

**ATTACHMENT 1**

**Response to Nevada Division of Environmental Protection Comments On the  
Conceptual Site Model, Former Montrose and Stauffer Facilities and  
Downgradient Areas to Las Vegas Wash, dated September 21, 2007  
NDEP Facility ID# H-000536 and H-000540**

*General Comment (April 21, 2008 letter): Please, note that "Comment noted" without an indication what action will be taken is not an acceptable response. For more details, please, see the January 11, 2008 "Advisement Regarding Format of Response-to Comments Letters" from the NDEP addressed to all BMI companies.*

**FINAL RESPONSE: This response to comments will:**

- 1. Indicate what action was taken for all responses.**
  - 2. If a response resulted in a change to the CSM, the location of the change within the document is provided (e.g. by page number, figure number or table number where the change has been made).**
- 
- 1. Executive Summary, general comment, please note that conclusions regarding specific site-related chemicals (SRCs) should not be made without documentation of data adequacy for the specific decision being made.*

**INITIAL RESPONSE (January 3, 2008): Comment noted. A high degree of confidence exists with the recent data because they have been collected in accordance with approved work plans, standard operating procedures, and a QAPP; subjected to a rigorous Quality Assurance/Quality Control Program; validated using industry standard practices; and thoroughly evaluated as part of this CSM. All validated data were submitted to the NDEP in Data Validation Summary Reports (DVSRs) which were reviewed and approved by the NDEP. The usability of the data for risk assessment purposes will be evaluated during the risk assessment process and submitted to the NDEP in tandem with the risk assessment document.**

*NDEP response (Specific Comment 1, April 21, 2008 letter): The Data Usability (DU) included in the CSM is clearly not adequate in that it does not meet DU criteria (EPA, 1992), since it is "thoroughly evaluated as part of the CSM". Also, if "usability of the data for risk assessment purposes will be evaluated during the risk assessment process and submitted to the NDEP in tandem with the risk assessment document", then the statement that the data is usable for risk assessment must be removed from the CSM document (CSM Report, page 131, last paragraph on page).*

**FINAL RESPONSE: Per the NDEP Specific Comment 30 from the April 21, 2008 letter, Section 4.5 (Data Usability Assessment) of the CSM has been removed from the text (page 147). Separate data usability documents will be submitted for the site.**

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2. *Figure ES-2. CAPD Pond 6a is identified as "Inactive". This is contradicted on page 26, top, where it is stated that Pond 6a is currently receiving process recyclable waters and neutralized wastewaters. Please correct Figure ES-2 and re-submit.*

**FINAL RESPONSE:** Figures ES-2 and 2-2 will be modified; CAPD Pond 6A is an active pond.

3. *Figure ES-3 (and Figure 7-1). Please correct these figures (and re-submit) to reflect the following:*
- a. *The occurrence of both LNAPLs and DNAPLs were excluded from the exposure pathways figure(s). NAPLs should be considered a secondary source. Please include NAPLs in these figures*

**FINAL RESPONSE:** Comment noted. Figure ES-3 was modified to include NAPL as a potential secondary source of selected SRCs.

- b. *Groundwater is shown as an "uncertain" pathway. Please note that NDEP considers groundwater a pathway.*

**FINAL RESPONSE:** Figures ES-3 and Figure 7-1, associated footnotes and text (Executive Summary, page ES-8 and Section 7.0, pages 192, 194, 195 and 196) were modified to recognize the NDEP's position that groundwater in the downgradient area could be considered a drinking water resource in the future, though it is not currently used as such. Groundwater at the site will continue to be treated as a non-drinking water source now, or in the future with appropriate institutional controls.

- c. *Notes #3 and #5: the Companies state "Groundwater under and near the site is not and will not be used for industrial purposes, domestic consumption or irrigation." This comment ignores Nevada's non-degradation policy and ecological impacts resulting from groundwater discharge to Las Vegas Wash. The NDEP does not concur with footnote 3 or footnote 5 per the NDEP's comment above regarding the usability of groundwater. This is a global comment and will not be repeated for every instance in the subject document.*

**FINAL RESPONSE:** The figure was modified to recognize the NDEP's position that groundwater in the downgradient area could be considered a drinking water resource in the future, though it is not currently used as such. Groundwater at the site will continue to be

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treated as a non-drinking water source now, or in the future with appropriate institutional controls. In addition, the Companies recognize that groundwater discharge to the Las Vegas Wash approximately 3 miles downgradient of the Site is a potentially complete pathway. Figures ES-3 and Figure 7-1 and accompanying text and footnotes (Executive Summary, page ES-8 and Section 7.0, pages 192, 194, 195 and 196) were revised accordingly.

- d. *Note #6: the Companies state “There is no habitat in the Study Site, therefore no ecological impacts are considered onsite. There is, however, habitat in the area adjacent to the Las Vegas Wash where relevant exposures are considered. However, this habitat is exclusively terrestrial as the only standing water is extremely ephemeral.” This comment ignores groundwater discharge to Las Vegas Wash. Also, the Seep Area (often referred to as the Kerr-McGee Seep) in the main paleochannel is not ephemeral. As the City of Henderson decreases discharge to the Rapid Infiltration Basins and Birding Preserve Ponds, it is acknowledged this may change. The NDEP does not concur with footnote 6 because the NDEP believes that sufficient information exists to show that contaminants originating from the Site have the ability to interact with the Las Vegas Wash and biota contained within the Las Vegas Wash and associated wetlands.*

**INITIAL RESPONSE (January 3, 2008):** This comment is inconsistent with the NDEP position outlined in previous meetings and communications that the Wash is outside of the study area for this CSM. See the May 23, 2007 CSM meeting and Final Meeting Minutes from the NDEP; “Ecological risk assessment will be limited in scope with focus on downgradient areas but not the Las Vegas Wash.” The CSM was written with the understanding that the Kerr-McGee seep, its associated wetlands and the Las Vegas Wash are outside of the study area considered in this CSM. However, as discussed in during the meeting on February 27, 2008, the Companies will revise the Figure and associated text to note that groundwater discharge to Las Vegas Wash and associated wetlands is a potentially complete pathway. The footnotes on Figures ES-3 and 7-1, as well as accompanying text, will be modified.

*NDEP response (Specific Comment 2, April 21, 2008 letter):\_NDEP acknowledges that this is not consistent with the referenced meeting notes. None-the-less, the ecological risk needs to be assessed for the potentially contaminated groundwater that discharges to the Las Vegas Wash.*

**FINAL RESPONSE:** Figures ES-3 and 7-1, Section 7.0 (page 192) and Section 7.1.2 (pages 195 and 196) of the text have been revised to note that groundwater discharge to Las Vegas Wash is a potentially complete pathway.

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- e. *The sources and release mechanisms identified in this figure are very general. As such, there is little ability to support evaluation of data gaps at specific sources/source areas. Chemicals and release mechanisms should be characterized and assessed in relation to the specific source, or groups of similar source types in order to focus the number of sample locations and depths. Please note that if the source areas within the various study areas have differences it will be necessary to evaluate each source area independently.*

**INITIAL RESPONSE:** Comment noted. Per discussion with NDEP during the meeting of February 27, 2008, the Companies recognize that future investigations and characterization in support of risk assessment activities and Remedial Alternative Studies (RASs) will be conducted on a specific source or group of similar source types.

*NDEP response (Specific Comment 3, April 21, 2008 letter): Please note that this means that a separate CSM must be prepared for each source area or group of source areas.*

**FINAL RESPONSE:** The Companies recognize that separate CSMs must be prepared for each source area or group of source areas.

- f. *A footnote should be added to the figure to define the depth intervals for surface and subsurface soil.*

**INITIAL RESPONSE:** The depth of soil that is considered surface or subsurface will vary depending upon the exposure scenario being evaluated. The specifics of the depths to be evaluated for each pathway will be outlined in the risk assessment work plans. A footnote that explains this will be added to the figure.

*NDEP response (Specific Comment 4, April 21, 2008 letter): Please ensure that the HRA methodology is consistent with USEPA guidance (USEPA, 2002) with regards to the soil contact intervals for various receptors.*

**FINAL RESPONSE:** The soil contact intervals for various receptors will be consistent with USEPA guidance (USEPA, 2002).

- g. *Please provide rationale for splitting out "trench air" as an exposure medium (e.g. is there a unique methodology for estimation of exposure point concentrations [EPCs]?).*

**INITIAL RESPONSE:** Trench air refers to air that is present in deep excavations. Chemical concentrations in trench air will differ from those in both ambient and indoor air, which are

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also noted on the figure. There are specific methodologies for estimating chemical concentrations in trench air that take into account physical characteristics of the trench. The trench air model is discussed in USEPA's *Soil Screening Guidance: Technical Background Document (1996)* and will be discussed in the risk assessment work plans and reports.

*NDEP response (Specific Comment 5, April 21, 2008 letter): NDEP is not familiar with the trench model described. Please provide the page number of the 1996 Soil Screening Guidance (USEPA, 1996) where it is discussed.*

**FINAL RESPONSE:** As per comment #6, in the April 21, 2008 letter, the trench model will be removed from the discussion. The construction worker/excavation worker will be considered one and the same using exposure parameters and methodologies specified in *USEPA, 2002 Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites*.

- h. As per USEPA guidance (USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Solid Waste and Emergency Response, December. <http://www.epa.gov/superfund/resources/soil/index.htm>), the excavation worker and the construction worker are one and the same and therefore should be combined.*

**INITIAL RESPONSE:** Comment noted. USEPA guidance notes that the depth of soil potentially contacted by outdoor and construction workers are the same. The guidance does not make recommendations regarding the frequency and duration of exposure for these two exposure groups. We proposed to keep them as distinct groups to reflect potentially different exposure scenarios. The outdoor worker is defined as a long-term, full time employee who spends most of the day working outdoors. The construction worker is expected to participate in shorter-term, intermittent work. This information will be discussed in any risk assessment workplan submitted to NDEP for the site.

*NDEP response (Specific Comment 6, April 21, 2008 letter): USEPA guidance specifies that the chronic outdoor worker receptor is exposed to soil from "depths of zero to two feet" (USEPA, 2002, p. 4-3). USEPA-recommended exposure parameters (including frequency and duration of exposure) for this receptor (as well as for the chronic indoor worker) are provided in Exhibit 4-1, p. 4-4 of the guidance. The guidance specifies that the short-term construction worker receptor activities "typically involve substantial on-site exposures to surface and subsurface soils." (p. 5-2). USEPA-recommended exposure parameters for this receptor, provided in Exhibit 5-1, p. 5-3, are not the same as those for the chronic worker receptors. For purposes of the HRA, the following worker receptors should be evaluated as per the exposure parameters contained in USEPA, 2002:*

- *Chronic indoor worker receptor (see USEPA, 2002, Section 4 and Exhibit 4-1)*
- *Chronic outdoor worker receptor (see USEPA, 2002, Section 4 and Exhibit 4-1)*

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- *Subchronic (short-term) construction worker (see USEPA, 2002, Section 5 and Exhibit 5-1)*

*There is no need to evaluate an excavation worker separately from the construction worker. They are considered to be the same as per USEPA (2002) guidance.*

**FINAL RESPONSE:** We will consider the construction worker and excavation worker one in the same, as per EPA's 2002 Supplemental Soil Screening Guidance. The risk assessment for the indoor worker, outdoor worker, and construction worker will adopt exposure parameters specified in Exhibits 4-1 and 5-1 mentioned above.

- i. Ingestion of soil (all COPCs) and dermal contact (all COPCs other than VOCs) are applicable pathways for the indoor worker (USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Solid Waste and Emergency Response; <http://www.epa.gov/superfund/resources/soil/index.htm>, and Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Office of Emergency and Remedial Response. EPA/540/R/99/005, July. <http://www.epa.gov/oswer/riskassessment/ragse/index.htm>)*

**INITIAL RESPONSE:** Comment noted. Our thoughts were that the outdoor worker would be an appropriate surrogate receptor for contact with outdoor soil. Nevertheless, the figure will be revised to include this pathway for the indoor worker also.

*NDEP response (Specific Comment 7, April 21, 2008 letter): Please note that the Supplemental Soil Screening Guidance (EPA, 2002) assumptions regarding the indoor and outdoor worker are different for the ingestion of soil pathway.*

**FINAL RESPONSE:** We will adopt exposure parameters specified in EPA 2002 guidance for the indoor and outdoor workers contact with outdoor soil. EPA assumes an exposure frequency of 250 days/year for the indoor worker and 225 days/ year for the outdoor worker. The ingestion rate for soil is 50 mg/kg for indoor workers and 100 mg/kg for outdoor workers. These differentiations will be described for these two receptor groups.

- j. On-site surface soil data should be used to support the elimination of exposure pathways associated with the direct contact with off-site soil.*

**FINAL RESPONSE:** Comment noted. The Companies will evaluate the on-site surface soil data and will use the data to eliminate the off-site soil direct contact pathway where possible per NDEP's suggestion.

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- k. *Off-site receptors can be exposed to on-site subsurface soil via transport of dust during construction/excavation activities*

**INITIAL RESPONSE:** We do not believe this to be an important contributor to off-site dust transport compared to the other dust sources. We will, however, add this to the figure.

*NDEP response (Specific Comment 8, April 21, 2008 letter): NDEP agrees that the pathway should be included in the CSM at this time. Site data should be employed as the basis for eliminating the pathway in the health risk assessment (HRA) based on insignificance.*

**FINAL RESPONSE:** We are in agreement with the proposed approach.

4. *Page ES-4 first ¶ and elsewhere in the report. Please note that the NDEP does not concur with the statement that “Water in the vicinity of the Site is not considered a potential source of drinking water”. NDEP considers all groundwater in the State to be a source of drinking water.*

**FINAL RESPONSE:** Comment noted. See response to 3c.

5. *Page ES-5, Site Related Chemicals in groundwater (GW), 1<sup>st</sup> sentence. The NDEP notes that total dissolved solids (TDS), arsenic, and perchlorate are examples of chemicals that are omitted from this sentence. This sentence should have either referenced the list of SRCs (Table 2-1), or included the combined SRC list for the Site.*

**INITIAL RESPONSE:** Comment noted. Table 2-1 will be referenced at the end of the first sentence. In addition, arsenic was inadvertently omitted from the sentence and it will be revised to include arsenic. TDS and perchlorate were not added to the list in this sentence because, currently, there are no primary MCLs for TDS and perchlorate. In addition, perchlorate is not on the combined SRC list (Table 2-1).

*NDEP response (Specific Comment 9, April 21, 2008 letter): Please include a clarification that SRCs also include arsenic and TDS (even though there are no MCLs for TDS). The NDEP suggests that the beneficial use standard for the Las Vegas Wash (1,900 milligrams per liter) be utilized until a site-specific background concentration is derived. Regarding perchlorate, please include a clarification that, although perchlorate is not related to the operations at the site, it is being monitored*

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*because it is present in the ground water. In addition, the State of Nevada utilizes a provisional action level of 18 micrograms per liter for perchlorate.*

**FINAL RESPONSE:** The Executive Summary (page ES-5) has been revised to include references to Table 2-1, arsenic, TDS, and perchlorate and clarifications on compound inclusion in the SRC list.

6. *Page ES-5, Site Related Chemicals in GW, last ¶. As noted above, the NDEP notes that major contaminants, for example TDS and arsenic, are omitted from the first sentence. It is also noted that arsenic and TDS have also been detected in the second water-bearing zone, which in the CSM is referred to as “fine-grained Upper Muddy Creek Formation, UMCf”.*

**INITIAL RESPONSE:** Comment noted. See above response. The sentence will be revised to include arsenic and the detection of these compounds in the UMCf will be included in the appropriate sections of the CSM.

*NDEP response (Specific Comment 10, April 21, 2008 letter): Please include a clarification for TDS*

**FINAL RESPONSE:** The Executive Summary (page ES-6) has been revised to include arsenic and TDS. TDS and all compounds detected above MCLs in UMCf groundwater are discussed in the groundwater subsections of Section 4.3.

7. *Page ES-5, Site Related Chemicals in GW. This section should have included a discussion of groundwater conditions in the third water-bearing zone, which in the CSM is referred to as “coarse-grained Upper Muddy Creek Formation, UMCc”. The NDEP notes that several SRCs have been observed in the third water bearing zone at levels above applicable groundwater metrics, (i.e., chlorobenzene, arsenic, and TDS) as reported in the quarterly “Groundwater Monitoring Data Submittals”.*

**FINAL RESPONSE:** The Executive Summary (page ES-6) has been revised to discuss the detection of compounds in UMCc groundwater at concentrations above MCLs. TDS was not included because it was not detected above the State of Nevada beneficial use standard for the Las Vegas Wash of 1,900 milligrams per liter.

8. *Page ES-8, Data Gaps, consistent with USEPA guidance, the CSM and data gaps should be based on distinct sources rather than SRCs.*

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**INITIAL RESPONSE:** See response to comment 3e.

*NDEP response (Specific Comment 11, April 21, 2008 letter): Please note that this means that a separate CSM must be prepared for each source area or group of sub-areas.*

**FINAL RESPONSE:** The Companies recognize that separate CSMs must be prepared for each source area or group of source areas.

9. *Page 1, Section 1, The NDEP acceptance status of the previous Deliverables should be documented throughout the CSM.*

**INITIAL RESPONSE:** In future NDEP deliverables where previous documents are referenced, the status of NDEP acceptance of the deliverable will also be noted.

*NDEP response (Specific Comment 12, April 21, 2008 letter): Please include in the CSM the status of the NDEP acceptance of the referenced documents.*

**FINAL RESPONSE:** The status of NDEP acceptance of documents has been included in Section 10.0 (pages 206 to 212).

10. *Page 3, one of the stated objectives of the CSM is to “Delineate the nature and extent of site-related chemicals (SRCs) in the soil and groundwater above background levels.” It should be noted that background data does not exist for deeper soils (greater than 10’ below ground surface (fbgs) or for groundwater. These are data gaps.*

**INITIAL RESPONSE:** The Companies will evaluate deeper soil and groundwater background analyses reported by others (BRC, Tronox or Timet) and from areas not impacted by site operations for the purpose of developing deeper soil and groundwater background ranges.

*NDEP response (Specific Comment 13, April 21, 2008 letter): Please include this issue in the list of data gaps in the CSM.*

**FINAL RESPONSE:** The evaluation of deeper soil and groundwater background analyses has been added as a potential data gap to Section 9.0 (pages 204 to 205).

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11. *Page 3, Section 1.2. Please provide clear definitions for terms such as "Site", "downgradient area", "study area" and "facility".*

**FINAL RESPONSE:** In future documents, definitions will be provided for these terms. "Site" refers to the properties formerly occupied by the Montrose and Stauffer facilities. "Downgradient area" refers to areas downgradient of these former facilities. "Study area" refers to the CSM study boundary as presented in Figure 2-1. The term "facility" is typically preceded by a particular location or physical object such as a former site feature. For example, wording such as "the former Montrose facility" is referring to the actual former Montrose plant site.

12. *Section 2.1, starting on page 7, please note that is not possible or practical for the NDEP to verify and concur with the historical information presented in this Section. Absence of NDEP comments on this Section should not be construed as concurrence.*

**FINAL RESPONSE:** Comment noted. Any such inference of concurrence is retracted.

13. *Section 2.1.2, the NDEP has the following comments:*

- a. *Page 9 and elsewhere: Pioneer Chlor Alkali had since been acquired by Olin Corporation. This is a global change to be addressed in future submittals.*

**FINAL RESPONSE:** All future deliverables and correspondence to NDEP will reflect this change in ownership.

- b. *This Section does not include any mention of materials that have been disposed of in the "BMI Dump" located south of the Site. Please explain.*

**INITIAL RESPONSE:** The Companies have conducted preliminary research (including a review of available NDEP files) related to the area commonly referred to as a "BMI Dump" as potentially identified by a EPA aerial reconnaissance review in the general area of what is now the Fiesta Casino. This research was narrowly focused on the issue of whether or not the area may be a possible source of arsenic in groundwater. The preliminary conclusion, based on arsenic concentrations in alluvial groundwater at the southern boundary of the Site and the review of the available data, indicated that it was not a source of upgradient arsenic to the Site. During this review, the Companies did not discover any other information related

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to what material may have been disposed, if any, in this area. No mention was made of this area in the CSM as it does not appear relevant to conditions at the Site.

*NDEP response (Specific Comment 14, April 21, 2008 letter): Please note that an arsenic-related soil clean up was conducted in this area. The Companies need to conduct a more thorough file review. In addition, Section 2.0 of the BMI Closure Plan may be a valuable resource. Please include this discussion in the CSM.*

**FINAL RESPONSE:** As indicated in response to NDEP's previous comment, the Companies have reviewed the NDEP files. In addition, per NDEP's Specific Comment 14 in the April 21, 2008 letter, the Companies have reviewed the BMI Closure Plan for information regarding arsenic disposal or arsenic-related clean up in the area referred to as the "BMI Dump". No information regarding any arsenic-related cleanup was indicated by these additional reviews.

14.. Pages 11 through 13, Section 2.1.3, the NDEP has the following comments:

- a. *The Companies conclude that, with regard to LOU study items 7 through 12, that "the emissions sources posed no significant near-field depositional potential." Since the NDEP has never responded to the February 21, 2003 document, this is not a valid conclusion. This is a data gap.*

**INITIAL RESPONSE:** The statement in the CSM was not intended to indicate that NDEP had reviewed the report and concurs with the conclusions in the report. If the NDEP disagrees with the report or has comments on the report and conclusions the Companies will review NDEP's comments on this report and respond to the comments and work with NDEP to resolve issues.

*NDEP response (Specific Comment 15, April 21, 2008 letter): NDEP does not concur with this response. Risks associated with LOUs #7 through #12 will have to be evaluated. The NDEP will not review the February 21, 2003 report and this information should have been discussed in the CSM.*

**FINAL RESPONSE:** New text was added to the final CSM in Section 4.2 (pages 79 to 82) and includes a more comprehensive summary of the Earth Tech 2003 report (included in its entirety in Appendix F of the CSM draft and final documents). Risks associated with the LOUs will be evaluated during the risk assessment process.

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- b. *This Section should have a cross-reference to a Figure that identifies all of the LOU areas, as well as any source areas identified that are not LOUs. Please identify this Figure location or provide this Figure as an addendum*

**FINAL RESPONSE:** The Companies have added a cross reference tables to Figures ES-2 and 2-2 to allow easy comparison of the LOUs to the Site Assessment Areas.

15. *Section 2.1.3.1, page 13, it is noted that this Section does not discuss the disposition of the Montrose Plant Site. It is the understanding of the NDEP that records do not exist to determine where these materials were disposed of. Please explain.*

**FINAL RESPONSE:** NDEP's understanding is correct and the text in Section 2.1.3.1 (pages 13 to 14) was revised to indicate:

**"Production of organic chemicals at the facility ceased in 1983 and this portion of the facility was dismantled in late 1983 and early 1984. According to available records, demolition debris generated by the dismantlement which, based on visual inspection did not appear to be contaminated and which was from areas of the plant that did not handle hazardous materials, was believed to have been disposed at an area located across Boulder Highway and just south of Timet's Pabco Road ponds commonly used for BMI plant demolition materials. This area was unregulated and the approximate location of this area is depicted on Figure 2-1. Recent visual inspections of this area have provided no evidence of the exact location of this area. Montrose also interviewed persons, including former employees, who were unable to identify the area's location. All demolition debris which, based on visual inspection, did appear to be contaminated, as well as all material from any area where hazardous materials or waste were processed or generated, and approximately one foot of underlying soil were disposed of at the U.S. Ecology licensed hazardous waste disposal facility in Beatty Nevada."**

16. *Page 15. A discussion of CAPD Pond 6a and its status is missing from Section 2.1.3.2.*

**FINAL RESPONSE:** Section 2.1.3.2 pertains to the Closed Ponds Area on the Former Montrose Facility. CAPD Pond 6a is not located in the Closed Ponds Area; it is located in the Former Stauffer Facility and is discussed in Section 2.1.4.9 of the final CSM. No revisions were made in response to this comment.

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17. *Section 2.2, page 29, please note that this would be an appropriate location to discuss LOU 24.*

**INITIAL RESPONSE:** LOU 24 is not in the CSM area thus it is not included in the CSM report and LOU 24 will be handled in a separate document.

*NDEP response (Specific Comment 16, April 21, 2008 letter): This response appears to contradict the response provided for Comment #15. Please, note that Montrose LOU #24 is the Montrose Demolition Debris Disposal Area. Please, reconcile responses to CSM Comment #15 and #17, and include a discussion in the CSM of LOU #24, including an explanation that the Companies intend to handle LOU #24 in a separate document. Please show the location of LOU #24 on a map.*

**FINAL RESPONSE:** Comments 15 and 17 have been reconciled. A discussion of the demolition debris disposal area is now included in Sections 2.1.3.1 (pages 13 to 14) and 2.2.4 (pages 34 to 35). This area is now depicted on Figure 2-1.

18. *Page 32, 2<sup>nd</sup> full ¶. References to the “study area” are incorrect. The area in question appears to be the area north of the GWTS, and to the Las Vegas Wash, also known as the “downgradient area”.*

**FINAL RESPONSE:** The “study area” referenced in this section is the Downgradient Study area. This quote is from the referenced GeoSyntec Report on the downgradient study area. The text in the referenced paragraph in Section 2.2.3 has been revised as follows (italics provided to indicate the edit made): “....anywhere in the *downgradient* study area...” (page 33).

19. *Page 33, the fifth bullet on the page. The sentence should have read (emphasis added): “Carbon tetrachloride was found in the downgradient area wells within a range...”*

**FINAL RESPONSE:** The bulleted statements for arsenic, fluoride, nitrate-N, carbon tetrachloride, PCE, and chloroform that appear in Section 2.2.3 (pages 33 to 34) were all edited to insert the word “wells” after the phrase “downgradient area”.

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20. *Section 2.3.1.6, page 36, please note that a discussion should be included that covers:*

- a. *a trend of increasing chloroform concentration that has been observed in the downgradient monitoring well MW-2 , from ~3,000 ppb in 1994 to ~100,000 ppb in 2006;*

**INITIAL RESPONSE:** Section 2.3 of the report is intended to provide a summary of environmental investigations conducted at the former Montrose facility to date. A detailed discussion regarding chloroform concentrations in groundwater is provided in section 4.3.10.4. The increase in chloroform concentrations downgradient of the Closed Ponds Area (CPA) has been noted and additional investigations and sampling have been conducted and reported in the Converse Biannual Reports.

*NDEP response (Specific Comment 17, April 21, 2008 letter): Although the trend of chloroform concentrations increase in the wells downgradient of the Montrose Closed Ponds had been observed by RCRA compliance monitoring for the ponds and not by conducting formal environmental investigations, it should be referenced in the CSM because it is indicative of environmental conditions at the Site. Please, include this discussion in the CSM.*

**FINAL RESPONSE:** A discussion of chloroform concentration trends in samples collected from MW-2 and MW-3 has been added to Section 2.3.1.6 (page 37).

- b. *the detection monitoring program continues to demonstrate that Montrose Closed Ponds Area appears to be a source of contaminants in the groundwater, including (but not limited to): chloroform, chlorobenzene, benzene, 1,2- dichlorobenzene, and 1,4- dichlorobenzene;*

**INITIAL RESPONSE:** See response to comment 20a. The CPA has been identified as a potential source area and additional investigations are being conducted. This area will be evaluated in a Risk Assessment and RAS.

*NDEP response (Specific Comment 18, April 21, 2008 letter): Please, include in the CSM a discussion that the detection monitoring program continues to demonstrate that Montrose Closed Ponds Area appears to be a source of contaminants in the groundwater, including (but not limited to): chloroform, chlorobenzene, benzene, 1,2- dichlorobenzene, and 1,4- dichlorobenzene. Please, include in the CSM a discussion that this area will be evaluated in a Risk Assessment and RAS.*

**FINAL RESPONSE:** A paragraph has been added in Section 2.3.1.6 (page 37) to indicate that 1) “monitoring data indicate that the Montrose Closed Ponds Area is a potential source of VOCs to groundwater”; and 2) the Montrose Closed Ponds Area “will be included in future development of remedial alternative studies...”.

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- c. *contaminants have been observed in the downgradient monitoring wells at concentrations indicative of the potential presence of free phase liquids that may have originated from the Montrose Closed Ponds Area.*

**INITIAL RESPONSE:** See response to comment 20b. Additional investigations on the extent of non-aqueous phase liquids (NAPL) are planned and are being conducted downgradient of the CPA.

*NDEP response (Specific Comment 19, April 21, 2008 letter): Please, see NDEP response to comments above. Please, include in the CSM a discussion that contaminants have been observed in the downgradient monitoring wells at concentrations indicative of the potential presence of free phase liquids that may have originated from the Montrose Closed Ponds Area.*

**FINAL RESPONSE:** A discussion of the contaminants observed downgradient of the Montrose Closed Ponds area had been included in Section 2.3.1.6 (page 37).

21. *Section 2.3.3.3, last sentence. Please note that the NDEP does not concur that overlapping cones of depression have been demonstrated for all of the groundwater treatment system (GWTS) extraction wells in the referenced document, or in any other document.*

**INITIAL RESPONSE:** This issue was recognized in the GWTS testing report and an additional well has been recommended. The Companies are in the process of implementing Work Plans to address this issue.

*NDEP response (Specific Comment 20, April 21, 2008 letter): Please, include in the CSM a discussion about this subject.*

**FINAL RESPONSE:** A text insert was added in Section 2.3.3.3 (page 45) to indicate that the testing results indicated that “there were areas in the central part of the wellfield where full capture was uncertain”. Also on this same page, text was added to indicate NDEP does not concur on the issue of overlapping cones of depression: “NDEP has stated that it does not believe that overlapping cones of depression have been demonstrated in the GWTS area.”

22. *Page 61, 2<sup>nd</sup> full paragraph. The NDEP does not concur that sufficient information is available about the nature of the deeper water bearing zones to assert that laterally extensive layers of*

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*sediments are, or are not, present. The NDEP considers this assertion a weakness of the site model as presented, especially because it is perpetuated throughout the text and figures, and not identified as a data gap in Chapter 9. Also, please see the comment for Figure 3-10, below.*

**INITIAL RESPONSE:** Comment noted. Per discussions with the NDEP during meeting of February 27, 2008, the Companies recognize that there are differences in nomenclature and definition of the alluvial aquifer and the various portions of the Muddy Creek Formation. The Companies will review the information provided by NDEP regarding a standardized nomenclature and conceptual model of the alluvial aquifer and the UMC for use in future reports.

The Companies also recognize that additional investigations of the UMCf are necessary. Several workplans and field efforts have been submitted that will gather information regarding the UMCf. Examples of this proposed work includes the additional DNAPL Reconnaissance Borings and the investigation of SRCs in the GTWS area. These investigations will gather data regarding the nature of the UMCf and the extent of layering of the sediments.

The Companies believe that no data gap exists with regard to the UMCc on the site and no work is warranted because elevated concentrations of SRCs have not been detected in soil or groundwater at these depths and the fact that an upward vertical gradient in the groundwater system exists and retards downward movement of SRCs. The Companies recognize that additional investigations of the deeper portions of the UMC are proposed by others in the area and will review the information as it becomes available and modify the conceptual site model if necessary.

*NDEP response (Specific Comment 20, April 21, 2008 letter): NDEP's comment has little if anything to do with nomenclature. The question that needs to be addressed is the Data Gap regarding exploration of and mapping of deeper water bearing zones. The NDEP does not concur with the assertion that "no data gap exists with regard to the UMCc on the site and no work is warranted because elevated concentrations of SRCs have not been detected in soil or groundwater at these depths and the fact that an upward vertical gradient in the groundwater system exists and retards downward movement of SRCs". Considering that DNAPLs are known to be present at the Site, and that there is no known geologic feature that would prevent DNAPLs from potentially reaching the UMCc, there is a need to establish the baseline ground water quality in the UMCc, which would then allow in the future for monitoring of ground water conditions against the established baseline. Please, include this discussion in the CSM, and add the unknown baseline water quality in the UMCc to the list of data gaps in the CSM. Regarding the presence of an upward pressure gradient, it will have to be further evaluated in the RAS for groundwater as no information has been presented to demonstrate that this gradient is sufficient to retard the transport of DNAPLs or groundwater with high concentrations of TDS.*

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**FINAL RESPONSE:** The Companies believe that the existing data provides baseline water quality data for the UMCc (newly added Figure 4-6B; original Figure 4-6 has been renamed as Figure 4-6A) and that the existing monitor well network is sufficient to evaluate the potential impact of DNAPL on the UMCc. Multiple groundwater samples have been collected from existing UMCc monitor wells MW-8 and the TR-series wells completed in the UMCc and analytical data indicate that the UMCc groundwater does not contain elevated concentrations of SRCs. Additionally, monitor well MW-8 is located near MC-MW-10 and in the area where the preponderance of evidence indicates that DNAPL exists in the UMCf at this location, i.e., within the area where groundwater in the UMCf contains the highest concentrations of VOCs in the entire study area (Figure 4-44). Thus, MW-8 is located in the area where DNAPL concentrations are most likely to impact UMCc groundwater, yet elevated concentrations of VOCs have not been detected at this well. However, the Companies recognize that additional information is needed to demonstrate that the upward vertical gradient that has been identified in the former operations area exists in the vicinity of the GWTS and additional investigations in the UMC formation are planned for that area. Thus, the upward vertical gradient issue has been added to the list of data gaps in Section 9.0 that needs to be addressed (page 205). In addition, as the new data from these investigations become available the Conceptual Site Model will be updated as appropriate in future documents. It is also identified as a data gap issue in the Site Wide Groundwater RAS workplan.

23. *Page 61, 2<sup>nd</sup> full paragraph. The NDEP concurs that there is no evidence of hydraulic separation between the groundwater in the alluvial aquifer and various depth zones within the Upper Creek Formation. Even though the Upper Muddy Creek Formation exhibits the hydraulic characteristics of an aquitard, hydraulic communication exists between it and the alluvial aquifer (page 68, 2<sup>nd</sup> ¶), and there is an upward vertical groundwater gradient between the second and third water-bearing zone and alluvial aquifer (page 69, last ¶). However, the NDEP does not see a need to discontinue the use of the traditional terminology (i.e., the second and third water-bearing zone) used so far in all project documents, especially because the new terminology introduced in the CSM is confusing and not intuitively convenient (i.e., UMCf and UMCc).*

**INITIAL RESPONSE:** Per discussions with the NDEP during the meeting of February 27, 2008, the Companies recognize that there are differences in nomenclature and definition of the alluvial aquifer and the various portions of the Muddy Creek Formation. The Companies will review the information provided by NDEP regarding a standardized nomenclature and conceptual model of the alluvial aquifer and the UMC for use in future reports. The nomenclature used in the CSM is consistent with the terminology adopted by the US Geological Survey, Las Vegas Valley Water District, and others for describing the geology

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and hydrogeologic framework of the localized area and regional Las Vegas Groundwater Basin.

*NDEP response (Specific Comment 22, April 21, 2008 letter): Please include in the CSM a reference to the previously used terminology.*

**FINAL RESPONSE:** Cross references between the previously used terminology and the new terminology were already provided in the draft CSM in Section 3.5.3 (first sentence, page 68) and in Section 3.5.4 (second sentence, page 70). In addition, on June 26, 2008 the Companies provided input to NDEP regarding NDEP's proposed stratigraphic nomenclature that will be used for future documents. The proposed nomenclature is substantially the same as the hydrostratigraphic descriptions used in the CSM.

24. *Page 72, Section 4.1, please note that "background concentrations" were not established; a range of background concentrations was established.*

**FINAL RESPONSE:** Future documents will describe the range in background concentrations.

25. *Page 72, Section 4.1, documentation should be provided that the datasets used in the 2007 BRC/TIMET background analysis meet data usability criteria for that application (perhaps this could be documented by reference). Additionally, the statistical analysis that is used to support conclusions regarding exceedances of background should be provided.*

**INITIAL RESPONSE:** Comment noted. The data and data usability criteria will be included by reference from the BRC/Timet report. In addition a description of the statistical analytical method used to evaluate exceedances of background will be included.

*NDEP response (Specific Comment 23, April 21, 2008 letter): This can only be done if TIMET's data usability evaluation meets NDEP/EPA criteria.*

**FINAL RESPONSE:** A new reference was added to a new reference was added to Section 10.0 References Cited (page 212) to provide a full bibliographic reference to Timet (2007a), which is the source document for the CSM description of the background soils analysis. In Timet (2007a) it is indicated that datasets in the background analysis met data usability criteria. A new paragraph was added to Section 4.1 (page 74) to indicate data were useable and to provide information regarding statistical analyses performed on the background data set that are included in Timet (2007a).

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26. *Page 73, Section 4.2, 1<sup>st</sup> full paragraph on page. "In addition, based on a risk assessment, CTEH estimated that the excess lifetime cancer risk from exposure to alpha- and gamma-BHC was within acceptable EPA limits." Specifically what acceptable EPA limits are referred to here?*

**INITIAL RESPONSE:** The statement refers to USEPA's acceptable risk range for excess lifetime cancer risk of 1E-06 to 1E-04.

*NDEP response (Specific Comment 24, April 21, 2008 letter): The NDEP is aware of the EPA excess cancer risk range; however, the NDEP needs more information about the actual risk assessment to accept it within the CSM document. Please, discuss this in the CSM.*

**FINAL RESPONSE:** An expanded discussion of the investigation performed and results of the CTEH risk assessment. This discussion provides information regarding the findings of the CTEH investigation, CTEH's risk calculations, and the "acceptable EPA limits" assumed in the CTEH report. The expanded discussion replaces the previous text in the draft report in Section 4.2 (pages 75 to 79).

27. *Pages 72 through 74: missing from this Section is a discussion of windblown asbestos fibers. Asbestos is a known site-related chemical which has been detected throughout the BMI Complex. This issue is a data gap.*

**INITIAL RESPONSE:** In the draft Risk Assessment Work Plan recently submitted to NDEP for review, asbestos was included as an SRC and the plan included a proposal to evaluate inhalation exposures to airborne fibers.

*NDEP response (Specific Comment 25, April 21, 2008 letter): Please discuss this in the CSM.*

**FINAL RESPONSE:** Section 4.2 (page 79) was revised to include the following text: "A risk assessment workplan was recently submitted for Stauffer (Integral, 2008) that includes an evaluation of exposure to windblown particulates, including the SRC of asbestos. A tiered modeling approach is proposed to evaluate windborne particulates generated by wind erosion and construction activities." Additionally a new reference was added to Section 10.0 References Cited (page 209) to include a full bibliographic reference to Integral's report. An air pathway data gap was added to Section 9.0 (Page 205).

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28. *Page 74 and Table 2-1. Please reference the source of Table 2-1 (Site-Related Chemical List).*

**FINAL RESPONSE:** The source of SRC's displayed in Table 2-1 is now included at the bottom of the table under the heading "Sources". The source of the Site-Related Chemical Lists for the Companies were based on two PES reports submitted to NDEP in June 1, 2006 (Evaluation of Site-Related Chemicals, Former Stauffer Chemical Company Facility, Henderson, Nevada; and the Evaluation of Site-Related Chemicals, Former Montrose Chemical Corporation Facility). These two reports were also listed on page 83 and added to Section 10.0 References Cited (page 210) to provide full bibliographic references.

29. *Section 4.3 Distribution of Site-Related Chemicals in Soil and Groundwater*

- a. *Sources and distributions of all key chemicals, including metals other than arsenic, PCBs, asbestos and radionuclides, should be discussed in this section and used to support the identification of data gaps.*

**INITIAL RESPONSE:** The Companies respectfully disagree. A detailed discussion of each SRC is not necessary. Instead, the CSM indicates a subset of SRCs generally comprised of 17 chemicals or chemical families to represent the primary impacts in soil and groundwater associated with the Site that were evaluated in detail. All key chemicals will be included in the Risk Assessment and the RAS.

*NDEP response (Specific Comment 26, April 21, 2008 letter): Because the document indicates that one intended outcome of the CSM will be for risk assessment, then the Companies must comply with this comment. Neither the CSM nor the Companies' response-to-comments letter provides justification for the selected chemicals. The Companies should review each chemical class and provide justification for the selection of compounds that are representative of each class. This justification should discuss the following: frequency of detection; exceedances of applicable comparison levels (including the leaching pathway as well as human health based criteria); physical properties; geochemical properties; and relative toxicity. Any compound selected for presentation must be depicted in the following intervals: surface soils; sub-surface soils; shallow groundwater and the deeper groundwater zones. Please note that if a compound is selected for presentation in soils it must also be depicted in groundwater. Likewise, if a compound is selected for presentation in groundwater it must also be presented in soils. Once the NDEP and the Companies reach consensus on the list of applicable compounds revised figures will need to be generated and submitted.*

**FINAL RESPONSE:** The requested justification for selection of key chemicals has been provided in Section 4.3.3 (pages 87 to 91). Two additional compounds have been added to

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the list. Maps for all units have been prepared for the two new compounds, hexachlorobenzene and arochlor-1254 (Figures D-24A through D-26).

- b. *It is not clear how the results of the PRG screen are being used. Until documentation is provided that sources have been adequately characterized, it is premature to subject data distributions to any form of a PRG screen.*

**FINAL RESPONSE:** The SRCs were not screened but rather compared to Industrial PRGs merely as a convenient means to identify a subset of the SRC list which was representative of the nature and extent of primary impacts in soil and groundwater associated with the Site. This subset of SRCs generally comprised the 17 chemicals or chemical families that were evaluated in detail in the CSM through the development of bubble or plume maps. SRCs were not eliminated from further consideration in future risk assessment or remedy evaluations based on a comparison to PRGs in the CSM.

- c. *Please note that DAFs (dilution attenuation factors) are not soil screening concentrations, as stated on page 75. DAFs reflect attenuation mechanisms applicable to the leaching of chemicals in soil. DAFs are defined as “the ratio of contaminant concentration in soil leachate to the concentration in ground water at the receptor point.” (USEPA, 1996). DAFs are used by USEPA in the derivation of leaching-based Soil Screening Levels (SSLs) (USEPA, 1996). DAFs and leaching SSLs are independent of land use scenarios (e.g., residential, commercial/industrial). The CSM should be edited accordingly.*

**FINAL RESPONSE:** The CSM text in Section 4.3.1 (page 84) was edited as requested including reference to EPA (1996). EPA (1996) was also added to Section 10.0 References Cited (page 212) to provide a full bibliographic reference.

- d. *It is stated at the top of page 76 that site-specific fate and transport processes likely differ from assumptions used in the development of the USEPA generic DAFs. Generic SSLs should not be used if there are unique site-specific conditions which may result in underprediction of leaching when the SSLs are applied. Please explain.*

**FINAL RESPONSE:** Comment noted. Tables 4-1 and 4-2 were modified to include the SSLs (DAF1 and DAF20).

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30. *Section 4.3.1, page 75, 1<sup>st</sup> paragraph of the section. "Because it is planned that Site-specific risk assessments will be completed to address the potential exposure to SRCs identified at the Site, the preliminary Site screening levels were developed for the sole purpose of assessing SRCs and/or SRC concentrations that may warrant further Site-specific study, including assessing data gaps." The Companies must keep in mind that chemicals are not to be "screened out" in the CSM as this is a function of the risk assessment process.*

**INITIAL RESPONSE:** The Site screening levels were not used in the CSM to "screen out" chemicals. SRCs were not eliminated from further consideration in future risk assessment or remedy evaluations based on a comparison to PRGs in the CSM. The screening of SRCs will be conducted pursuant to the January 2008 Risk Assessment Work Plan.

**See response to Comment 29b.**

*NDEP response (Specific Comment 27, April 21, 2008 letter): Please include this clarification in the CSM. Also, it should be noted that the USEPA Region 9 PRGs are not supported by the USEPA any longer. These PRGs need to be verified for accuracy or a more appropriate comparison level needs to be used. NDEP anticipates issuing guidance on this matter in the near future.*

**FINAL RESPONSE:** A clarification was added to Section 4.3.3 (page 87) that all SRCs will be evaluated further for inclusion in the risk assessment process. A new paragraph was added in Section 4.3.1 (page 84) that references NDEP's statement that Region IX no longer updates its PRG list. In this paragraph, it is also noted that Region VI Medium Specific Screening Levels will be used as comparison levels for future site work.

31. *Pages 99 and 100, Section 4.3.10.4, the NDEP has the following comments:*

- a. *1st ¶. The first three sentences are inconsistent with Figure 4-16, where the maximum chloroform concentration is 130,000 µ/L in well FTF-10D.*

**FINAL RESPONSE:** The text in Section 4.3.10.4 (page 112) was revised to include the chloroform result from boring FTF-10D. Note that FTF-10D was an open hole boring from which a groundwater grab sample was collected and is not appropriately included in a discussion of the range of detections in conventional groundwater samples collected from monitor wells. This distinction is provided in the revised text.

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- b. *This Section should have included a discussion of chloroform concentrations associated with the Closed Montrose Ponds. This area of the Site appears to have some of the highest concentrations of chloroform.*

**INITIAL RESPONSE:** Please refer to the response to comment 20.

*NDEP response (Specific Comment 28, April 21, 2008 letter): The NDEP does not concur with the response to comment #20, see discussion above.*

**FINAL RESPONSE:** Additional text has been added to Section 4.3.10.4 (page 112) to discuss chloroform concentration trends in Closed Ponds area monitor wells MW-2 and MW-3.

32. *Page 100, last ¶. The 2<sup>nd</sup> and 3<sup>rd</sup> sentences are not consistent with Figure 4-6. On Figure 4-6, the maximum chloroform concentration is 100,000 µ/L in well MC-MW-10, and not 140,000 µ/L.*

**FINAL RESPONSE:** Figure 4-6 has been renamed as Figure 4-6A. Both the text and Figure 4-6A are correct as presented in the draft. The confusion relates to what Figure 4-6A actually displays. Figure 4-6A displays the most recent available result for the particular compound, with exceptions for cases where the most recent result was a non-detection with high method reporting limits (MRLs). Therefore, this figure may or may not display the historical maximum detection of a particular compound at any particular well. The cited text now on page 113 indicates that the maximum detected concentration of chloroform in UMC groundwater was 140,000 ug/L at MC-MW-10 in the October 2006 sample. The MC-MW-10 value displayed on Figure 4-6A was 100,000 ug/L, which was the detected value in the April 2007 sample, which was the most recent sample prior to the CSM data cut-off date of end of April 2007.

A note was added to Figure 4-6A to explain the data set displayed on the figure and to indicate that the displayed values may not be the maximum detected concentrations for the particular well's period of record.

33. *Pages 127 and 128, Section 4.3.20.4, in several locations the Companies state "Arsenic may be naturally occurring...in groundwater." NDEP does not disagree that arsenic is naturally occurring in groundwater, however, without the context of concentration these statements are of limited use. The establishment of background concentrations in groundwater is a data gap.*

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**FINAL RESPONSE:** A data gap No. 9 was added in Section 9.0 (pages 204 to 205) to indicate that background groundwater concentrations have not been fully evaluated for the Site.

34. *Pages 129 through 131, Section 4.4, Table 4-9 and Figure 4-43, the NDEP has the following comments:*
- a. *The physical and chemical properties of DNAPLs, including their low solubility in water, high specific gravity and the tendency to sink in the subsurface and to remain sorbed to materials in an aquifer, make DNAPLs difficult to locate and characterize in the subsurface. The DNAPL will continue to slowly dissolve over many decades, making it more difficult to manage the dissolved-phase plume. This discussion should have been included in Section 4.*

**INITIAL RESPONSE:** Comment noted. The Companies believe that discussions of management of the dissolved-phase plume and the impacts of DNAPL with regard to management of the plume are more appropriate in the RAS document when evaluating remedial alternatives and recommended plume management schemes.

*NDEP response (Specific Comment 29, April 21, 2008 letter): The NDEP concurs that impacts with regard to management of the plume will have to be addressed in the RAS document. However, the description of contaminant fate and transport in the environment belongs in the CSM. Please, include this discussion in the CSM.*

**FINAL RESPONSE:** The text in Section 4.4, page 143, was revised to include discussion of plume management with a referral to the detailed discussion of fate and transport of NAPL in Section 5.2.

- b. *It is difficult to verify the presence of DNAPLs through direct observation, and generally their presence is indirectly estimated, usually based on groundwater concentration data and the "1 percent of solubility" rule-of-thumb (EPA 542-R-04-016, December 2004). Under this approach, DNAPL is suspected to be present when the concentration of a chemical in groundwater is greater than 1 percent of its pure-phase solubility (for example, when the concentration of chlorobenzene is greater than 3,000 micrograms per liter). This discussion should have been included in Section 4, along with an identification of known locations with high concentrations of VOCs. For example:*

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*i. Figure 4-5*

- *Benzene water solubility is 1,750,000 µg/L; using the highest concentration contour of 100,000 and greater; any samples collected within this area exceeds 5% of the water solubility for benzene*

**FINAL RESPONSE:** While it is recognized that DNAPL is often difficult to locate, to date US EPA and others agree that the use of direct methods are the most appropriate means to detect DNAPL in wells and samples. The general “1 percent of effective solubility” rule of thumb is one indirect method that can be used to infer that DNAPL is suspected somewhere in the aquifer. This estimation must be used carefully since the dissolved plume from a DNAPL source area may show concentrations greater than 1% for considerable distances downgradient of the source. Concentrations within the inferred area exceed 5% of the water solubility for benzene.

Per the discussions in the February 27, 2008 meeting, the Companies prepared new or revised figures that will include indirect evidence, such as % solubility, soil vapor concentrations in the form of PID/FID measurements and direct evidence such as visual identification, reaction to FLUTE® ribbon and soil sampling results. These new/revised figures are 4-43 and 4-44. Additionally discussion of the figure has been added to Section 4.4 of the CSM (pages 146 to 147).

*ii. Figure 4-6*

- *The benzene concentration in well MC-MW-10 is listed as 150,000 µg/L; the water solubility for benzene is 1,750,000 µg/L; this is 8.6% of the solubility limit which would be indicative of free phase product.*

**FINAL RESPONSE:** Figure 4-43 has been renumbered as Figure 4-44 (to accommodate the addition of an evidence of DNAPL figure for the Alluvial Aquifer as Figure 4-43) and renamed to indicate that this figure displays data for the Fine-Grained Upper Muddy Creek Formation. These two figures in the CSM provide an illustration of the various direct and indirect evidence of DNAPL at this location.

- *The 1,4-Dichlorobenzene concentration in wells MC-MW-10, MC-MW-12, and DPT-01 is 3,700 µg/L, 8,100 µg/L, 9,500 µg/L, respectively; the water solubility for 1,4-Dichlorobenzene is 73,800 µg/L; this would equate to 5%, 11%, and 13% of the solubility in water, respectively*

**FINAL RESPONSE:** Please refer to response to the Comments 34bi and 34bii.

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- c. *The CSM states, on page 130, that evidence of DNAPLs included direct visual observation, reaction with the FLUTe® ribbon fabric, elevated PID/FID readings, soil sample analytical results for VOC concentration and groundwater analytical results for VOC concentration. However, Figure 4-43 shows only the locations where FLUTe® ribbon tests visually identified the presence of DNAPLs, and where elevated PID/FID readings were observed. Figure 4-43 should have also included the locations where concentrations of VOCs in groundwater exceeded 1 percent of their pure-phase solubility. Please, revise Figure 4-43 to include known locations with high concentrations of VOCs, and change the title of the Figure to “Estimated Extent Observed Evidence of DNAPL in Muddy Creek Formation”. Please specify if this Figure represents the 2nd water-bearing zone (i.e., the MCf) and re-submit.*

**FINAL RESPONSE:** Figure 4-43 has been renumbered as Figure 4-44 (to accommodate the addition of an evidence of DNAPL figure for the Alluvial Aquifer as Figure 4-43) and renamed to indicate that this figure displays data for the Fine-Grained Upper Muddy Creek Formation. The figure has also been revised to illustrate the requested direct and indirect evidence of DNAPL for the Fine-Grained Upper Muddy Creek Formation. Both figures displays the FLUTe® ribbon reaction data, percent of pure-phase solubility results, PID/FID readings, and wells at which visual information or NAPL probe detections have been made.

- d. *Please, develop and submit figures similar to Figure 4-43 for the Alluvial Aquifer and the 3rd water-bearing zone, in addition to the 2nd water-bearing zone in Figure 4-43.*

**FINAL RESPONSE:** New Figure 4-43 (Alluvial Aquifer) and renumbered Figure 4-44 (Fine-Grained Upper Muddy Creek, previously 4-43) have been prepared to support the new text regarding DNAPL evidence in Section 4.4 (pages 146 to 147), as described in the Final Response to Comment No. 34c. Because there is no positive evidence for DNAPL presence in the Coarse-Grained Upper Muddy Creek Formation wells, a figure was not prepared.

- e. *It appears that a number of locations are not shown on Figure 4-43 (e.g.: location EC09). In addition, none of the soil vapor or groundwater monitoring locations near the Montrose Closed Ponds are shown, and should be included in the re-submitted Figure(s).*

**FINAL RESPONSE:** The locations discussed above (e.g., location EC09; monitoring locations near the Montrose Closed Ponds) are shown on the newly created evidence of DNAPL figure for the Alluvial Aquifer (Figure 4-43).

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- f. *It may be helpful to present CAMU-area data on the revised Figure 4-43 as well. Recent monitoring in the CAMU-area has shown the presence of DNAPL along the southern boundary of the CAMU, i.e., on the north side of the Companies' Site.*

**FINAL RESPONSE:** The Companies have received a preliminary, partial version of CAMU's October 2007 monitoring data. The data set had not yet been validated. As such, the data could not be included in the Final CSM report. These data will be included, however, in future reports once the complete, validated data set have been received from BRC.

- g. *It is requested that the groundwater monitoring locations with high VOCs concentrations near the GWTS also be shown on the re-submitted Figure(s).*

**FINAL RESPONSE:** New Figure 4-43 and renumbered Figure 4-44 show groundwater monitoring locations with elevated concentrations of potential DNAPL former compounds benzene, chlorobenzene, 1,2- and 1,4-dichlorobenzene, and chloroform in the Alluvial Aquifer and the Fine-Grained Upper Muddy Creek, respectively (see inset maps "Maximum DNAPL Percent Solubility").

- h. *Table 4-9, a footnote 1 is listed for location SB-EC09, however, it appears that this footnote is not defined.*

**FINAL RESPONSE:** Table 4-9 was revised to include a definition of this footnote.

35. *Page 130, Section 4.4, 1st paragraph, last sentence. "Additionally, NAPL has not been detected in any of the groundwater monitor wells measured during the Phase I and Phase II Site-Wide Groundwater Sampling Events or ongoing quarterly Groundwater Monitoring Program." Please discuss if these wells were designed to detect or trap NAPLs.*

**FINAL RESPONSE:** New wells drilled from the fall 2006 onward (during Phase I and II groundwater investigation activities) were designed with DNAPL traps. New Table 4-10 includes listing which monitor wells were designed with screen intervals to detect LNAPL and traps for detecting DNAPL. Section 4.4.2 (page 146) contains text explaining that not all

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of the wells sampled at the Site were constructed with design features to assess the presence of NAPL.

36. *Page 131, Section 4.5, 1st paragraph of the section. "These criteria are applied prior to site investigation stage to design field sampling programs and select analytical methods for data collection. They are also applied after the Site investigation to evaluate the usability of analytical data for risk assessment. The brief evaluation that follows focuses on the latter application of the data usability criteria." Italic emphasis added by the NDEP. The data usability (DU) evaluation included herein is not adequate for risk assessment; if that is what was intended based on reading of the italic text above. The following comments apply to the table that follows the introduction to this section.*

**INITIAL RESPONSE:** The data usability evaluation included in the CSM was not intended for use in the Risk Assessment that has been proposed by the Companies. Only those data that have been submitted to the NDEP in the respective Data Validation Summary Reports (and rigorously validated in accordance with applicable NDEP and US EPA requirements as described in each DVSR) are planned to be used for risk assessment purposes.

*NDEP response (Specific Comment 30, April 21, 2008 letter): Part 1: This Comment applies to all of Comment #36 and subparts; i.e., the Data Usability Section of the CSM. The Companies' responses are sufficiently off-target that this section should be removed from the CSM and a separate document developed for this purpose. Part 2: Regarding the statement in the response paragraph above: "Only those data that have been submitted to the NDEP in the respective Data Validation Summary Reports (and rigorously validated in accordance with applicable NDEP and US EPA requirements as described in each DVSR) are planned to be used for risk assessment purposes", then this data set must be evaluated using the EPA's six data usability criteria, which includes the five data quality indicators (EPA, 1992, Guidance for Data Usability in Risk Assessment, pp 26-37).*

**FINAL RESPONSE:** The Companies have removed Section 4.5 Data Usability Assessment from the CSM document. Data Usability Assessment Reports will be prepared as part of the risk assessment process and will be provided to NDEP under separate cover.

a. *Analytical Methods and Detection Limits*

- i. *The Companies state "...minimum detection limits were achieved in most cases..." What is a minimum detection limit? Were any detection limits above MCLs, Region IX PRGs, or other comparison levels used in Section 4?*

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**INITIAL RESPONSE:** The minimum detection limit is the method reporting limit as listed in tables 1 and 2 of the QAPP. As indicated in the CSM text, “minimum detection limits were achieved in most cases; elevated detection limits exist on a limited basis where sample dilution was required”. Thus elevated detection limits were reported for samples or compounds that required dilution. The text will be edited to reflect this.

*NDEP response (Specific Comment 30, April 21, 2008 letter): The detection limits should be reiterated in a Table. This can be done in a summary table that lists maximum and minimum detections, number of samples, maximum and minimum detection limits, frequency of detection, etc. Additionally, please discuss what percentage of the samples had elevated detection limits and for which compounds.*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, this discussion will be included in the Data Usability Reports prepared as part of the risk assessment process.

- ii. The Companies state “...elevated detection limits exist on a limited basis where sample dilution was required.” Please specify which samples. Were any samples with elevated detection limits used for comparison to MCLs. PRGs, etc?*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, this discussion will be included in the Data Usability Reports prepared as part of the risk assessment process. Note also that comparisons for detection limits versus MCLs and PRGs are now included in revised Tables 4-1 through 4-6.

- iii. The Companies state “Rigorous data validation was performed for recent data and selected historical data.” Please discuss if data validation included calculation of DQIs?*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, this discussion will be included in the Data Usability Reports prepared as part of the risk assessment process.

*b. Data Quality Indicators*

- i. “Recent data met most DQIs...” Please specify how many and which DQIs.*

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**INITIAL RESPONSE:** See above response. A summary of the DQI analyses performed will be added to the text.

*NDEP response (Specific Comment 30, April 21, 2008 letter): The detailed DQI analysis should be included in the data usability evaluation, as DQIs constitute one of six data usability criteria.*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, this discussion will be included in the Data Usability Reports prepared as part of the risk assessment process.

- ii. *The Companies state "...only a qualitative assessment of sample variability, precision, and accuracy for recent data was performed..." DU guidance provides a methodology to determine sample variability, precision, and accuracy, and the methodology is quantitative. Please explain what was done here.*

**INITIAL RESPONSE:** Comment noted. The statement that "only a qualitative assessment of sample variability, precision and accuracy for recent data was performed" was meant to indicate that the criteria listed in the guidance were considered in evaluating the usability of the data for this CSM and in planning for the Risk Assessment. As indicated above, a more rigorous data usability evaluation will be conducted as part of the risk assessment and only data that meet the quantitative criteria will be used for the risk assessment. The risk assessment and the results of the data usability evaluation for the risk assessment will be submitted as a separate document.

*NDEP response (Specific Comment 30, April 21, 2008 letter): Specifically, how were these two DQIs considered? Also, if the intended use of this evaluation was for risk assessment planning, then the assessment needs to be quantitative as intended by the guidance document. Otherwise, The Companies will not be able to quantitatively determine data gaps.*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, the answer to NDEP's question will be included in the Data Usability Reports prepared as part of the risk assessment process.

- iii. *The Companies state "...data are generally complete and of high quality..." What does generally complete mean? What goals were established in the work plans for the number of samples and were these goals met; as expressed as a percentage of the goal?*

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**INITIAL RESPONSE:** The data usability evaluation will be conducted as part of the risk assessment. This risk assessment and the results of the data usability evaluation for the risk assessment will be submitted as a separate document.

*NDEP response (Specific Comment 30, April 21, 2008 letter): Data Usability Section should be removed from the CSM and a separate document developed for this purpose.*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, the answer to NDEP's question will be included in the Data Usability Reports.

- iv. *The Companies state "...data precision and accuracy are generally expected to be high as a result of rigorous quality assurance/quality control program and data validation." QA/QC programs improve the probability of high quality data but they are proof of quality data. Thus, precision and accuracy are calculated, please provide the calculation results.*

**INITIAL RESPONSE:** The calculation results are provided in the DVSR packages submitted to the NDEP. Specifically, the calculations for precision and accuracy are contained in the laboratory reports and the calculated precision and accuracy values that are outside of acceptance criteria are listed in the individual data validation packages and summarized in the DVSR.

*NDEP response (Specific Comment 30, April 21, 2008 letter): Data Usability Section should be removed from the CSM and a separate document developed for this purpose.*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, the requested calculation results will be included in the Data Usability Reports.

- v. *The Companies state "Overall, the level of uncertainty in the recent data is expected to be low; all recent data are considered acceptable for risk assessment." The calculations required within the DU guidelines were not provided. Thus is statement that can not be made.*

**INITIAL RESPONSE:** See response to comment 36a and b.

*NDEP response (Specific Comment 30, April 21, 2008 letter): Data Usability Section should be removed from the CSM and a separate document developed for this purpose.*

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**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, the requested calculation results will be included in the Data Usability Reports.

*c. Data Validation*

- i. The Companies state "Historical data have been reviewed in detail by a broad group of professionals (i.e., hydrogeologists, engineers, chemists, etc.); data were validated if sufficient information was available." Do the Companies have data validation reports for all of this data? This statement requires explanation.*

**INITIAL RESPONSE:** Details will be provided about which historical data sets were validated and references will be provided regarding the documents that contain the validation data.

*NDEP response (Specific Comment 30, April 21, 2008 letter): Data Usability Section should be removed from the CSM and a separate document developed for this purpose.*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, the answer to NDEP's questions will be included in the Data Usability Reports.

*d. Reports to Risk Assessor*

- i. The Companies state "...some critical information required for risk is incomplete or missing..." Specifically what data?*

**INITIAL RESPONSE:** The statement included in this table was included from the EPA guidance on data quality objectives and data quality assessment and was intended to point out that additional data for risk assessment may be necessary. This statement will be removed from the text and any critical information required for risk assessment will be addressed, specifically, in the workplans prepared for conducting the risk assessment.

*NDEP response (Specific Comment 30, April 21, 2008 letter): Data Usability Section should be removed from the CSM and a separate document developed for this purpose.*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, the answer to NDEP's question will be included in the Data Usability Reports.

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37. *Page 131 through 134, Section 4.5, the NDEP has the following comments:*

- a. *The data usability assessment presented in this Section is not adequate. This assessment only discusses the data in general terms. The data usability assessment needs to evaluate each data point in terms of usability. The data validation summary reports conducted for the data are a good starting point, however, additional work is needed. It is advised that the Companies discuss this matter with the NDEP before any additional data usability assessments are conducted.*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, a more detailed assessment will be provided in the Data Usability Reports.

- b. *Pages 137 through 141, this Section would be improved through a discussion of potential co-solvency issues throughout the soil column and reducing conditions in the vadose zone.*

**FINAL RESPONSE:** An additional paragraph was added to the end of Section 5.2 (page 154) that discusses the potential for co-solvency as a factor in SRC migration in soil.

- c. *Page 142, Section 5.4, the Companies state “Contaminants such as organic compounds and chlorinated hydrocarbons and certain pesticides are to a degree soluble in water...” Please explain why inorganic compounds are not discussed. Also, please note that this Section would be improved through a discussion of potential co-solvency issues throughout the soil column and reducing conditions in the groundwater.*

**FINAL RESPONSE:** The phrase “Inorganic compounds” was added to the first sentence of Section 5.4 (page 155). See response to comment 37b for potential co-solvency discussion.

38. *Section 4.5, page 134, 1st paragraph on page. The Companies state “Historical data have been evaluated and used to greatest extent possible for Site characterization and risk assessment.” Please explain what risk assessment is being referenced.*

**INITIAL RESPONSE:** Refer to response to 37a above.

*NDEP response (Specific Comment 31, April 21, 2008 letter):* The text shown as strikethrough needs to be removed from the CSM: ~~“Historical data have been evaluated and used to greatest extent possible for Site characterization and risk assessment.”~~

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**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, no revisions were necessary with reference to this comment.

39. *Section 4.5, page 134, 2nd paragraph on page. "The recent data are considered useable for risk assessment." Please note that this was not demonstrated via the DU performed herein.*

**INITIAL RESPONSE:** Refer to response to 37a above.

*NDEP response (Specific Comment 32, April 21, 2008 letter): Please refer to NDEP response to the RTC for comment above.*

**FINAL RESPONSE:** Because Section 4.5 has been removed from the CSM document, no revisions were necessary with reference to this comment.

40. *Section 5.1, page 135, 2nd paragraph of section. The Companies state "Surface soil samples and shallow soil samples (less than approximately one foot bgs)..." To avoid confusion in the risk assessment process surface soil samples should be defined as less than one foot bgs; shallow soil samples should be defined as two feet bgs; and subsurface soil samples should be defined as greater than two feet bgs depending upon the intended use.*

**INITIAL RESPONSE:** Comment noted. In future submittals such distinctions will be considered.

*NDEP response (Specific Comment 33, April 21, 2008 letter): Please include this in Section 5.1 on pg 135 of the CSM.*

**FINAL RESPONSE:** Section 5.1 (page 148) was revised to indicate that surface soils (i.e., less than 1 foot bgs) and shallow soils (i.e., less than 2 feet bgs) have been sampled. These intervals will be used for risk assessment.

41. *Section 5.1, page 135, 3rd paragraph of section. The Companies state "Although it is recognized that the transport of windborne particulates is a contaminant transport mechanism, it is likely to result in minor impacts as many of the potential source areas have been capped with clay and/or asphalt." Also, it is noted that on page 56 (bottom), it is stated*

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*that the majority of the CSM study area is unpaved and sparsely vegetated. As such, data for exposed soils should be assessed before the windblown dust transport pathway is deemed insignificant*

**INITIAL RESPONSE:** Comment noted. Please refer to January 2008 Risk Assessment Work Plan.

*NDEP response (Specific Comment 34, April 21, 2008 letter): Please, include this discussion in the CSM, and perhaps include a reference to the January 2008 Risk Assessment Work Plan.*

**FINAL RESPONSE:** The requested discussion was added to Section 5.1 (page 148) and a bibliographic reference to the Integral 2008 Risk Assessment Workplan was added to Section 10.0 References Cited (page 209).

42. *Section 5.2, page 138, 2nd paragraph, 2nd sentence. The Companies state "...at the Site using total organic carbon analyses of soil samples collected from soil borings SB-EC-01 through SB-EC-14 (PES, 2007a)." This statement should have reference a figure in this report that shows where these samples were collected.*

**FINAL RESPONSE:** A reference to Figure 3-12 will be added to the text in Section 5.2 (page 151).

43. *Section 5.2, page 138, 2nd paragraph. The Companies state "A conversion from mg/kg to grams per gram to get the foc values in percent yield foc values that range from 0.055 to 4.0." The upper end of the quoted range is very high for desert soils, hence the previous question on this Section.*

**FINAL RESPONSE:** New Table 5-1 has been added to the document to provide more information regarding TOC data that were used to estimate foc (page 151).

44. *Page 142, Section 5.4.1, this Section is titled "Transport of Organic Compounds in Groundwater", it is not clear to the NDEP why this discussion is limited to "organic" compounds. Please explain.*

**FINAL RESPONSE:** The title of Section 5.4.1 (page 156) was revised to indicate that the discussion pertains to SRCs, not just organic compounds. Throughout this Section (pages

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156 to 168) several edits were made to replace the phrase “organic compounds” with the “SRCs”.

45. Section 5.4.1.1, page 143, last bullet on page. “ $M_h/M_l = \text{hydraulic gradient (difference in head (h) over transport distance (l)) [L/L]}$ ” Should not the “M” be replaced by the partial differential symbol?

**FINAL RESPONSE:** The formula was taken from the reference as it appeared in a digital version and the symbol recognition was probably incorrect. The NDEP is correct that the “M” in the formula should be replaced with the partial differential symbol. This correction was made in Section 5.4.1.1 (page 157).

46. Section 5.4.3, page 148. Do the Companies have any data to support the inference that these biological and hydrogeochemical processes are occurring?

**INITIAL RESPONSE:** No, this section was intended to provide a list of the common biological and hydrogeochemical processes that may occur at the site. The text was not intended to infer that evidence of these processes have been observed at the Site.

*NDEP response (Specific Comment 35, April 21, 2008 letter): Please include this clarification in the CSM.*

**FINAL RESPONSE:** A clarification was added in Section 5.4.3 (page 170) to indicate that the processes “...may occur in the CSM study area”.

47. Section 6 and Figure 6-2 clearly demonstrate that the GWTS is designed to extract contaminated groundwater from the alluvial aquifer. However, Figure 4-6 clearly shows that the fine-grained Upper Muddy Creek Formation groundwater quality is impacted by SRCs. Please explain the relationship between these water bearing zones.

**FINAL RESPONSE:** The existing text in Section 3.5 of CSM provided information regarding the relationship between these zones. No edits were made to the CSM text in response to this comment.

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48. *Pages 159 and 160, Section 6.3.1, the Companies state "...Based on this information, it is likely that all of the extraction wells are capturing any potentially contaminated groundwater from the transition zone, even in those well where a very thin portion of the transition zone exists below the depth of the well." NDEP is not aware of any information to substantiate this statement. No response is required as it is expected that this issue will be addressed through the forthcoming capture zone analysis.*

**FINAL RESPONSE:** This issue has been recognized and discussed in the GWTS testing report submitted to NDEP on June 15, 2007 and additional piezometers and monitor wells and data collection efforts have been recommended to address this issue. The NDEP has reviewed and commented on the plans and the Companies are in the process of implementing Work Plans when access is obtained.

49. *Page 160, Section 6.3.2, this Section should discuss chemical concentrations in the GWTS extraction wells and how this may relate to the presence of NAPLs.*

**FINAL RESPONSE:** Concentrations in extraction wells do not suggest that NAPLs exist in the GWTS area. New text discussing chemical concentrations in GWTS extraction wells samples along with consideration of potential presence of DNAPLs is now included in Section 6.3.2 (pages 181 to 183).

50. *Pages 160 and 161, Section 6.4, the NDEP has noted its disagreement with the conclusion presented in this Section in separate correspondence. The Companies should note in the CSM that the NDEP and the Companies do not agree regarding the purported overlapping cones of depression.*

**FINAL RESPONSE:** See response to comment 48.

51. *Page 160, Section 6.5.1, 1st paragraph of section. The Companies state "Only those SRCs that are detected in the groundwater samples collected from alluvial aquifer groundwater monitor wells upgradient of the GWTS and are detected in the groundwater samples collected from the GWTS extraction wells are discussed in this section." This statement is odd because it excludes the detections of SRCs from other water bearing zones.*

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**FINAL RESPONSE:** This section focuses on the alluvial aquifer as the GWTS primarily captures water from the alluvial aquifer. Items 5 and 6 in Section 9.0, Evaluation of Data Gaps, address the need for work in the UMC.

52. *Page 161, Section 6.5, general comments, the NDEP has the following comments:*

- a. *This Section does not include a discussion of the occurrence of PCBs or dioxins/furans. This is a deficiency.*

**FINAL RESPONSE:** Detects of the PCB Congeners and dioxin/furans were inadvertently omitted from the text on groundwater. A new Section 6.5.1.6 entitled “PCB Congeners and Dioxins/Furans” (page 190) was added to the text to discuss the occurrence of these compounds.

- b. *This Section is titled “Capture and Control of Groundwater Containing VOCs”, however, this Section discusses a variety of contaminants. This is awkward.*

**FINAL RESPONSE:** The section was re-titled as “Capture and Control of Groundwater Containing SRCs” (page 184).

53. *Pages 162 through 164, Section 6.5.1.1, the NDEP has the following comments:*

- a. *Please note that the comments provided below can be applied to other sections of Section 6.5.1.*

**FINAL RESPONSE:** Comment noted.

- b. *Regarding the discussion on the VOCs in this Section, the NDEP does not agree with the Companies assertion that “elevated chloroform concentrations in groundwater in the northern portion of the CSM study area may be related to other chloroform sources that are not upgradient of, and are not captured by, the GWTS”. Based upon the NDEP’s review of regional data it appears that the Montrose Closed Ponds Area and former Montrose Plant Site area may be a source of chloroform which is bypassing the GWTS to the southeast. NDEP does concur that there are additional off-Site chloroform sources, however, it appears*

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*that these are much lower in concentration and breadth. The Companies should also review data from the 2nd water bearing zone as this contamination may be feeding into the plume of contaminants in the 1st water bearing zone. The migration of this 2nd water bearing zone plume appears to be following a path northeast 30 degrees from the Montrose Closed Ponds Area. This issue required further investigation.*

**FINAL RESPONSE:** Text was added in Evaluation of Data Gaps (Section 9.0, pages 203 to 204) to indicate that additional investigations are planned to evaluate lateral and vertical extent of dissolved phase SRCs. The text addition contains a reference to Geosyntec (2008) which proposes additional monitor well installation in areas north and east of the Montrose Closed Ponds area. Geosyntec (2008) has been reviewed by NDEP and is currently being revised in response to NDEP comments.

54. *Page 165, Section 6.5.1.4, this Section includes no discussion on pesticides because the Companies state that the system was not designed to treat pesticides until after 2004. The system was not designed to treat a variety of contaminants, however, each should be discussed. Section 6.5.1.5 is an example of a suite of chemicals that are not treated but are discussed.*

**FINAL RESPONSE:** Section 6.5.1.4 (page 188) was completely revised to provide the requested discussion.

55. *Page 165, Section 6.5.1.5, the Companies state “background concentrations of arsenic and TDS are elevated within the CSM study area and the region.” To be noted, no information has been presented to substantiate this statement.*

**FINAL RESPONSE:** Please refer to the response to comment 10.

56. *Page 167, Section 7, 1<sup>st</sup> line on page. The Companies state “In some cases, an exposure pathway may be complete but is not significant because: 1) the exposure may be less than that from another pathway involving the same medium at the same point...” To have the same meaning as in the EPA reference the previous text was added (with emphasis).*

**FINAL RESPONSE:** Section 7.0 (page 193) was revised to add phrase “at the same exposure point”, as requested.

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57. *Page 168, Section 7.1.1, 2<sup>nd</sup> and 3<sup>rd</sup> paragraphs, last sentence. The Companies state "Exposure routes related to direct contact with groundwater (i.e., ingestion, dermal contact) is considered incomplete because impacted groundwater from within the CSM study area is not used." Please note that this assumption ignores a maintenance worker at the GWTS.*

**INITIAL RESPONSE:** The risk assessment is not addressing risks to maintenance workers at the GWTS. Worker protection will comply with OSHA regulations.

*NDEP response (Specific Comment 36, April 21, 2008 letter): The maintenance worker is a potential receptor and needs to be addressed; i.e., that the appropriate OSHA compliance will protect this worker.*

**FINAL RESPONSE:** Section 7.1 (pages 193 to 196) was revised to indicate that the groundwater pathway is considered complete and will be evaluated in the risk assessment of downgradient areas.

58. *Page 170, Section 7.2, 1<sup>st</sup> paragraph, 3<sup>rd</sup> sentence. The Companies state "Fossorial or borrowing wildlife theoretically could directly contact near-surface groundwater during normal activities, but this exposure is expected to be negligible because animals will not inhabit or frequent subsurface areas that could be flooded by groundwater." The NDEP does not agree with this conclusion. Groundwater from the BMI Complex is known to discharge to Las Vegas Wash; within this area borrowing invertebrates and wildlife could come into contact with SRCs.*

**INITIAL RESPONSE:** We assume that burrowing terrestrial wildlife will not directly contact groundwater for significant periods of time because they are not adapted to being in constant contact with water. Incidental direct (i.e., dermal) contact with groundwater will not lead to significant exposures. We do, however, assume that burrowing wildlife can be exposed to volatile chemicals released from groundwater to subsurface environments via inhalation and believe this to be the dominant and most significant pathway for evaluation.

*NDEP response (Specific Comment 37, April 21, 2008 letter): NDEP does not concur. As stated above, groundwater from the BMI Complex is known to discharge to Las Vegas Wash; within this area borrowing invertebrates and wildlife could come into contact with SRCs.*

**FINAL RESPONSE:** Figure 7-1 has been revised to indicate that this pathway is complete and this pathway will be evaluated in the ecological risk assessment for the downgradient areas near the Las Vegas Wash.

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59. *Section 7.2, page 170, The Companies state "Dermal exposures to volatilized SRCs could theoretically occur but would be negligible compared to inhalation exposures." The NDEP disagrees for the reason previously stated.*

**FINAL RESPONSE:** As stated in our response to comment 58, we do not believe terrestrial wildlife will regularly or significantly contact subsurface groundwater. We do recognize the potential for inhalation exposures in subsurface environments. In this instance, dermal absorption of vapor phase chemicals can occur but should be small compared to inhalation exposures due to substantially lower absorption of vapor phase chemicals through fur and skin compared to inhalation exposures. Additionally, few data are available to assess dermal exposures in wildlife. Overall, we believe this is an insignificant pathway compared to inhalation of subsurface VOCs, and that too few data are available to quantitatively assess this with any reliability.

Overall, we believe our proposed approach is consistent with USEPA guidance for Eco SSLs (USEPA 2005. [http://www.epa.gov/ecotox/ecossl/pdf/ecossl\\_guidance\\_chapters.pdf](http://www.epa.gov/ecotox/ecossl/pdf/ecossl_guidance_chapters.pdf), pages 1-5 and 1-6), which states that, in general, ingestion exposures are the most significant pathway for terrestrial wildlife, with the potential exception of certain situations where inhalation of volatile chemicals in subsurface exposure environments can occur. USEPA states that for most contaminants, dermal exposures are expected to contribute between 1% to 11% of the total risk compared to oral exposures. USEPA also notes that the data necessary to quantify dermal exposures in wildlife is lacking for many chemicals.

60. *Section 7.2, page 170, 2<sup>nd</sup> paragraph. The Companies state "Based on this, the primary pathway of interest for ecological receptors in the CSM study area is inhalation of volatile SRCs present in subsurface air contacted by fossorial or burrowing wildlife." The NDEP disagrees with this statement for the reason stated in previous comment on this Section.*

**FINAL RESPONSE:** Please refer to the response to comments 58 and 59.

61. *Page 174, Section 8.1, the description of the BMI landfill should have included two lobes of the historic landfill and their relation to the Slit Trenches and future CAMU.*

**FINAL RESPONSE:** The text in Section 8.1 (page 198) was revised to describe the location of both lobes and their relation to adjacent site features.

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62. *Page 176, second ¶. The NDEP does not concur that the occurrence of inorganic constituents in the downgradient area can be characterized as a “residual occurrence”. Information has not been presented to date to substantiate this statement. This statement occurs in a number of Sections of the document and this comment will not be repeated for each instance.*

**FINAL RESPONSE:** The NDEP must mean page 174 not 176. The text in Section 8.3 (page 200) was changed to remove the phrase “residual occurrence”.

63. *Section 8.3. Transport mechanisms should have included a discussion of the physical and chemical properties of DNAPLs and their impact on the quality of groundwater at the site. Due to their tendency to sink in the subsurface and to remain sorbed to materials in an aquifer, DNAPLs will continue to slowly dissolve and release contaminants to groundwater over many decades. The presence of DNAPLs, which act as a continuing contaminant source, is perhaps the most significant aspect of the contaminant transport mechanisms present at the site. The NDEP considers the lack of focus on the DNAPLs a weakness of the CSM.*

**FINAL RESPONSE:** The text in Section 8.3 (page 200) was revised to provide a reference to edited Section 5.2, which includes a discussion of DNAPL transport mechanisms.

64. *Section 8.5, page 176. The Companies state “Potentially complete exposure pathways for SRCs in groundwater via ingestion and dermal contact were not identified because groundwater is not used for industrial, domestic consumption, or irrigation in the vicinity of the Site.” Please note that this statement does not account for the on-site maintenance worker at the GWTS.*

**INITIAL RESPONSE:** See response to comment 57.

*NDEP response (Specific Comment 38, April 21, 2008 letter): Please refer to NDEP’s response to the Companies RTC for CSM Comment 57.*

**FINAL RESPONSE:** See response to Comment 58. Additionally, the last sentence of Section 8.5 (page 202), which previously indicated no completed pathways for contact with groundwater, has been removed.

65. *Figure 8-1. The NDEP does not concur that the contaminants present in the downgradient area can be characterized as “residual”. Information has not been presented to date to*

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*substantiate this statement. Please remove the word "residual" from the descriptor "~~Residual~~ Inorganic SRCs and selected BHCs", and submit the corrected figure.*

**FINAL RESPONSE:** The word "residual" was removed from the descriptor of the figure.

66. *Section 9, page 177. It is noted that if the DU were implemented pursuant to the EPA guidance more data gaps might be identified.*

**INITIAL RESPONSE:** Comment noted.

*NDEP response (Specific Comment 39, April 21, 2008 letter): Data Usability Section should be removed from the CSM and a separate document developed for this purpose*

**FINAL RESPONSE:** The Companies have removed Section 4.5 Data Usability Assessment from the CSM document. Data Usability Assessment Reports will be provided to NDEP under separate cover.

67. *Pages 179 and 180, Section 9.0, Evaluation of Data Gaps. The NDEP has the following comments:*

- a. *It should be noted that consistent with USEPA guidance, the CSM and data gaps should be based on sources rather than SRCs. Data Gaps for individual sources have not been defined in this CSM, and will require definition during the remedial investigation and feasibility studies for remediation of individual sources.*

**INITIAL RESPONSE:** Comment noted. The data gaps in multiple source areas have historically been identified for media rather than source due to the inability to identify specific sources or the co- location of multiple sources. Refer to response to comments 3e and 8.

*NDEP response (Specific Comment 40, April 21, 2008 letter): Please note that this means that a separate CSM must be prepared for each source area or group of sub-areas.*

**FINAL RESPONSE:** The Companies recognize that separate CSMs must be prepared for each source area or group of source areas.

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- b. *Data Gap 1, this data gap should be modified to note that the horizontal and vertical extent of SRCs in site soils has not yet been completed. It is not appropriate to limit this statement to organochlorine pesticides only.*

**FINAL RESPONSE:** The text in Section 9.0 (page 203) was modified to indicate the horizontal and vertical extent of SRCs in site soils has not yet been completed and is recognized as a data gap.

- c. *Data Gap 3, NDEP does not concur that the eastern extents of contamination are only unknown north of location TR-06. Data has not been presented to show that contamination does not exist south and east of location TR-06.*

**FINAL RESPONSE:** Additional work has been completed in the inter-GWTS area downgradient of TR-06 that impacts this comment. This data will be evaluated and used to revise figures where appropriate. Preliminary information indicates that the Alluvial Aquifer in some portions of this area is not saturated.

- d. *Data Gap 4, the NDEP believes that it is inappropriate to limit this data gap to vertical characterization to the area “downgradient of the Stauffer Former Leach Field and Phosphoric Pond/Trenches and former Wastewater Pond 1”. There are several areas of the Site where vertical characterization has not been completed. For example, only one well exists in what the NDEP refers to as the 3rd water bearing zone (well MW-08).*

**INITIAL RESPONSE:** Comment noted. See response to comment 22. The Companies agree that additional information is necessary in several areas and have submitted phased investigations of the UMCf, the GWTS area and the DNAPL Reconnaissance Study Area. The Companies disagree that additional investigation is warranted for the UMCc as data collected to date indicate that elevated SRCs have not been detected in this unit and the presence of an upward gradient limits the vertical movement of SRCs to this depth.

*NDEP response (Specific Comment 41, April 21, 2008 letter): The NDEP does not concur with the following assertion: “The Companies disagree that additional investigation is warranted for the UMCc as data collected to date indicate that elevated SRCs have not been detected in this unit and the presence of an upward gradient limits the vertical movement of SRCs to this depth.” An upward gradient, or any other mechanism, have not precluded DNAPLs from migrating to the UMCf already. While DNAPLs may or may not be present in deeper portions of the UMC, including UMCc, they may continue their migration downward. Current conditions need to be carefully documented as a baseline of for groundwater quality in UMCc, against which any potential future deterioration can be*

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*compared. The presence of the upward pressure gradient and its impacts on the contaminant fate and transport at the site will have to be further explored in the RAS for ground water. See also related NDEP comments above.*

**FINAL RESPONSE:** The Companies continue to disagree about the necessity of additional work in the UMCc.

- e. As stated above, the NDEP does not concur that sufficient information is available about the nature of the deeper water bearing zones to assert that laterally extensive layers of sediments are, or are not, present. Because of the presence of DNAPLs in the upper portion of the Muddy Creek Formation, the nature of these sediments may need to be better defined in the areas with highest concentrations of DNAPLs. This is a data gap.*

**INITIAL RESPONSE:** Comment noted. See response to comment 22.

*NDEP response (Specific Comment 43, April 21, 2008 letter): As stated above, the NDEP does not concur that sufficient information is available about the nature of the deeper water bearing zones to assert that laterally extensive layers of sediments are, or are not, present. Because of the presence of DNAPLs in the upper portion of the Muddy Creek Formation, the nature of these sediments may need to be better defined in the areas with highest concentrations of DNAPLs. This is a data gap.*

**FINAL RESPONSE:** A major revision of the CSM report has been made in Section 4.4 (pages 143 to 147) to discuss the evidence and findings regarding potential presence of NAPLs in the Alluvial Aquifer and Fine-Grained Upper Muddy Creek Formation. Additionally, Figures 4-43 and 4-44 provide outlined areas where NAPL is present. The Companies continue to disagree about the necessity of additional work in the UMCc.

- f. The breadth and depth of contamination relating to the Site has not been determined for the 1st, 2nd or 3rd water bearing zones. This is a data gap.*

**INITIAL RESPONSE:** Comment noted. See response to comment 22.

*NDEP response (Specific Comment 42, April 21, 2008 letter): Response to that portion of comment #22 is not acceptable. Also, please see NDEP response to #67 d.*

*NDEP response (Specific Comment 44, April 21, 2008 letter): Please, see NDEP's response to the RTC for comment 22.*

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**FINAL RESPONSE:** The Companies continue to disagree about the necessity of additional work in the UMCc.

- g. Background concentrations have not been established for deeper soils (greater than 10 fbg) or for any of the groundwater zones. This is a data gap.*

**FINAL RESPONSE:** Text was added to Section 9.0 (pages 204 to 205) to include this as a potential data gap.

- h. The nature and extent of contamination due to windblown deposition has not been established (e.g.: asbestos). This is a data gap.*

**INITIAL RESPONSE:** See response to comment 27.

*NDEP response (Specific Comment 45, April 21, 2008 letter): Refer to NDEP's response to the RTC for Comment #27. Also, Comment #27 involves specifically asbestos; this issue is more comprehensive in terms of SRCs. Please include this in the list of data gaps.*

**FINAL RESPONSE:** See the final response to comment 27.

- i. The usability of historic data is unknown.*

**INITIAL RESPONSE:** Details will be provided about which historical data sets were validated and references will be provided regarding the documents that contain the validation data. Only validated data will be used for the risk assessment.

*NDEP response (Specific Comment 46, April 21, 2008 letter): Historical data will also require a data usability evaluation for risk assessment.*

**FINAL RESPONSE:** Any historical data that is used in the risk assessment process will be evaluated as part of a data usability assessment.

- j. The significance of the "air pathway" as discussed in Section 5.1 has not been determined. This is a data gap. The NDEP requests that the Companies develop a work plan for*

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*conducting air monitoring to assess the significance of this pathway. Some compounds present at the Site have a very low concentration threshold (e.g.: several of the pesticides). The nature and scope of this monitoring work plan should be discussed with the NDEP. Please note that BRC has evaluated a comprehensive list of compounds and developed an air monitoring plan which the NDEP believes is conservative and appropriate. This document is referred to as the Perimeter Air Monitoring Plan and is an appendix to BRC's Corrective Action Plan.*

**INITIAL RESPONSE:** Comment noted. The Companies will review the BRC Perimeter Monitoring Plan and review and compile existing air monitoring data that has been collected by BRC and Pioneer and propose a plan of action to NDEP regarding this issue.

*NDEP response (Specific Comment 47, April 21, 2008 letter): Please include this in the list of data gaps, and revise Section 9 to reflect this data gap.*

**FINAL RESPONSE:** The review and compilation of data from the BRC Perimeter Monitoring Plan has been included in Section 9.0, page 205.

- k. *The communication of the 2nd water bearing zone with other water bearing zones requires further investigation. In addition, the presence of NAPLs in all water-bearing zones requires further investigation.*

**FINAL RESPONSE:** Additional information will be gathered regarding the relationship between the Alluvial Aquifer, UMCf and UMCc as part of the proposed DNAPL Reconnaissance work and the investigation of SRCs in the UMCf in the GWTS area.

68. *Tables, the NDEP has the following comments:*

a. *Table 4-1, the NDEP has the following comments:*

- i. *This table should be expanded to include columns which show the number of non-detects above the PRG. In addition, comparisons to USEPA SSLs (DAF1 and DAF20) should be added to this table. Please revise and resubmit this table.*

**INITIAL RESPONSE:** Table 4-1 will be expanded to include columns that show the number of non-detects above the PRGs. However, as expressed previously, the Companies respectfully disagree that the use of the USEPA SSLs (DAF1 and DAF20) are appropriate for this site. The

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**intention of the Companies is to compare soil concentrations to site-specific goals developed as part of the site-specific risk assessment.**

*NDEP response (Specific Comment 48, April 21, 2008 letter): It is not clear to the NDEP why the Companies are choosing to defer this item as the USEPA provides for the calculation of site-specific DAFs. Please, calculate site-specific DAFs per EPA guidance (EPA, 2002). These SSLs and site-specific DAFs are important for making decisions regarding characterization and remediation.*

**FINAL RESPONSE:** Table 4-1 was expanded to include the number of non-detects above the PRG and the USEPA SSLs (DAF1 and DAF20) for those compounds that have published values.

*ii. It would be helpful if this Table identified the depth interval associated with the Table.*

**FINAL RESPONSE:** The soil sample depth interval is now identified within Table 4-1 as a footnote.

*b. Tables 4-2 and 4-3, the comments for Table 4-1 apply to this table as well.*

**FINAL RESPONSE:** See response to comment 68a. Tables 4-2 and 4-3 were revised with the depth interval information as requested.

*c. Chloroform data in Table 4-4 (maximum chloroform concentration = 120,000  $\mu$ /L) appears inconsistent with Figure 4-16 (maximum chloroform concentration = 130,000  $\mu$ /L).*

**FINAL RESPONSE:** The NDEP is correct. The table and text are inconsistent. Table 4-4 was revised as requested. The chloroform result for FTD – 10D is 130,000 micrograms per liter, but is a grab groundwater sample – not a true groundwater sample. This value was added to the table and footnoted that it is a grab sample not a groundwater sample collected under the FSSOP purge procedures. Additionally new text was added to Section 4.3.10.4 (page 112) to discuss the FTD-10D chloroform result.

*d. Chloroform data in Table 4-5 (maximum chloroform concentration = 140,000  $\mu$ /L) appears inconsistent with Figure 4-6 (maximum chloroform concentration = 100,000  $\mu$ /L).*

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**FINAL RESPONSE:** Please refer to the response to Comment No. 32.

- e. *Tables 4-4, 4-5, and 4-6, these tables should be expanded to include columns which show the number of non-detects above the water quality metric. In addition, it is requested that USEPA Region IX tap water PRGs be utilized for compounds without USEPA MCLs. Please revise and resubmit these tables.*

**FINAL RESPONSE:** Columns were added to Tables 4-4, 4-5 and 4-6 that list the number of non-detects above the requested water quality metric.

- f. *Table 4-7, this Table should clarify it is discussing soil or groundwater data.*

**FINAL RESPONSE:** The PRGs listed in Table 4-7 are for soil and the MCLs listed are for groundwater. The table was revised to provide this clarification.

- g. *Table 4-9, the NDEP has the following comments:*

- i. *General comment, it is expected that future monitoring events will continue to assess for the presence of NAPLs. Please affirm this.*

**FINAL RESPONSE:** A product-water interface probe will be used to measure water levels in future measurement events.

- ii. *General comment, based upon the discovery of DNAPLs in a number of locations below the second water bearing zone the Companies should consider installing deeper borings in areas with elevated concentrations and no NAPLs discovered. Many of the borings installed were not drilled deep enough to discover NAPLs that may be in this soil/water horizon. This is part of the issue of a larger data gap regarding vertical characterization at the Site.*

**INITIAL RESPONSE:** Comment noted. See response to comment 22.

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*NDEP response (Specific Comment 49, April 21, 2008 letter): Please, see NDEP's response to the RTC for comment #22.*

**FINAL RESPONSE:** The Companies' final response to comment 22 contains more detail. Please refer to this response. Additionally, note that recent data have been collected in the Study Area during Spring 2008 as part of the DNAPL Reconnaissance investigation. Montrose has recently drilled four new deep borings (RB-10, RB-11, RB-15, and RB-17). During drilling, core samples were analyzed in the field for evidence of NAPL using visual methods, PID screening, and FLUTE® ribbon. Soil samples were also collected to depths up to 150 feet bls for laboratory chemical analysis. The validated analytical results have recently been received and thus could not be included in the revised CSM report. However, it is anticipated that the results will be provided in a stand-alone report to be submitted to NDEP.

Additionally, Stauffer has recently submitted a sampling and analysis plan to include additional 13 vadose zone profile borings (PES Environmental, Inc., 2008, Sampling and Analysis Plan, Area-Specific Conceptual Site Models, April 11, 2008). The borings are to be drilled across the entire thickness of the vadose zone and will terminate at the water table. Soil core will be screened for presence of VOCs using a PID and will be screened for NAPLs using a hydrophobic dye-impregnated ribbon. Soil samples will also be collected for chemical analysis.

- iii. General comment, in many instances the Companies state "No evidence of NAPLs were detected", however, this statement appears to be based solely on the use of the product-water interface probe. It is not appropriate to state that "no" evidence was detected. The groundwater concentrations; PID readings; FID reading and OVA readings are all possible forms of evidence of NAPL and should be considered as such*

**FINAL RESPONSE:** This statement was only made in this table to indicate where the groundwater data is collected and no product interface probe measurements indicate the presence of free product. Figures 4-43 and 4-44 present information regarding all of the indirect and direct forms of NAPL evidence.

- iv. Former Leach Field and Phosphoric Pond/Trenches, there is a footnote "1" that is not defined. This footnote is carried through to other locations as well. Please explain.*

**FINAL RESPONSE:** A definition for footnote "1" was added to the table.

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69. *Appendix B. It is not possible or practical for the NDEP to verify and concur with the background information presented in this Appendix. Absence of NDEP comments should not be construed as concurrence.*

**FINAL RESPONSE: Any such implication of concurrence is retracted.**

70. *Appendix E. It is not possible or practical for the NDEP to verify and concur with the background information presented in this Appendix. Absence of NDEP comments should not be construed as concurrence.*

**FINAL RESPONSE: Any such implication of concurrence is retracted.**

71. *Appendix F, please note that NDEP does not necessarily concur with this Appendix, however, it is expected that this issue will be addressed as part of resolution of data gaps.*

**INITIAL RESPONSE: Comment noted.**

*NDEP response (Specific Comment 50, April 21, 2008 letter): Please, describe the action the Companies will take.*

**FINAL RESPONSE: The scope of work and findings of the study included in Appendix F were summarized and added to Section 4.2 (pages 79 to 82).**

72. *Volume II, general comment, Figures with chemical cross-sections, depicting the vertical distribution of major contaminants in the subsurface, would have been much more valuable if they included transects from south to north, through the Montrose Closed Ponds in the South, and past the location of the GWTS in the north. Please develop such cross-sections along two roughly parallel transects for the following compounds: chloroform, benzene, chlorobenzene, TDS, arsenic, and beta-BHC. One of these transects should originate at the Montrose Closed Pond 6, continue through the inactive benzene Underground Storage Tanks location, cross the area encompassing the BHC Cake Pile 3, ACD Drum Burial, and Leach Field and Phosphoric Acid Pond, and continue through the ACD ponds, CAMU-area and to the GWTS. Another transect should include the Eastern portion of Montrose Ponds, cross through the Former Tank Farm and Plant Site, inactive CAPD Ponds and past the GWTS.*

**FINAL RESPONSE: Figure 3-11A has been prepared to include the data requested.**

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73. *Volume II, Figure 1-2, the NDEP has the following comments:*

- i. General, please note that the issues listed below also apply to other Figures and will not be repeated.*

**FINAL RESPONSE: Comment noted.**

- ii. Please note that the former TIMET ponds east of Boulder Highway were legally transferred to BMI on May 12, 2005.*

**FINAL RESPONSE: Figure 1-2 has been revised to correct ownership information in this area.**

- iii. Please note that the southern portion of the TIMET facility was sold to private entities.*

**FINAL RESPONSE: Figure 1-2 has been revised to correct ownership information in this area.**

- iv. Please note that the WAPA parcel is not identified on this Figure.*

**FINAL RESPONSE: Comment noted. Figure 1-2 has been revised to show the WAPA parcel.**

74. *Volume II, Figure 3-3, this Figure appears to be duplicative of Figure 2-3 and should be deleted*

**FINAL RESPONSE: Figure 2-3 was removed and Figure 3-3 will be referenced in the text.**

75. *Volume II, Figure 3-10. NDEP disagrees with the presentation of Figure 3-10. Figure 3-10 implies that the coarse-grain sediments (presumably, because the dotted pattern is not identified in the legend), in the entire Muddy Creek formation, are only the two small lenses penetrated by the two of the three wells deep enough to reach this zone. This may simply be a function of a lack of data between these two points. This is a data gap.*

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**INITIAL RESPONSE:** The Companies disagree that this is a data gap. Refer to response to comment 22. The figures were prepared using standard geologic practice. That is why the lenses are queried. This is accepted geologic interpretation and map representation technique.

*NDEP response (Specific Comment 51, April 21, 2008 letter): Response to comment 22 is not acceptable (see above).*

**FINAL RESPONSE:** Refer to the final response to Comment No. 33.

76. *Volume II, Figure 4-6; isoconcentration contours were provided for the alluvial aquifer, why were not isoconcentration contours provided for the Fine Grained Upper Muddy Creek Formation. The concentration values for some analytes are quite high and are possibly indicative of free phase product. Please provide such Figures for the analytes listed below.*

1,4-DCB  
Benzene  
1,2,4-TCB  
1,2-DCB  
1,4-DCB  
Arsenic  
Benzene  
CBZ  
CT  
CF  
g-BHC  
PCE

**FINAL RESPONSE:** Additional data for the UMCf will be generated by the Companies DNAPL investigation scheduled to be conducted in early 2008 on Tronox property. In addition, Tronox recently completed its investigation in the inter-GWTS area and the investigation data must be reviewed. The Companies would like to collect and review and incorporate all appropriate data before providing isoconcentration contour maps for the UMCf.

77. *Volume II, Figure 4-18; the carbon tetrachloride plume contours appear to be truncated primarily due to high laboratory detection limits.*

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**FINAL RESPONSE:** The NDEP is correct. It is primarily due to the high laboratory detection limits caused by matrix interferences for these samples. With the high VOC concentrations detected in the samples, the laboratory is unable to achieve lower detection limits without damaging their instruments. As detected concentrations decrease, the laboratory detection limits will improve.

78. *Volume II, Figure 4-20; the tetrachloroethene map also contains some very high detection limits that influences contouring.*

**FINAL RESPONSE:** See response to comment 77.

79. *Volume II, Figure 4-39; where the EPA does not have an established MCL how was the minimum contour level established? For example, on this map, how was the minimum contour for dimethyl phosphorodithioic acid established? Figure 4-42; The wells downgradient of the extraction wells and upgradient of Boulder Highway were not sampled for TDS? If this data is available, please revise and resubmit this Figure with all applicable data. This same question applies to Figures 4-33, 4-35, 4-37, and 4-41.*

**INITIAL RESPONSE:** This figure was prepared using standard industry (geochemistry) practice to prepare Chemical Isoconcentration maps based on logarithmic scale. The database will be queried to determine if these wells were ever sampled for TDS and, if data are available, they will be included on the map.

*NDEP response (Specific Comment 51, April 21, 2008 letter): This response does not completely answer the NDEP's question. Also, groundwater monitoring wells exist between the POSSM GWTS and the monitor wells at Boulder Highway. Presumably data exists for these wells so why was not the contour map on Figure 4-42 extended through this area?*

**FINAL RESPONSE:** Figure 4-39 has been revised. The revised contour interval for Figure 4-39 (dimethyl phosphorodithioic acid) is based on the NDEP's approved (NDEP, 2007) Drinking Water Human Health Toxicity Criteria developed by Integral Consulting Inc., (Integral, 2006) to address the five Organic Acids (including DMPT) which are a subset of SRCs. The Drinking Water Human Health Toxicity Criteria developed for DMPT is 3,700 ug/l (i.e., and serves as the basis for the revised Figure 4-39).

Figure 4-42 displays all available data for the area between the GWTS extraction wells and Boulder Highway. In that area (see Figure 6-1), the only wells included in a routine

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monitoring programs are the downgradient Consent Order Wells (H-56A , H-49A, and H-58A) and the current and former north Transect monitor wells (H-10A, H-10R, H-17R, H-49, H-50, H-51, H-56 and MC-62) and the current south Transect monitor wells (MC-46, MC-47, MC-48, MC-49, MC-50, MC-51 and MC-53). The transect and consent order monitoring programs do not include TDS as an analyte. Of these wells, only samples from H-56A were analyzed for TDS. This is because H-56A was included in the Downgradient Sampling Area event conducted in July 2006. Samples collected during this event were analyzed for TDS. There are other wells not included in any of the routine sampling programs. None of the samples collected during the time range displayed on the illustrations were analyzed for TDS.

The other figures referenced in this comment were Figure 4-33 (Carbophenothion In Alluvial Aquifer Groundwater), Figure 4-35 (2,3,7,8-TCDD In Alluvial Aquifer Groundwater), Figure 4-37 [Bis(4-Chlorophenyl) Disulfide In Alluvial Aquifer Groundwater], And Figure 4-41 (Arsenic In Alluvial Aquifer Groundwater). The explanation is the same as for Figure 4-42. Samples collected from the current and former wells in this area were not analyzed for these compounds and constituent in the timeframe used to prepare the CSM maps.