soil and sediment ingestion exposures.

11. (P. 5-41 Bottom of 1st paragraph, Section 5.2.3.3.1): The probabilistic risk assessment (PRA) assumes (referencing Tables 5-8, 5-9) that each variable is independent, except for dependence of skin area on body weight. The PRA discussion shall also recognize the relationships among other exposure factors (i.e., ingestion rates may be dependent on body weight and age). The PRA shall clearly specify what exposure factors / exposure factor statistics were applied to develop the 50th, 90th, and 95th percentile risk estimates.

12. (P. 5-42 line 20, Section 5.2.3.3.1): The reference to Table 5-22 shall cite values of 0.4, 2, and 3 (not 4). If 4 is asserted to be correct, however, the PRPs shall clarify the reference and

source of this value. The same error appears on P. 5-43, line 12. The PRA summary tables shall be double checked against the text.

13. (P. 5-43 bottom sentence, Section 5.2.3.3.1): Reference to Figure 5-8 claims "incremental additional hazard" relative to background, however, the Figure somewhat minimizes the effect by using such a wide range of hazard index values. A figure (either new or revised 5-8) shall show a more narrow range of interest (e.g., hazard indices between 0.1 and 10), the difference between the HI of the area evaluated and background would be shown more clearly. The site area has approximately 22% greater risk index than background in this illustration, and the text shall therefore objectively reflect this.

14. (P. 5-44, Section 5.2.3.3.2, Hypothetical Young Child Recreational Visitor): To better understand the exposure scenario, the HHRA shall clarify/elaborate on activity expected by the recreational visitor north of I-10.

15. (P. 5-45, Section 5.2.4.1): This section shall note and discuss the known biases in fish sampling. No sampling truly represents the population sizes caught by fishers. Most sampling techniques catch smaller fish than those sought and eaten by anglers. This bias is especially significant in this analysis, because the COPCs (including mercury, dioxins and PCBs) accumulate to higher tissue concentrations in older and larger fish. This fact is potentially a major bias, and the BHHRA may significantly underestimate Site risks based on fish consumption. The bias is compounded by the uncertainty in this key variable because few fish were caught and analyzed. See also the comment offered above for Section 3.1.2.2, Tissue.

16. (P. 5-49, Section 5.2.4.3.2, The Presence of Subsistence Fishers): The section states that it is rare that true subsistence fishing populations are found. The HHRA shall provide references and support for this statement. This evaluation seems to have been made without consideration of the current economical state the county is in, and without apparent complete review of all nearby communities from which fishers may come (Baytown, Highlands, McNair, Barrett Station, and Crosby). The 2010 Census data related to demographics and socioeconomic levels of these areas of Harris County shall be investigated to determine whether or not the probability of true subsistence fishers is possible.

17. (P. 5-51, Top paragraph, Section 5.2.4.3.2 and Section 5.2.4.3.3): The general population description shall discuss potential differences with minority communities and whether they are likely to consume more or less fish.

18. (P. 5-51, Section 5.2.4.3.3, Estimated Exposure from Fish Consumption): This section introduces the plausibility of a reduction of chemical contamination due to "typical cooking methods". The HHRA shall identify the methods referred to which may contribute to this loss. The FDA indicates that trimming the fat and broiling the fish may help to reduce the dioxin exposure. (http://www.fda.gov/Food/FoodSafety/FoodContaminantsAdulteration/ChemicalContaminants/DioxinsPCBs/ucm077524.htm#4). Evaluating cooking methods and providing the information on preparation may need to be addressed in the fish advisory documents.

19. (Table 5-4): The first and second values for RME EPCs for dioxins/furans in Table 5-4 shall be confirmed as the TEQ value calculated using zero for nondetects is higher than that calculated using ½ the detection limit for nondetects.

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David Keith
Project Coordinator
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ATTACHMENT 3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

APR 02 2013

Mr. David Keith
Project Coordinator
Anchor QEA, LLC
614 Magnolia Avenue
Ocean Springs, MS 39654

RE: Draft Remedial Investigation Report
San Jacinto River Waste Pits Superfund Site, Harris County, Texas
Unilateral Administrative Order, CERCLA Docket No. 06-03-10

Dear Mr. Keith:

The Environmental Protection Agency (EPA) and other agencies have performed reviews of the above referenced document dated December 2012. The EPA approves this document with the enclosed modifications.

Please provide copies of the final document to the distribution list. If you have any questions, please contact me at (214) 665-8318, or send an e-mail message to miller.garyg@epa.gov.

Sincerely yours,

Gary Miller
Remediation Project Manager

Enclosure

cc: Luda Voskov (TCEQ)
Bob Allen (Harris County)
Linda Henry (Port of Houston)
Jane Sarosdy (TGLO)

Comments
Draft Remedial Investigation (RI) Report dated December 2012

1. (General): The RI Report shall include a discussion of why the species sampled for tissue concentrations are representative of other species that may be consumed and impact human health risk.

2. (General): Several acronyms are not defined at the first use in the text. All acronyms shall be defined at their first use in the text. Also, the acronym list shall include "QC", which is used in the text.

3. (Section 2, p. 2-1): It was stated that "no historical chemistry data for soil, groundwater, or air from locations within USEPA's Preliminary Site Perimeter were found..." The statement is not correct. The historical chemistry data for soil and sediment are available from the USEPA and TCEQ Screening Site Assessment (September 2006) and the HRS Documentation Record (September 2007). Additional historical data for sediment and soil are available from the Texas Department of Transportation (Weston, 2006; Draft Field Activities Report for Sediment Sampling; San Jacinto River Bridge Dolphin Project IH-10 at the San Jacinto River). The report shall be revised to recognize this.

4. (Section 2.1.1.6, p. 2-15): Information gathered from the TCRA Cap porewater sampling event will not address the long-term effectiveness of the cap to prevent the release of dioxins and furans from the area within the 1966 perimeter. Only long-term monitoring will do this. The sampling completed will not address any potential releases resulting from future erosional forces, for example The discussion states that this pore water study was intended to address uncertainties associated with the potential for transport of dioxins and furans detected in perched water within the waste in the impoundments north of I-10 into surface water. However, this uncertainty still exists for the long term. The report shall be revised to discuss this long term uncertainty.

5. (Section 2.1.1.6, p. 2-15): The report shall include a reference to the study that was conducted to address uncertainties about the potential for transport of dioxins and furans detected in perched water within the waste in the impoundments north of I-10 into surface water.

6. (Section 2.1.2, p. 2-20): The report shall provide the particular section(s) where the results of sampling conducted according to Sediment SAP Addenda 1and 2 were presented.

7. (Section 2.1.2.2, p. 2-22): The report shall provide the particular section(s) where the results of sampling conducted according to Tissue SAP Addenda 1 are presented.

8. (Section 2.1.2.3, p. 2-23): The report shall include text references to the figures showing locations of soil investigations.

9. (Section 2.1.2.3, p. 2-23): The report shall correct the description of the groundwater monitoring well locations from "in the western cell of the northern impoundments" to the berms surrounding the northern impoundments".

10. (Section 2.1.2.4.2, p. 2-26): The reference for Miller 2011g is not listed in the reference list. This reference shall be added to list of the references.

11. (Section 2.1.2.4.2, p. 2-27): The report shall provide the particular section(s) where the results of groundwater sampling in the area south of I-10 are presented.

12. (Section 2.1.2.4.5, p. 2-27): The report shall provide the particular section(s) where the results of the TCRA armored cap porewater study are presented.

13. (Section 2.1.3.3, p. 2-31): The reference to "EPA 2009b", which describes the draft recommended preliminary remediation goals for dioxin, has been superseded by the final non-cancer dioxin reassessment released on February 17, 2012. The 2012 final non-cancer dioxin reassessment shall be used and referenced in the RI Report instead of the 2009 draft recommended preliminary remediation goals for dioxin.

14. (Section 2.1.3.3, p. 2-31): The text includes an "Anchor QEA 2012c" reference, but it is not listed in the Reference list. The Reference list shall be revised to include the reference, or the text revised as appropriate.

15. (Section 2.4.1, p. 2-45 and p. 2-46): The report shall provide additional discussion on the rationale for not including the data collected in 2005. For example, what was the statistically significant difference, and did the 2005 results show lower or higher numbers? The discussion shall indicate that the 2010 dioxin and furan concentrations were determined to be lower based on a variety of statistical analyses.

16. (Section 2.5.1, p. 2-48): The descriptions for the various TEQ bullets shall include "for mammals" to the end of each bullet. The TEQ definitions for birds and fish shall be added here as well.

17. (Section 3.3.1, p. 3-7): The 2001 fish advisory reference in the text is shown as "TDH 2001", but is shown in the Reference list as "TDH 2001b". This reference shall be corrected.

18. (Section 3.5.2, p. 3-14): In the "Gray silty sand" section, the "NAVD 88" acronym in the text shall be added to acronym list.

19. (Section 4.2, p. 4-5; and Section 4.5, p. 4-16): The discussion presents the background dataset only in terms of toxicity equivalency factors for mammals. Similarly, the various statistical comparisons present the chemicals of potential concern in terms of toxicity equivalency factors for mammals only. The discussion in the report shall also include statistical assessments in terms of toxicity equivalency factors for birds and fish, or provide an acceptable rationale for limiting the evaluation to mammals.

20. (Section 4.2.2, p. 4-7): The mean BEHP concentration in background surface sediment is shown to be "12" in text, but Table 4-6 lists the mean BEHP as "11". The report shall be corrected to show the correct concentrations.

21. (Section 4.3, p. 4-10): The discussion explains that the outlier analysis affects the calculation of exposure point concentrations for the baseline human health risk assessment. The discussion is silent on the potential impacts to the background analysis in the baseline ecological risk assessment. The report shall include additional explanation relative to the baseline ecological risk assessment.

22. (Section 4.3.4.2, p. 4-13): The text states "…..total PCBs with nondetects set to zero or set to one-half the detection limit…." An explanation shall be added that describes why values were set to zero.

23. (Section 4.5.3, p. 4-19): The last paragraph of this section closes with an unproven opinion regarding the source of COPCs that shall be deleted. The report may note that a number of sources, including the site, may contribute to the COPCs for the site. Any such statement shall include the specific COPCs and the specific sources, with supporting documentation and references.

24. (Section 4.5.3.2, p. 4-20): Additional discussion shall be added to discuss whole body catfish. Dioxins, PCBs, arsenic, and other compounds had significantly different values than background.

25. (Section 5.1, p. 5-3): The reference to TNRCC Docket No. "97-0453-IHW-E" shall be corrected to "1997-0453-IHW-E". In the next sentence the "hazardous material" shall be changed to "hazardous waste" as noted in the agreed order.

26. (Section 5.2.1.1.1, p. 5-8): The text provides an average concentration for 2,3,7,8-TCDF of 5,480 ng/kg, but Table 5-1 shows a mean of 6,680 ng/kg for 2,3,7,8- TCDF. The table or the text shall be corrected with the proper value.

27. (Section 5.2.1.1.2, p. 5-9): The text provides an average concentration for 2,3,7,8-TCDF of 15,300 ng/kg, but Table 5-2 shows a mean of 17,000 ng/kg for 2,3,7,8- TCDF. The table or the text shall be corrected with the proper value.

28. (Section 5.2.1.2.3, p. 5-12): Table 5-3 shall be referenced in this section.

29. (Section 5.2.2.5, p. 5-19): During the oversight activities, the TCEQ observed a completely saturated condition of the sediment/waste in the Northern Impoundment. The physical appearance of the sediment/waste was more like a "grayish silty muck". The report shall include a discussion or reference on how the hydraulic conductivity of the impoundment sediment/waste was measured.

30. (Section 5.2.3.1, p. 5-23): The fact that contaminant concentrations correlate with fine and organic carbon (OC) content is helpful. In reviewing the distribution maps (Figures 5-4, 6, 8), contaminant concentrations at several points appear to be anomalously high or low. If one marks the apparently anomalously low (or high) concentrations, they nearly all are at locations with low (or high) fines and/or organic carbon content. Figures 5-4, 6, and 8 shall be labeled to distinguish locations with high and low fines/OC, so that the distribution figures do not appear to show outliers, but instead convey the understanding of the causes for the distribution. A similar label of low (or high) fines/OC on Figure 4-1 areas where the TEQ exceeds the REV shall be included to provide a more coherent understanding of the data.

31. (Section 5.2.3.3.1, p. 5-26): The text states that there were matrix interference issues in regards to the analysis of the PCB Aroclors within the northern impoundments. There were detection limits of almost three orders of magnitude different from samples collected out of the same boring. The report shall include an explanation (lab chemist) on why there

were problems with the Aroclor analysis.

32. (Section 5.2.3.3.3, p. 5-30): The reference to Figure 5-17 states that it portrays TEQ. The graphed data has no label of units on its vertical axis, however, and the vertical axis appears to represent the relative TEQs, as compared to the mean in the Northern Impoundments. On the same Figure 5-17, the preliminary investigation perimeter data apparently excludes the Northern Impoundments data. The report shall provide explanations for this as well as accurate labeling of Figure 5-17.

33. (Section 5.2.4, p. 5-32): The data summaries are limited to toxicity equivalency factors for mammals only. The discussion and the summary tables shall also present the tissue dataset in terms of toxicity equivalency factors for birds and fish or provide an acceptable rationale for limiting the evaluation to mammals in this manner.

34. (Section 5.2.4, p. 5-32; and on p. 5-40): The section fails to note the major uncertainties in tissue contaminant data relating to the size, age, and sex of the specimens; ranges; stomach contents (food sources); and other key variables. For example, TDSHS study *Analysis of Risk from Consumption of Fish Taken from Toledo Bend,* 1995, shows the relationship between fish length and mercury levels at that site. If the fish caught from sampling were half the length of those typically consumed, the measured mercury content used for the tissue risk analyses could be several fold lower than the concentrations consumed by receptors. The uncertainties in the deductions derived from the limited scope of studies performed shall be described in more detail.

35. (Section 5.2.4.1.6, p. 5-37): Reference is made to Figure 5-18, which states that transect locations are on Figure 2-6, but Transects 7 and 8 are not shown on Figure 2-6. The report shall include all transects on the figure, or identify their location in another figure.

36. (Section 5.3.2, p. 5-49): Regarding the sampling objective of determining whether vertical gradients in concentrations of dioxins and furans in pore water of the TCRA armored cap exist, the draft text states that "these data indicate the absence of vertical concentration gradients of dissolved 2,3,7,8-TCDD or 2,3,7,8-TCDF in the pore water within the TCRA armored cap." There is additional text stating that "these results indicate the TCRA armored cap is effective in eliminating any release of dioxins and furans associated with waste materials within the northern impoundments, and the TCRA armored cap is also effective in reducing or eliminating the potential release of dissolved-phase dioxins and furans from the northern impoundments into the surface water of the river." The text shall be modified to indicate that these results reflect conditions at the time of sampling and is not conclusive that releases of dioxins and furans associated with waste materials will not occur after the armored cap has been in place for some time. It is possible that if a vertical gradient does exist, it would be more apparent after any large pore spaces are filled with sediment fines.

37. (Section 5.4.1.2, p. 5-54): The interpretation of Figure 5-24 shall provide an explanation for the wide variation in octachlorinated dibenzo-p-dioxin (OCDD) content for the samples with significant TCDD. Additionally, the figure does not appear to show the black circles. The figure shall be clarified.

38. (Section 5.5.1, p. 5-70): The report states that 10^{-4} is an acceptable cancer risk. For any remediation, the EPA will select the relevant protective cancer risk level, between 10^{-4} and 10^{-6}, in the Record of Decision. The report shall include quantitative risk analyses for receptors with any cancer risk greater than 10^{-6}. The slope factor approach, in addition to the target hazard quotient approach, shall be reported, and PCL calculations based on 10^{-6} shall be included in the RI report.

39. (Section 5.5.2.5.1 p. 5-82): The report shall state definitively to what extent Transect 3 has been capped by the TCRA.

40. (Section 5.5.2.5.1, p. 5-82): In the last paragraph of this discussion, there is a statement that "concentrations of 2,3,7,8-TCDD in clam tissue from two of five samples directly adjacent to the upland sand separation area exceed a threshold of histological effects in individual female oysters." The text shall be modified to state a threshold of "histological effects related to impaired reproduction and larval survival" or simply "histological effects related to impaired reproduction."

41. (Section 5.5.2.5.5, p. 5-84): The summary shall acknowledge that the reptile risk assessment was a qualitative evaluation.

42. (Section 5.6.3, p. 5-90): The Fate and Transport Report estimates that some areas have net erosion and some areas have net deposition. While the isotope dating data are useful, the text of this section fails to provide a balanced description, noting that erosion occurs in some areas and that during high flow conditions and storm surges, different erosion and deposition patterns from those shown likely occur. The report shall be modified to reflect such limitations on the interpretation of the deposition data presented. Further, the report states that vertical profiles of cesium-137 and lead-210 produce a range of net sedimentation rates (NSRs) of 0.4 to 3 cm/year at six of the core locations. However, the cesium-137 data fails to provide any estimate of NSR in any of the eight cores. This statement shall be revised to reflect the fact that NSRs at six of the eight cores were based only on lead-210 data. The report shall discuss the uncertainty of model predictions in light of the data limitations.

43. (Section 5.6.5, p. 5-97): The report states that, overall, the calibration and validation of the fate and transport model demonstrate that the model is able to simulate the hydrodynamics within the study area with sufficient accuracy. The planned approach to the modeling effort was to collect river condition data during times of high flow conditions to improve the accuracy of the model calibration. However, there was little rainfall during the study period and mostly low-flow conditions in the river, so there were no significant high-flow conditions to measure. The report shall discuss the lack of data for high-flow conditions and how it may impact the accuracy and uncertainty of the model results, especially in light of increased sediment transport during high-flow conditions.

44. (Section 5.7.4.2, p. 5-108): The likelihood of actual pathway completion to pore water (sediment) or surface water is considered low because of the assumed low hydraulic conductivity of the waste. The absence of significant congener concentration in sample analyses of the top six inches of the TCRA "porewater" is interpreted to signify that there are no releases occurring

now. However, the TCRA does not comprise a complete impermeable barrier between the waste and the sediment/surface water at their interface. Long-term testing of "porewater" is required to insure that this pathway does not become a future conduit for transfer of contamination.

45. (Section 5.8, p. 5-110): The first sentence of the second paragraph shall be modified to remove the words, "or ecological" since the PCLs are derived for human health pathways only.

46. (Section 6.1, p. 6-3): The additional site historical information below shall be incorporated into the existing narrative for the purpose of supplementing the aerial photo interpretation. On September 13, 1965, McGinnes Industrial Maintenance Corporation took over the settled waste disposal from the previous operator (pg 1, TSDH, 1966). The "... older site on the south side of the Highway ..." was " ... used prior to McGinnes Corp. taking over the operation and appears to consist of a pond covering between 15 and 20 acres ..." (pg 2, TSDH, 1966). In 1966, the depth of water in parts of the south pond was reported to range between 3 to 5 feet (pg 3, TSDH, 1966). The southern waste pond was filled and taken out of service by 1966 and the western waste pond was filled by 1966.

47. (Section 6.1, p. 6-4): The report states that available historical aerial photographs were not possible to obtain due to the compressed schedule for the RI Report. The report shall clarify which aerial photographs are being referred to, their date and location covered, whether they are currently available, and the timeframe needed to obtain them.

48. (Section 6.1.1, p. 6-4): In the second paragraph, second line, "an" shall be changed to "a" before "historical".

49. (Section 6.1.4.2.1, p. 6-13): In the 1st and 2nd lines on page 6-13 the reference to "substances" and "materials" shall be changed to "wastes".

50. (Section 6.1.4.2.2, p. 6-13): On the 3rd line of 1st paragraph the "materials" reference shall be changed to "wastes".

51. (Section 6.2.2, p. 6-28): The reference in the text "Miller 2011" is missing the proper suffix for this reference and shall be corrected.

52. (Section 6.3.3, p. 6-41): In the next to last sentence in paragraph 2 the references to "materials" and "substances" shall be "waste" if referring to the 1997 TNRCC Agreed Order.

53. (Section 7.1, p. 7-3): The discussion states that implementation of the TCRA has eliminated the associated secondary transport mechanisms resulting from erosion due to the river flowing over the wastes and due to storm related sediment resuspension. The discussion continues that as a result of the TCRA, RAO 1 has been achieved for the northern impoundments. This discussion does not mention the apparent erosion of the armor rock on the west side of the TCRA in July 2012. Further, the TCRA is not the final long term remedy, which will be selected in the Record of Decision. The report recognize the erosion that occurred, and shall state that the TCRA is preventing release of dioxins and furans for the time being, and that the final remedy to achieve RAO 1 in the long term will be selected in the Record of Decision.

54. (References): The Reference section is missing a reference for ASTM D-5084, which shall be included.

55. (Table 4-3): The table shows in several instances a 0% detection frequency, yet minimum, maximum, and mean concentrations are provided. The table shall include a footnote to explain this.

56. (Figure 3-5): The Pleistocene Beaumont Formation is represented by two colors. The figure shall be clarified to explain the difference between the two areas/formations.

57. (Appendix D, Draft Baseline Ecological Risk Assessment for the Peninsula South of I-10): For invertivorous birds (killdeer as measurement receptor), the lowest-observed- adverse-effects level (LOAEL)-based hazard quotients for lead and zinc were greater than one. For lead, the central tendency (i.e., based on mean concentrations) LOAEL-based hazard quotient was two, and the reasonable maximum (i.e., based on 95% UCL concentrations) LOAEL-based hazard quotient was eight. For zinc, the central tendency LOAEL-based hazard quotient was one, and the reasonable maximum LOAEL-based hazard quotient was three. The BERA conclusions state that baseline risks to individual terrestrial invertivorous birds represented by the killdeer from exposure to lead and zinc are present, and risks to terrestrial bird populations from exposures to lead and zinc may be present. The discussion also cautions that the risk management approaches regarding these metals should consider a number of uncertainties (e.g., exposure estimates, bioavailability, toxicity under field conditions relative to potential toxicity in the laboratory, and actual tissue concentrations of food items). Based on probabilistic analyses of exposure and risk, the BERA also states that the probability that exposure to these metals will exceed the respective LOAEL is 88% for lead, and 68% for zinc. The uncertainties associated with these metals/exposure pathways are not unlike those typically outlined in any "desktop" ecological risk assessment where site-specific tissue data is not available. With this in mind, the spatial distribution of the elevated metals concentrations, site conditions, infrastructure, and maintenance activities (e.g., routine mowing) are also important risk management considerations and shall be reflected in this discussion.

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