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File No. 29213

Ms. Mary Peterson
Remedial Project Manager
U.S. Environmental Protection Agency
901 North Fifth Street
Kansas City, KS 66101

Subject: **Response to EPA's Letter Dated 6 May 2004
Chemical Commodities, Inc.
Olathe, Kansas**

Dear Ms. Peterson:

On behalf of The Boeing Company (Boeing) this letter provides a response to the Environmental Protection Agency's (EPA) letter dated 6 May 2004 regarding Conditional Approval of the Draft Feasibility Study Report. The responses provided herein are to each general comment provided by the EPA, Kansas Department of Health and Environment (KDHE), Chemical Commodities, Inc. (CCI) Concerned Citizen's Group (CCG), and the City of Olathe as presented in EPA's 6 May 2004 letter. EPA's Conditions for Approval presented in the 6 May 2004 letter have already been addressed and documented in the Feasibility Study Addendum, prepared by GeoSyntec Consultants, dated 9 June 2004.

Please feel free to call me if you have additional questions or concerns.

Sincerely,

Michael D. Basel, Ph.D., P.E.
Vice President

c: **The Boeing Company; Attn: Brian Mossman
GeoSyntec Consultants; Attn: Mark Schultheis**

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Response to Comments
USEPA General Comments
Dated May 6, 2004

Comment 1. *Page ES-2, last sentence in first paragraph - The Remedial Investigation did not begin until 2000. Site characterization activities were conducted in the mid 1990's.*

Response: The comment is noted.

Comment 2. *Figure ES-3 and Figure 2-5, Conceptual Site Model - It would be helpful to have elevations or a vertical scale in feet along the right side of the figure to give the reader a general idea of depths.*

Response: Figure ES-3 in the Revised Executive Summary (ES) submitted in the Feasibility Study (FS) Addendum (GeoSyntec, dated 9 June 2004) now contains a vertical scale showing elevations relative to mean sea level (MSL) as requested.

Comment 3. *Page ES-2, last sentence - The sentence states that the Pennsylvanian bedrock has not been developed as a significant groundwater resource due to low well yields. The EPA does not believe this statement is consistent with historic groundwater use in the area. At one time, the groundwater was the source of potable water in the area around the site. It may be more appropriate to say that the Pennsylvanian bedrock has not recently been relied upon as a significant groundwater resource.*

Response: It is accurate to say that the Pennsylvanian bedrock has not recently been relied upon as a significant groundwater resource. The assessment that the Pennsylvanian bedrock has not been developed as a significant groundwater resource is based on the following:

- Documented presence of elevated salinity at depths greater than 100 feet (O'Connor, 1971);
- Monitoring wells in the area have very low productivity;
- Anecdotal evidence that no wells in the general area have been identified with sustainable groundwater yields greater than 10 gpm.
- A search of the state well registry revealed very few wells producing water from bedrock in the local area. Most groundwater production is from alluvial deposits associated with rivers and streams.

Comment 4. *Figure ES-4 - The text on page ES-2 indicates that the direction of groundwater flow is shown on Figure ES-4. However, the direction of groundwater flow may not be obvious to the general public when looking at this figure. It is suggested that an arrow be added to the figure to show the general direction of groundwater flow.*

Response: Figure ES-4 in the Revised ES has been modified to contain an arrow showing direction of groundwater flow.

Comment 5. *Page ES-9, Bullet G2 (and other places in the document) - The text states that the installation of a second trench on Ocheltree Street is dependent on the effectiveness of the methodology as it is employed in the trench along the CCI property boundary. The EPA understands the wisdom of a phased approach in that lessons learned from the first trench can be used to optimize the design of the Ocheltree Street trench. However, the document does not indicate any criteria for determining the effectiveness of the first trench, or give any time frames for making such a determination. It is EPA's preference that the second trench be installed a short time after the first trench based on resolution of any questions pertaining to installation and/or construction.*

Response: The FS Report was prepared in an expedited time frame to accommodate USEPA's schedule for issuing a Record of Decision for the Site. Many issues remain to be resolved prior to implementation of a groundwater remedy on Site and off Site. Among these issues are details such as the best method for delivery of chemical oxidant solution to the transport zone (i.e., one long trench, several short trenches, large bore injection wells, etc.), the optimum size and specific location of the delivery system, and the optimum rate of addition of chemical oxidant. Given that these details are yet to be determined, it is difficult to predict the specific time during which the second system may be installed. It is expected that the needed design assessment could be conducted and the resultant system design could be ascertained within a period of months after installation of the initial injection system along the downgradient (western) boundary of the Site. Assuming that the initial injection system is found to be effective, a second system could be installed promptly thereafter. Proceeding in logical steps would help not only maximize technical efficiency, it also would help minimize duration of construction activities in the residential area off Site.

Comment 6. *Page ES-11, fourth bullet - Regarding the formal review of remediation effectiveness every five years, the text should state that this is a requirement under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for sites where waste is left in place or where the remedial actions do not allow for unrestricted land use.*

Response: The Revised ES now reflects the fact that formal review of remediation every five years is a requirement of CERCLA.

Comment 7. *Page ES-15, first sentence - The EPA disagrees with the statement that the no action alternative for groundwater is currently protective. The EPA continues to collect indoor air data to identify additional homes that may contain chlorinated solvent vapors above health-based action levels. The groundwater plume is not being contained or treated in any way currently that would serve to reduce or prevent the further migration of contaminants that could cause further vapor intrusion.*

Response: The indicated statement about the no action alternative for groundwater has been modified in the Revised ES.

Comment 8. *Page ES-17, second bullet - Replace “deed restrictions” with “land use restrictions”. The term land use restrictions is preferable to EPA, and allows inclusion of the state’s environmental use legislation.*

Response: The language has been changed from “deed restrictions” to “land use restrictions” in the Revised ES.

Comment 9. *Section 2.3.2, Pages 8-9 - Respondent parties to the various orders should be identified. The sentence regarding the September 1995 order makes it sound as if the order was issued to Groundwater Technology, Inc. This section should also discuss the amendment to the RI/FS order for the installation of vapor control systems, the soil pile/building action memo, and the recent order with Burlington Northern Santa Fe Railway Company (BNSF).*

Response: The various orders at the CCI Site and the Respondents to each order are provided below:

- October 12, 1977: KDHE issued Solid Waste Order No. 77-15 to CCI Facility requiring CCI to cease disposing of hazardous wastes in sanitary landfills
- May 1978: City of Olathe issued court order to CCI requiring CCI to comply with the fire code, install an earth and dike system and remove discharged chemicals and to restore the property to a safe condition
- May 10, 1985: USEPA and CCI entered into an Administrative Order on Consent, Docket No. 85-F-0039. CCI agreed to undertake measures to control surface water run-off from the facility and blowing dust. CCI was also required to test the integrity of its USTs to determine whether any releases were occurring.

- April 24, 1989: USEPA issued a Unilateral Administrative Order (UAO) to CCI and Mr. Gershon (Docket No. 89-F-0008). The UAO required the performance of removal activities at the CCI facility.
- July 1989: When the CCI Facility failed to commit the necessary resources for cleanup, USEPA Regional Administrator signed an Action Memorandum requesting removal action by USEPA's Emergency Response and Cleanup Services contractor
- September 1995: USEPA issued an order to Rockwell International, which contracted Groundwater Technology, Inc. (GTI) to perform a characterization of the CCI Site
- October 1, 1998: USEPA entered into an AOC, Docket No. CERCLA-7-99-0001 with AlliedSignal, The Boeing Company, Mallinckrodt, Inc., Lucent Technologies, Inc., the United States Defense Logistics Agency and the United States Department of Energy. The AOC required operation of the interceptor trench and fence maintenance.
- May 15, 2000, USEPA entered into an AOC, Docket No. CERCLA-7-2000-0019 with The Boeing Company and the United States Defense Logistics Agency, requiring a Remedial Investigation and Feasibility Study (RI/FS).
- December 23, 2002, Action Memorandum issued by USEPA requesting a Removal Action to include installation of ventilation systems in residences near the Site and air monitoring of additional homes in the area.
- October 28, 2003, USEPA entered into an AOC, Docket No. CERCLA-07-2003-0036 with Burlington Northern Santa Fe Railway Company, requiring closure of the interceptor trench.

Comment 10. *Section 2.5, Page 11, first full sentence - See General Comment number 3 above.*

Response: See response to General Comment #3.

Comment 11. *Section 3.2 - A subsection discussing indoor air data should be added to the document.*

Response: Information regarding indoor air data was incorporated as Section 4 of the FS Addendum (GeoSyntec, 2004).

Comment 12. *Section 3.2.4, Page 16, second full paragraph - This paragraph discusses the continued presence of DNAPL on the site, and provides some factors that have served to retard the rate of DNAPL dissolution in groundwater and inhibit downward migration of DNAPL. If these statements are true, why wasn't DNAPL detected during earlier sampling events during 2000-2002? It would be helpful to add some text that might explain this apparent discrepancy.*

Response: Basic transport and attenuation characteristics of DNAPL is a topic of considerable current research due to the inherent difficulties in using existing investigation techniques to ascertain whether, and to what extent, DNAPL exists at various sites. Chapter 13 of Dense Chlorinated Solvents and Other DNAPLs in Groundwater (Pankow and Cherry, 1996) provides a lengthy discussion of the challenges inherent in diagnosing and assessing DNAPL in the subsurface. The conditions identified in the comment do not indicate a discrepancy in field results obtained at different times but simply corroborate the difficulty in consistently finding DNAPL during well gauging activities. The detection of DNAPL during some but not all monitoring events could have been caused by changes in water levels, pumping conditions, or local variations in the presence of DNAPL over time.

Comment 13. *Section 3.3, Page 17, first sentence - This sentence states that DNAPL may have migrated laterally westward to a bedrock low in the vicinity of MW-26B. Do we know that there is a bedrock low there, or is this an assumption based on the high TCE concentrations in that area? If there is data to support the notion of the bedrock low, it would be good to reference that data or a particular figure that might depict the bedrock low. If it is an assumption, then the text should make that clear.*

Response: The Phase II Bedrock Groundwater Investigation Report (Haley & Aldrich, 2004) identified a bedrock low trending from boring GP-01 towards well MW-26B based on the geologic information obtained from boring logs. The figures provided in the Phase II Report provide further definition of the bedrock surface.

Comment 14. *Section 4.5.3, Page 28, third paragraph - MCLs are not considered applicable, but are considered relevant and appropriate.*

Response: Comment is noted.

Comment 15. *Section 6.4.4.5, Page 47, third full paragraph - The reference to Figure B1-5 should be Figure B1-6.*

Response: Comment is noted.

Comment 16. *Section 6.4.4.10, Page 51 - The reference to Figure B1-6 should be Figure B1-7.*

Response: Comment is noted.

Comment 17. *Section 6.4.5.1, Page 53 - The heading for the S3A alternative should be consistent with the language used in the heading for the S2A alternative in section 6.4.4.1 on*

page 43.

Response: Comment is noted.

Comment 18. *Section 7.4.4.5, Page 106, first sentence - The sentence states that pump and treat will provide reduction of volume and toxicity. The sentence should be revised to state that pump and treat will provide reduction of mobility and volume, but not toxicity.*

Response: Comment is noted.

Comment 19. *Section 8.3.10, Page 124 - This section should discuss the fact that an active community group exists at the site, and that they are engaged in the cleanup process.*

Response: It is noted that the Community Action Group (CAG) exists. There has been a high level of interaction and coordination with this community group throughout the process. The referenced text section is updated in the alternative scenario S3D attachment to the FS Addendum (see Section 3.10). The update includes USEPA's suggested comment regarding the CAG.

Comment 20. *Table D-1 (and other cost estimate tables) - For fine grading and vegetation, the total square yards for the entire site is shown as 2,410 SY. However, my calculations result in 7,260 SY.*

Response: The comment correctly identifies the total square yards for the entire site should be 7,260 SY. This corrected area has been used for the cost estimate prepared for alternative scenario S3D presented in the FS Addendum. The cost of fine grading is shown as \$7,260 (\$1.00 per square yard).

Comment 21. *Appendix D, Cost Tables - Each cost estimate for the soil alternatives includes a new 6 foot chain link fence around the perimeter of the site. Why would a new fence be needed when there is an existing 6 foot chain link fence?*

Response: The new fence shown in the soil alternatives is intended to limit access to all aspects of the excavation project. The existing fence would need to be improved, relocated in places, and added sections to allow a fence fully enclosing the excavation area and excavation equipment to limit access.

Comment 22. *Appendix C, MNA Evaluation - The EPA has numerous specific comments regarding the MNA evaluation. These comments are included as an attachment to this letter. The EPA is considering the applicability of MNA as opposed to groundwater monitoring in light*

of site conditions and the requirements of EPA's and the State's MNA policies.

In reviewing the FS Report and preparing this letter, I have focused on those revisions necessary in order to produce an FS Report that can serve as a sound basis for making the selection of a preferred alternative. I have chosen not to request revisions to the document on issues where we have general disagreements. These areas include the following:

- *Plume Stability - The EPA does not agree with Boeing's position that the dissolved plume is stable and not migrating. Since the majority of flow at the site is fracture flow in bedrock, and only 1 large fracture has been located, it is presumptive to state that the plume is stable. The EPA believes that there is some likelihood of other fractures similar to that found on Ocheltree Street at well MW-26B.*

Response: There currently are no temporal concentration data to suggest that the dissolved phase plume is continuing to migrate. The plume currently is expected to be stable as a result of the termination of historical facility operations, the low groundwater velocities, and natural attenuation of groundwater contaminants. It is recognized that a key component of the groundwater monitoring program for the Site will be to provide sufficient monitoring at appropriate locations to further evaluate whether the groundwater plume is stable. The current understanding of the groundwater and contaminant flow system as supported by data presented in the Phase II Bedrock Groundwater Investigation Report (Haley & Aldrich, 2004) consists of flow in a interconnected network of fractures that approximate an equivalent porous medium. The characteristics of groundwater levels, recharge, and VOC concentrations in well MW-26B are consistent with this conceptual model, suggesting that the fracture observed during drilling of this well is a very localized feature that does not significantly effect groundwater flow or contaminant migration.

- *Use of Private Wells - The EPA does not support Boeing's conclusions regarding the well yields, and their position that the aquifer could not supply enough water for a single household. On the contrary, the aquifer has historically served as the primary source of potable water for the community.*

Response: Conclusions regarding the well yields are based on the fact that all monitoring wells installed in the vicinity of the Site have consistent and similar low recovery during groundwater monitoring events. No wells have been identified, either existing or historical, that provided significant yields. In addition, water from deeper zones would not be appropriate for use as potable water since regionally, salinity in water increases at depths greater than 100 feet (O'Connor, 1971).

- *Migration Potential of Contaminant Mass in Deeper Soils - The EPA does not agree with*

Boeing's position that the contaminant mass in deeper soils is stable and poses no significant threat of migration to groundwater. As the natural groundwater level rises and falls, contaminant mass in the soils will continue to leach and dissolve into the groundwater. The EPA believes that the deeper soils serve as a continuing source of groundwater contamination, along with the DNAPL found on the site.

Response: The current understanding of the groundwater flow system suggests that VOC mass within the groundwater transport zone in the bedrock represents a much larger quantity than the potential mass in the vadose zone. Mass within the bedrock zone may be present as immobile separate phase product (residual phase), sorbed to the rock matrix, and diffused into the secondary porosity of the rock matrix. This mass within the bedrock groundwater zone will not be affected by variations in the groundwater level over time or through leaching. It is recognized that VOC mass in the vadose zone will likely continue to add some fraction of mass to the groundwater zone. This potential is addressed by groundwater alternatives G2 (in situ chemical oxidation) and G3 (pump and treat). In addition, the new soil alternative scenario S3D included in the FS Addendum would provide removal of greater than 50% of this VOC mass in the vadose zone.

The concept of the permanganate trenches has been generally well received. The EPA would like to explore the possibility of trenching into the bedrock (to a reasonable extent) rather than stopping at the top of rock. This can be explored further during the design phase. The purpose is to improve or enhance the delivery of the permanganate into the formation. Also, it may be wise to extend the trench along the site perimeter farther to the north.

Response: This concept and other details regarding the construction of the injection system will be explored further during the design phase.

The EPA has given some consideration to using existing wells or installing a small number of pumping wells onsite in the DNAPL areas to recover DNAPL and treat the high concentrations areas. No revisions are needed in the FS since the FS thoroughly evaluates a pump and treat alternative. The DNAPL recovery concept would be a small fraction of the pump and treat system described in the FS.

Response: Comment is noted. It is noted that pumping wells would have much lower radius of influence than the proposed injection systems. Moreover, it has been observed that the existing interceptor trench has had little effect on the continued presence or recovery of DNAPL.

Response to Comments
USEPA Comments on MNA Evaluation, Appendix C
Dated April 27, 2004

Comment 1. *C.2.3.3 (page 5) - Report discusses VOC flow at 14.4 feet per year which takes into account retardation. Using these values, and knowing extent of contamination, the temporal origin of the plume would have been in 1900. Either the yearly flow rate or the retardation factor needs to be re-evaluated.*

Response: The calculation of dissolved phase VOC flow at 14.4 feet per year is based on measurements of current hydraulic characteristics at/near the Site. Although this provides an estimate of current migration rates, migration may have been different in the past. It should be recognized that some of the migration likely occurred as DNAPL flowing atop the bedrock surface and not as dissolved constituents in groundwater. The observation of a bedrock low near well MW-26B would have caused DNAPL flow toward this well, accounting for the high groundwater concentrations now found at this location. Regardless of the past migration of groundwater constituents, the potential for future migration has been reduced because the source of the releases have been eliminated and further DNAPL migration is limited due to retardation via sorption and matrix diffusion.

Comment 2. *C.3.1 (page 7) The report indicates substantial mass loss of contaminants at the site as a rationale for suggesting MNA is occurring at site. While some wells have shown a reduction of VOCs, most wells have not. The mass has shifted from one compound to another through reductive dehalogenation.*

Response: Mass loss at the CCI Site is difficult to define because it is masked by a variety of factors including the likely dominance of mass present in the bedrock groundwater zone as immobile residual phase product, the fraction sorbed onto the rock matrix, and diffused into the secondary porosity. These mechanisms basically represent a large buffering system that maintains a nearly-constant concentration regardless of the mass loss due to biodegradation. The greatest indicator of biodegradation at the Site is the significant presence at many wells of compounds, such as cis-1,2-DCE, which would only have resulted from biodegradation. Because of the difficulty in defining the current rate of mass loss due to biodegradation, the groundwater monitoring program specified as part of the overall groundwater remedy would need to include confirmation that the groundwater plume remains stable or shrinks over time.

Comment 3. *C.3.1.(page 8) - Report indicates a significant reduction in concentrations of*

VOCs 1500 feet from the site. On the surface this appears to be correct, however it is important to recognize fracture flow is the main component of contaminant movement offsite. As shown in well 26B when a fracture is intercepted by a well, high concentrations of VOC are found.

Response: The current understanding of the groundwater and contaminant flow system, as supported by data presented in the Phase II Bedrock Groundwater Investigation Report (Haley & Aldrich, 2004), consists of flow in an interconnected network of fractures that approximate an equivalent porous medium. The measurement of groundwater levels in well MW-26B are consistent with other wells screened in the bedrock, suggesting that the fracture observed during drilling of this well does not control groundwater flow but is simply a small component of the interconnected fracture network. High VOC concentrations at MW-26B are believed to be a result of DNAPL migration along the bedrock surface that occurred when the facility was active. The fact that high VOC concentrations remain in this area supports the conclusion that there is very little groundwater flow through this area. The hydraulic conductivity estimated from a rising head test conducted in MW-26B is 9.9×10^{-6} cm/sec which further suggests that the observed fracture is a local feature that does not conduct significant groundwater. So, although fracture flow is occurring, there are no current data to suggest that contaminants are migrating off Site via a limited set of large fractures.

Comment 4. *C.3.1 (page 8) Report indicates there are fewer instances of reductive dehalogenation. It states this may be due to rapid biological oxidation. A more likely scenario would be the presence of oxygen in the formation which precludes the dehalogenation process from occurring. Dehalogenation occurs generally in anaerobic conditions. Also, there is a possibility there are other electron donors in the formation (such as nitrates, or sulfates) which are more readily used in anaerobic degradation.*

Response: Comment is noted. Other electron donors in the formation, such as nitrates or sulfates, may be facilitating other reactions.

Comment 5. *C.3.1 (page 8) - While there appears to be reductive dehalogenation occurring at the site it is not "across the board" in well TMW 1 for example, the levels of TCE have dropped considerably and DCE has increased. However, carbon tetrachloride has also decreased significantly without a corresponding rise in chloroform. This is probably due to competing electron donors.*

Response: The presence of multiple parent compounds, multiple degradation processes, heterogeneous subsurface conditions, and variations in historical release patterns and locations of different products would certainly cause differing effects of reductive dehalogenation on various parent compounds.

Comment 6. *C.3.2 (page 9) The report fails to indicate the possibility that chloroform was disposed of on site. The report alludes chloroform is present solely as a degradation product of carbon tetrachloride.*

Response: Comment is noted. Chloroform may be present as either a product of degradation or due to historical releases.

Comment 7. *C.4.2.(page 12) - No calculation of the mass of contaminants removed by the trench exists.*

Response: As stated in Section 2.3.2 of the Feasibility Study, the volume of liquid that has been removed by the trench is approximately 1,000,000 gallons (500,000 gallons removed by USEPA from 1991 through 1998, and 500,000 gallons pursuant to the Time Critical Removal Actions Order on Consent, effective October 1998). Documentation is not available to confirm mass of contaminants removed during operation of the interceptor trench treatment system by EPA (1991 through 1998). During TCRA activities (beginning November 1998), trench samples were collected during the first 3 quarters of dewatering activities (November 1998, March 1999, and June 1999) and in February 2003. These analytical results have been used to calculate an estimated mass of contaminants removed resulting in a range of 97 to 195 pounds of contaminants removed from November 1998 through May 2004.

Comment 8. *C.4.3. (Page 13) - The report infers there is plume stability. This cannot be substantiated at this time. Since flow is dictated for the most part by fracture flow, and only one large fracture has been found at present, it is presumptive to indicate plume stability.*

Response: Currently there are no temporal concentration data to suggest that the dissolved phase plume is continuing to migrate. The plume is currently expected to be stable as a result of the termination of historical facility operations, the low groundwater velocities, and natural attenuation of groundwater contaminants. It is recognized that a key component of the groundwater monitoring program for the Site will be to provide sufficient monitoring at appropriate locations to further evaluate whether the groundwater plume is stable. The current understanding of the groundwater and contaminant flow system as supported by data presented in the Phase II Bedrock Groundwater Investigation Report (Haley & Aldrich, 2004) consists of flow in a interconnected network of fractures that approximate an equivalent porous medium. The measurement of groundwater levels in well MW-26B is consistent with other wells screened in the bedrock and does not indicate that contaminant flow is controlled by one or more large fractures.

Response to Comments
Kansas Department of Health and Environment
Dated April 23, 2004

A number of comments in the Kansas Department of Health and Environment (KDHE) letter dated April 23, 2004 are incorporated into the USEPA comment letter, and are addressed in response to that letter. Responses to these comments (below) refer to the response to the USEPA comment. The remaining KDHE comments are addressed below.

Comment 1. *A draft version of the Feasibility Study Report was not issued. Therefore, KDHE/BER considers this document to be a draft for the purpose of our review. Future deliverables provided by The Boeing Company should be issued in draft format for regulatory review.*

Response: Comment is noted.

Comment 2. *Page 11, Section 2.5, Hydrogeology. It is stated that “The Pennsylvanian bedrock throughout the region has not been developed as a significant groundwater source for municipal, agricultural, or industrial supply since well yields are typically less than 10 gallons per minute (gpm) and water salinity increases at depths below 100 feet (O’Connor, 1971).” However, a private well exists downgradient of the site that was historically used for drinking water. Additionally, a review of the Kansas Geological Survey water well records database indicates that private wells currently exist within approximately four miles of the site or have existed in the past in this region. Additionally, the Kansas Water Well records only present wells that have been registered since 1975. Any wells installed before that time are not included in the database.*

It is also stated that the private well downgradient of the site should be plugged in accordance with K.A.R. 28-30-7 and the Olathe water well ordinance. However, as KDHE/BER understands, the Olathe water well ordinance was developed as a direct result of the contamination and concerns at the CCI site. Plugging this well will not prevent the contamination at the site and will eliminate a monitoring point that has historically shown trichloroethylene above EPA MCLs.

Response: See response to USEPA General Comment #3. Construction information for the private well downgradient of the site is not known and the well has not been used in over 30 years. By definition in the Ordinance, this well fits into the category of a well that should be abandoned. Two monitoring wells (one shallow and one deeper) of known construction have been installed adjacent to this well. Therefore, monitoring at this location can continue regardless of whether the private, unused well is left intact or abandoned.

Comment 3. *Page 16, Section 3.2.4, Groundwater. It is stated “The low groundwater flux and dissolved phase TCE concentrations near the saturation limit indicate that the rate of dissolution of DNAPL into groundwater is slow. Also, insufficient driving head to overcome pore entry pressure has inhibited downward migration of DNAPL (H&A, 2004a).” Based on the above statement, the following concerns are presented. It is stated that the rate of TCE dissolution is slow. However, TCE concentrations near 100,000 micrograms per liter continue to be measured offsite. Additionally, no groundwater wells have been installed in the bedrock directly below the source areas to monitor DNAPL. The conclusion that the downward migration of DNAPL is inhibited may not necessarily be correct.*

Response: See response to USEPA Comments on MNA Evaluation, Appendix C, Comments #1, #2, #3, and #8.

Comment 4. *Page 25, Section 4.3, Remedial Action Objectives. It is concluded that groundwater is currently not being extracted and will not be extracted for domestic use in the future for several reasons such as shallow groundwater contained within clay or low permeability bedrock, a small saturated thickness, and a low rate of pumping from wells installed in the transport zone. It is stated that “It is estimated that the water production rate from shallow groundwater wells would only be 14 gallons per day (H&A, 2004c).” However, historical data indicates that private water wells have been installed in the site area and have been used for potable supplies. It has been noted in the offsite private well near the site that groundwater flow was observed in the well by Boeing personnel. Regardless of limited flow, wells can be hooked up to cisterns (e.g., underground storage reservoirs) and can be pumped at their capacity until the storage reservoir is filled.*

As stated in previous comments, the Olathe Ordinance 03-17 was enacted as a direct consequence of the CCI site. The CCI site contamination has restricted the potential for offsite property owners to use the available groundwater resource to their benefit.

Response: Comment is noted. Regardless of which groundwater remedy is chosen for the Site, cleanup to MCLs will require reliance on natural attenuation mechanisms. The City of Olathe

Ordinance provides important protections against extraction of groundwater for drinking water purposes in the interim.

Comment 5. Page 26, Section 4.5.2, Soil Target Cleanup Levels and Volumes. EPA Region IX PRGs and the KDHE Risk-Based Standards for Kansas residential soil target cleanup levels should be considered for the onsite soil cleanup levels. These standards minimize the need for complicated and sometimes limited risk assessments and provide consistency in cleanup of sites across the state.

Response: Cleanups at Superfund sites generally are based on a combination of factors, including applicable or relevant and appropriate requirements (ARARs) and risk assessment. The CERCLA process fully embraces the use of site-specific risk assessment information to assess human health and ecological risk associated with a site, and to assess the protectiveness of various proposed remedies.

The KDHE comment proposes consideration of EPA Region IX PRGs and the KDHE Risk-Based Standards for Kansas residential soil target cleanup levels for the onsite soil cleanup levels. USEPA Region IX PRGs normally are used as conservative screening criteria to assess whether a site cleanup is required, or otherwise to remove a site from regulatory concern. Generally, if a site cannot be removed from regulatory concern based on Region IX PRGs, more site-specific risk assessment is performed. Region IX PRGs normally are not adopted as cleanup criteria, and it is unnecessary to do so at the CCI Site given that a site-specific risk assessment was performed and adopted by USEPA and KDHE.

The KDHE Risk-Based Standards for Kansas residential soil target cleanup levels would not appropriately be applied to the CCI Site cleanup because a land use restriction will be applied to the CCI Site precluding future residential use. As a result, it is most appropriate to base the CCI Site cleanup on the normal Superfund approach, using risk assessment methodology to assess the protectiveness of the various remedies proposed for the Site.

Comment 6. Page 28, Section 4.5.3, Groundwater Target Cleanup Levels. EPA MCLs should apply as target cleanup levels for both on site and off site groundwater. Although an extended time period may be necessary to reach these goals, groundwater in the area is a potential drinking source. Additionally, surface water is threatened by the groundwater contamination in the site area. The Olathe Ordinance 03-17 was implemented by the City as a result of the groundwater contamination at the CCI site. The ordinance should not be considered as an active remedy for the groundwater contamination plume.

Response: As is stated in the FS Report, MCLs are the target cleanup levels for the off Site cleanup. For the on Site cleanup, MCLs may also be adopted as the on Site target cleanup goals. It should be noted

that the land use restrictions would preclude use of on Site and off Site groundwater for drinking water purposes.

The KDHE comment also states that surface water is threatened by groundwater contamination. Sampling results obtained to date do not support such an assertion, nor do fate and transport analyses conducted. One objective of monitored natural attenuation, which is an element of every groundwater remedy proposed for the Site, will be to continue to monitor plume migration and to assess the ability of the plume to pose a threat to surface water in the future.

Comment 7. Pages 41 through 51, Section 6.4.4, S2-Off-Site Disposal and LTTD. *It is suggested that The Boeing Company revisit its estimates for the time required to LTTD soils at the site. The estimates of up to 3,000 days to complete excavation and LTTD seem excessive. KDHE/BER has overseen projects that have treated soils in a much shorter time frame. Additionally, it is stated that trucks are proposed to transport soils offsite. However, an adjacent rail line may be more appropriate to transport soils offsite. The Boeing Company also presents concerns regarding emissions. As KDHE/BER envisions, only portions of the excavation will be open at any given time. A planned and staged series of excavations, in lieu of one large open excavation, will minimize the VOC emissions into the neighborhood. Community air monitoring and action plan development will provide protection to adjacent properties.*

Response: It is understood that the excavation and treatment of soils using LTTD may be completed in a shorter timeframe. As noted in 6.4.4.5 on Page 48, the calculation of excavation and treatment under scenario S2C considers a range from 300 to 3,000 days. This range takes into account various factors such as the volume of soils treated per hour, timeframes allowed for different working scenarios (i.e., 5 or 7 day work weeks and 10 or 24 hour work days), and the possible need for double passes of materials excavated at depth through the LTTD unit due to excess moisture.

As requested by EPA, the option for transport of soils off site by rail has been addressed in USEPA Condition for Approval Comment #2, presented in the FS Addendum.

It is understood that excavation of on site soils may be planned accordingly to reduce emissions. However, any excavation activities, whether addressed as one large excavation or in a staged series of excavations and with appropriate engineering controls will still have the potential for significant VOC emissions.

Comment 8. Pages 52 through 59, Section 6.4.5, S3 - Off-Site Disposal. *See comment number 7. The duration of up to 140 days for the small 1.5 acre site seem excessive with regard to an*

excavation-only scenario. KDHE/BER suggests that The Boeing Company recalculate its quantities within a more reasonable time frame.

Response: The estimate of 140 days is associated with alternative scenario S3C, which contemplates excavation and off-Site disposal of 50,000 cubic yards of soil. With a bulking factor of 1.4 excavated cubic yards for every in-place cubic yard, 20 cubic yards per truck, and 25 truck trips per day, the calculation of 140 days is accurate.

Comment 9. Pages 60 through 63, Section 6.4.6, S4 - Capping. KDHE/BER does not consider the capping alternative appropriate for this site for the following reasons. The source area is readily accessible for excavation and soils are present to depths less than 20 feet below ground surface. The soil source area is contaminated throughout its vertical depth and is likely contributing to the DNAPL present beneath the site. The cap will not prevent groundwater from intercepting and flowing through contaminated soils and DNAPL. Based on KDHE/BER's monitored natural attenuation (MNA) policy, the source area requires active treatment for MNA to be considered.

Response: This comment includes several suggestions that are not supported by the site understanding that has been developed using soil and groundwater data collected at the site. Each of these issues is further discussed in the following paragraphs. In summary, capping is an appropriate component of the comprehensive site remedy given the current site conditions and intended purpose of the cap as part of the collective approach.

Distribution of Contaminants. The majority of contamination at the site is contained in the bedrock underlying the shallow soils, and not in the shallow, unconsolidated soils. As detailed in Table 1 of the FS Addendum, approximately 4,000 pounds of VOCs are present in soils above the water table and approximately 928 pounds of VOCs are present in soils within the water bearing zone down to the top of bedrock. Although the VOC mass present in the bedrock cannot be determined with accuracy, an assessment of the locations where DNAPL has been detected indicates that the mass present in bedrock is at least an order of magnitude higher than estimated for the vadose zone. Therefore, groundwater is primarily affected, and will continue to be primarily affected, by contaminants in the bedrock and not in the overlying soils.

Accessibility of Source Area. It is not accurate to suggest that the source area is accessible for excavation. The majority of VOC mass, and thus the source of groundwater contamination, is primarily present in bedrock that would be impracticable to excavate. Even if shallow soils are excavated, the majority of mass would persist in the bedrock and would continue to impact groundwater.

Mass in Shallow Soils. The VOCs contained in the shallow soils overlying bedrock are not uniformly

distributed. As specified in the FS Addendum, a large majority of the contamination present in the shallow soils is present at relatively shallow depths in a few limited areas. In response to the request from EPA, an additional alternative was specified in the FS Addendum that would provide limited excavation of shallow soils, providing removal of over 50% of the mass present in shallow soils above the groundwater zone. This alternative would provide removal of metals-impacted soils and soils with the highest concentrations of VOCs.

Purpose of Capping. The purpose of the capping component of the soil alternatives is to provide a clean soil cover with which to facilitate landscaping and prevent potential for unintended contact with underlying soils. The cap is not intended to *prevent groundwater from intercepting and flowing through contaminated soils and DNAPL*. The component of the preferred groundwater alternative that will address groundwater contaminants is chemical oxidation using potassium permanganate.

Source Area Treatment. Source area treatment technologies were considered in the FS consistent with USEPA requirements and KDHE/BER MNA policy. As identified in Appendix C of the FS, a number of source area measures have been completed or are being considered consistent with the definition of source area treatment provided in the USEPA Directive 9200-4-17P titled *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*. Source area activities that have been completed include removal of leaking storage tanks, termination of facility operations, removal of historical aboveground containers and chemicals, demolition of the onsite warehouse, scraping of the top 12 inches of soil from the site and transportation off-site, and operation of a groundwater interceptor trench since 1991. These source actions eliminated the potential for new releases at the Site and also removed significant mass since operations were stopped approximately 15 years ago. A number of additional source actions were considered in the FS to provide additional mitigation of the source area. In situ chemical oxidation using potassium permanganate was included as a component of the groundwater alternative identified as the preferred remedy in the FS. In situ chemical oxidation would provide additional source area treatment and would mitigate future offsite migration of VOC in groundwater.

Comment 10. Pages 73 through 74, Section 6.5.6, G4 - Monitored Natural Attenuation. Given the concentrations in groundwater within the offsite neighborhood, KDHE/BER does not consider MNA an appropriate sole source remedy. If combined with other active groundwater treatment methods and if the soil source area is actively treated, MNA may then be appropriate portion of a remedy.

Response: Regardless of which groundwater remedy is chosen for the Site, cleanup to MCLs will require reliance on natural attenuation mechanisms. Two of the groundwater alternatives included in the FS Report provide for active treatment along with MNA.

Comment 11. Page 76, Section 7.2 Detailed Analysis Criteria, 2) Compliance with ARARs. *KDHE/BER has submitted comments regarding ARARs during review and comment for the "Technical Memorandum, Assembly of Remedial Alternatives, Chemical Commodities, Inc. Site, Olathe, Kansas, November 25, 2003." The letter submitted to EPA that included KDHE/BER's review and comment was dated December 18, 2003. Upon review of the ARARs provided in Tables 7-1 through 7-6, it appears that several of the State's ARARs that are applicable to the site have been omitted, but the federal equivalent has been provided. Additionally, several state-specific ARAR's have been omitted. Please see our comments in the above-referenced letter dated December 18, 2003.*

Response: A further review of the ARARs tables (Tables 7-1 through 7-6) in the FS Report has been conducted against the suggested list of ARARs provided by KDHE. Revised tables are attached to this Response to Comments letter at Attachment A. KDHE's ARARs list, which is not site-specific, contains a few state-specific ARARs that were identified only by their federal counterpart in the existing FS Report tables. The corresponding state ARARs have been added to the revised tables. Still other ARARs on KDHE's list, however, do not have potential to be an ARAR for the CCI Site cleanup, so there is no apparent reason to include them in the revised tables as potential ARARs. These include asbestos regulations, petroleum storage tank regulations, etc.

Comment 12. Pages 78 through 98, Soil Remedial Alternatives - Detailed Analyses. *KDHE/BER does not agree with several of the comments provided by The Boeing Company on the overall protectiveness, effectiveness, duration, aesthetics, emissions, community issues, implementability, and costs associated with the excavation scenarios provided. Excavation will reduce the mass of contaminants in the source area. Additionally, DNAPL is present beneath the source area with total depth unknown and no control has been identified to address this mass. The exposure of the top of bedrock during excavation will allow a treatment system to be installed or emplaced to address groundwater and DNAPL immediately beneath the source area. The estimates for duration need to be revisited given that up to 3,000 days to complete an activity seems excessively long based on experience at other sites. Although short term aesthetics may include limited noise, dust, and emissions (all of which can be controlled), the residents in the area continue to be adversely affect by the site and have been adversely affected since 1951. The short term aesthetic concerns will be minimal compared to the long-term benefits of source removal. Excavation activities, unlike the presentation made in the FS, are relatively straightforward and can be managed with proper planning. Total costs ranging from approximately \$4.8 to \$48 million seem extremely excessive given the straightforward nature of the site. As stated above in comment 9, KDHE/BER does not consider capping an appropriate technology for the site.*

Response: As discussed in Response to KDHE Comment #9 above, the FS Addendum contains an additional remedial alternative that would remove metals-contaminated soil that exceed human health risk levels and approximately 50 percent of the VOC-contaminated soil in the vadose zone. Concerns regarding future migration of DNAPL would be addressed through the groundwater remedial alternatives presented in the FS Report.

As discussed in Response to USEPA Conditions for Approval Comment #6, the estimated duration for LTTD treatment under scenario S2C assumes a 10 hour workday, LTTD processing rate of 3 tons per hour, and double processing for saturated soils. In addition, the estimate of 3,000 days does not account for significant delays due to weather or other possible upset conditions.

The estimates of cost and duration for various alternatives were prepared and reviewed by a host of technical personnel with extensive experience actually performing similar projects, including experienced Professional Engineers registered in the State of Kansas. The estimates were also reviewed by EPA and EPA's technical consultant. All agree that the estimates and assumptions are valid given the assumptions and effort levels proposed in each alternative and are suitable for the intended purpose of evaluating and comparing remedial alternatives. Actual costs and durations may of course vary from these estimates, but the comment that the estimates seem excessive was not substantiated based on detailed technical review by experienced practitioners.

Pages 112 through 118, Section 8, Comparative Analysis of Alternatives, Subsection 8.2, Soil Remedial Alternatives. As stated above, KDHE/BER does not consider capping equivalent to the mass removal and treatment performed during excavation activities. Additionally, capping prolongs the environmental problem by not performing an active treatment on the soil source contributing to DNAPL. Groundwater will continue to intercept the contaminated soils under the cap and the long term operation and maintenance costs will exceed the short term costs of excavation. Additionally, the cost and time frame for completion of excavation activities appear excessive for a 1.5 acre site of which much less than 1.5 acres will likely be excavated.

Response: Comment is noted. Please see response to KDHE Comment #9 and Comment #12 (Pages 78 through 98, Soil Remedial Alternatives, Detailed Analyses) above.

Pages 124 through 126, Section 8.4, Preferred Remedial Alternative. KDHE considers an excavation technology for the soil source area coupled with an offsite in situ chemical oxidation trench technology for groundwater to be the most appropriate remedy for the site. With the implementation of these two active approaches, monitored natural attenuation can be considered for distal portions of the groundwater plume. Capping is not considered by KDHE to be an appropriate technology based on the aforementioned comments.

Response: Comment is noted. Please see response to KDHE Comment #9 and Comment #10.

Response to Comments
CCI Concerned Citizen's Group
Dated April 22, 2004

FUTURE PROPERTY USE

Comment 1. *At the present time, the Community Action Group (CAG) does not want the site to be used for commercial or residential development. Future use should generally be of a quiet nature. The CAG would like to see a remediation scenario, however, which keeps options for future use open, as circumstances surrounding the site may change in the future.*

Response: The remedy selected for implementation will be based on the requirements for a remedy as specified by CERCLA. Although specific future Site uses are not among the requirements for a remedy, there is ample opportunity for community input to be considered during the remedy selection process. Each of the remedies contained in the FS Report and in the FS Addendum would accommodate a wide range of future Site uses including open space or recreational uses.

Comment 2. *If a cap is constructed, it should not limit potential future use of the site. We see this as an argument for removal of contaminated soil over capping.*

Response: The capping remedy contained in the FS Report and the remedy contained in the FS Addendum each would accommodate a wide range of future Site uses.

Comment 3. *If a cap is selected for the site, the CAG would like to review the proposed design. A 4- to 6-foot cap on the site might look very much like a cap for a hazardous waste site. Regardless of the final remedy for on-site soils, care should be taken to address appearance of the site, including landscaping and maintenance that enhances the neighborhood.*

Response: The importance of the appearance of the site is fully understood. The capping alternative contained in the FS Report would include a cap of 4 to 6 ft thickness but this cap would be revegetated to blend with the surrounding area. A new alternative included in the FS Addendum includes a cap that would only raise the site elevation by about 2 feet. Either alternative would accommodate a wide range of landscape and hardscape configurations including open space and/or recreational uses.

Comment 4. *The CAG has learned that most vegetation in Olathe, including trees, does not root deeper than 4 feet due to properties of the soil in the area. Would vegetation other than grass be allowed on a cap so it can be well landscaped?*

Response: The cap thickness could be locally adjusted 2 feet or so to accommodate tree/shrub roots of 4 foot depth, and also to allow for some topographic relief at the Site. As such, a Site cap could accommodate many kinds of vegetation, including trees, on the Site. The CAG would have ample opportunity to comment on the Site development.

HEALTH AND SAFETY DURING REMEDIATION

Comment 5. *Air in homes should be continually monitored.*

Response: A component of each groundwater alternative evaluated in the FS Report includes continued indoor air monitoring on a periodic basis. Due to the very low concentrations of compounds detected, there are no continuous monitoring alternatives proposed.

Comment 6. *Every effort should be made to limit negative impacts on residents during remediation. Relocation of residents may not be a viable option.*

Response: Short-term impact on the community during implementation of the selected remedy is a key criterion used in the evaluation process. Regardless of the remedy chosen, procedures will be developed to assure public safety.

Comment 7. *The CAG expects every necessary step be taken to control VOC emissions during excavation (if this remedial option should be selected) and to prevent the need for relocation of residents (see pages 84 and 92 of the FS). Relocation is not a viable option. What is EPA's opinion on the likelihood of the need for relocation of residents? Is this something residents should be seriously concerned about? What measures will be taken to prevent it?*

Response: This comment is directed to USEPA.

Comment 8. *The CAG supports the use of rail to transport soil, if this can be worked out.*

Response: As part of the development of the new remedial alternative in the FS Addendum, input on rail transportation costs was sought and obtained from BNSF's consultant, TRC Environmental Corp. This information suggests that rail transport is an option if a large excavation is performed but it would not be feasible for low volume excavation.

Comment 9. *The CAG suggests that a road be put along the eastern edge of the site, heading south through the site and the property to the south, to finally enter Keeler Street. This route for truck traffic would minimize truck traffic through the community.*

Response: This suggestion and any other suggestions on how to reduce impacts to the community will be carefully considered during the design phase of the project.

Comment 10. *The CAG would like to continue to be informed of future monitoring results for air, soil, and water. How frequently will monitoring take place and for how many years will monitoring continue?*

Response: The CAG will continue to be informed. Implementation of the remedy will require development of various monitoring plans. The frequency and duration of monitoring will be determined during the development of these monitoring plans.

Comment 11. *Will construction of the elevated rail affect stormwater runoff, soil stability, or groundwater movement at the site? How will this affect any of the proposed remedies?*

Response: Discussions continue between USEPA and BNSF regarding the construction of the elevated rail. Once the construction plan is established, it will be assessed with respect to its impact on groundwater movement, stormwater runoff, and affect on the soil remedy. Since neither the construction plan nor the Site remedy is established, it is premature to assess the potential impact of the construction plan on the remedy.

SOIL

Comment 12. *The CAG strongly supports the idea of removing a substantial amount of contaminated soil, at least the first 9 feet.*

Response: The new alternative scenario S3D was developed to accomplish the objective of excavating and removing soil that contains the highest contaminant concentrations. This new alternative scenario responds to concerns raised by the Technical Outreach Services to Communities (TOSC) members during a conversation on 16 April 2004, as well as concerns voiced by USEPA and KDHE regarding mass removal. It is anticipated that this new alternative scenario would provide for removal of approximately 50% of the contaminant mass in vadose zone soils.

Comment 13. *Soils with metals contamination should be excavated and disposed of.*

Response: Each of the excavation scenarios developed for the Site, including the new alternative scenario S3D, includes excavation and disposal of metals-contaminated soil along with VOC-contaminated soil.

Comment 14. *If LTTD (low-temperature thermal desorption) is selected for treatment, could the site for LTTD soil treatment be located off site to permit more rapid treatment and less disruption of the community?*

Response: Locating a LTTD soil treatment unit at a location off Site would be equivalent to the off Site treatment and disposal alternative S3 evaluated in the FS Report.

Comment 15. *The CAG is not convinced capping is an effective option for dealing with the contamination present in the soils as it may still serve as a source for a continuous release of contaminants into groundwater, especially if the water table fluctuates. In addition, the CAG is concerned capping will not allow a beneficial reuse of the site.*

Response: Two issues are raised by this comment. First, because of the contaminant mass in the bedrock, continued movement of Site contaminants toward groundwater may occur no matter which remedy is chosen for soil at the Site. For this reason, an active groundwater treatment program of intercepting and treating groundwater contaminants at the Site boundary likely will be chosen as the groundwater element of the remedy.

Capping of the Site would accommodate a wide range of surface configurations, including vegetation with or without trees, hardscape areas, walking paths, etc. There is a wide range of beneficial uses that could be accommodated with any cap.

GROUNDWATER

Comment 16. *The CAG is not convinced the groundwater plume is stable. There is limited evidence for this conclusion in the FS. Are plume data available over a large enough time period to support the idea of plume stability? What is the time-based evidence of plume stability? What is the evidence of contaminants decreasing in concentration? Were contaminant concentrations in the deeper bedrock (not the transport zone delineated)? There seem to be data gaps in the TCE plume in groundwater as contoured in the FS, i.e. down gradient towards the creek and to the north of the proposed treatment trench. The CAG is concerned that fractures have been missed where groundwater flow is more rapid.*

Response: These questions have all been addressed in the various remedial investigation reports and it was concluded that there is sufficient information to support the Feasibility Study and to select a remedial alternative for the Site. An important feature of the groundwater remedy will be a well-designed groundwater monitoring program to further evaluate the working hypothesis that the plume is stable and that groundwater is not flowing rapidly through a discrete set of fractures.

Comment 17. *The CAG is generally supportive of the trenching concept for treating groundwater with chemical oxidants. The property of the people living near the trenches should be protected. Trenches on Ocheltree and Keeler should be constructed at the same time.*

Response: The criteria for installing the injection systems will be developed during the remedial design phase of the project. It is anticipated that these criteria will include tests to confirm that the method used to install the initial injection system is effective, and that the resulting system will facilitate appropriate infiltration of permanganate. It is expected that these tests can be conducted and the resultant effectiveness of the system can be ascertained within a period of about 3 months after installation of the initial injection system along the downgradient (western) boundary of the Site. Assuming that the initial system is found to be effective, the second system would then be installed. All public and private property will be protected.

Comment 18. *The CAG understands the difficulty associated with delivering the potassium permanganate effectively to control the plume. As transport of groundwater and the dissolved contamination is via fractures in the bedrock, is there a technology that could be employed to identify where the fractures are located and if and how they are interconnected? It appears success of the proposed groundwater remediation approach is largely dependent on the presence of fractures in the proposed trenching areas.*

Response: It is recognized that various delivery techniques could potentially be used to inject potassium permanganate in the neighborhood, and further analysis of each technique will be performed during the design phase of remedy implementation. This analysis will also incorporate further discussion of subsurface conditions. As specified in the Response to EPA Comment #22, the data does not support the theory that groundwater may be flowing in a few discrete fractures.

Comment 19. *Hot spots of groundwater contamination should be treated when they are identified.*

Response: Both of the groundwater alternatives involving active treatment approaches would treat groundwater contamination at the Site boundary and along Ocheltree Street. Either alternative would be designed to intercept groundwater contaminants in the transport zone at the Site, and to treat such

contaminants. These locations are believed to be the optimum locations at which to address groundwater contamination at the Site.

Comment 20. *Clear criteria should be developed to evaluate the effectiveness of groundwater cleanup. What measures will be taken to monitor groundwater cleanup, and how often will progress be evaluated?*

Response: Implementation of the remedy will require development of a monitoring plan for the groundwater treatment and monitoring system. The monitoring plan will address many issues, including frequency and duration of monitoring and methods to evaluate the effectiveness of the groundwater system.

Comment 21. *How far from the trenches will potassium permanganate be effective at reducing contamination?*

Response: The radius of influence of potassium permanganate will largely depend on the distance at which the product can be dispersed from the injection location. If the potassium permanganate is injected under pressure, it may disperse from the injection location by approximately 10 feet. In addition, effects of diffusion (approximately 2 feet per year) and groundwater flow (approximately 14.4 feet per year) will be present. If injected under gravity, dispersion will occur primarily by diffusion (rate of approximately 2 feet per year) and natural flow of groundwater (approximately 14.4 feet per year).

Comment 22. *For how long will potassium permanganate injection be continued? What criteria will be used to make this decision?*

Response: The injection of potassium permanganate would be continued as needed to meet the objectives of the remedial action. For purposes of cost estimating in the FS, it was assumed that injection would be continued for 30 years.

Comment 23. *Following excavation of soil, Appendix B, pages B1-16 and B2-15 present a chemical-oxidant delivery system that could be installed at the base of the excavated area (Figures B1-7, B2-9). Can this provide an effective barrier to upward migration of vapors into clean fill soil and also an effective delivery system to introduce potassium permanganate to treat groundwater? This seems like a reasonable option to consider.*

Response: A chemical oxidation system may or may not mitigate vapor migration but it would effectively introduce potassium permanganate to treat groundwater as described in groundwater treatment alternative G2.

Comment 24. *What is the feasibility of lengthening the trench along the site boundary further to the north and/or installing additional trenches to improve groundwater treatment? Is the proposed trench of 150 feet along Ocheltree Street long enough to intercept the plume and access enough fractures to deliver the potassium permanganate?*

Response: The actual location of the injection systems would be determined during remedial design. During the feasibility study, the conceptual trench lengths were chosen to intercept the estimated extent of the plume that exceeds 10 part per million (ppm) of TCE. It is believed that an injection system of this length would be adequate to allow the permanganate chemical to infiltrate into the transport zone and treat groundwater.

Comment 25. *What will happen if use of chemical oxidants combined with monitored natural attenuation should prove ineffective for groundwater cleanup? Is there a contingency plan?*

Response: The proposed groundwater program of permanganate and monitored natural attenuation would include a formal effectiveness review every five years. If issues are noted then many different steps could potentially be taken to increase system effectiveness. A specific contingency plan has not yet been developed.

Comment 26. *What are the action levels for all contaminants in soil and groundwater? Please provide a table with this information.*

Response: The action levels for soil are risk-based cleanup levels. They will vary based on the remedy selected. Determining the action level is a function of assessing potential receptors expected at the Site, pathways through which chemicals may travel, and concentrations of chemicals to which potential receptors may be exposed. The risk assessment assumes that Site potential receptors would be recreational in a park-like setting, and construction/maintenance workers. The level of exposure can be affected by the amount of excavation to be conducted, and the nature of the cap or cover that may be placed on the Site. This analysis of soil cleanup levels cannot be reduced to a table with numeric action levels. The action levels for groundwater, discussed in the FS Report, are drinking water standards, or maximum contaminant levels (MCLs).

**Response to Comments
City of Olathe
Dated April 27, 2004**

The City of Olathe appreciates this opportunity to provide comments regarding remediation options for the Chemical Commodities Incorporated superfund site in Olathe at a very early point in the process. We understand that there is no “quick fix” for this site and that any effective method of remediation will be complex. While the superfund site and the homes identified above the groundwater plume are private property, the affected areas are a part of our community and we support remediation efforts that are in the best long-term interest of the affected residents as well as the community at-large.

- ***Overall, the City of Olathe supports the remediation method that will result in the most effective long-term solution to protect the health, safety and welfare of residents and visitors to the area surrounding the superfund site as well as the community at-large.***

Please include the comments provided when developing the EPA’s proposed method of cleanup. The comments were developed based on the Feasibility Study Report as presented at the CCI CAG meeting on Tuesday, April 13.

Overall the City of Olathe supports:

General Comments and Concerns

- *In general the CCI CAG’s efforts, involvements and general concerns.*
- *The remediation method that would keep open the most options for future use of the site – with as few deed restrictions as possible and a usable topography.*
- *The most stringent methods available that support effective long-term solutions that take into account the health, safety and welfare of residents in the plume area including, but not limited to, continued maintenance of the ventilation systems.*
- *Solutions to the long-term underground activity of the chemicals both in the soil on the site and in the groundwater plume.*

- *Risk reduction and the maintenance of the health, safety and welfare of those outside of the fenced-in boundaries of the superfund site including currently identified as well as unidentified areas affected by the plume, including potential future areas affected.*
- *Use of the best available technologies now and in the future to fully remediate the site and eliminate any risk to the residents both now and into the future.*
- *The remediation method that will result in the most effective long-term positive perception of the area and positive impact on residents' property value and resale ability. The City would be concerned with a remediation method that does not adequately address residents' concerns about personal safety and the livability of their homes.*
- *Cleanup methods that take into account most heavily:*
 - *The overall protection of human health and the environment*
 - *Long-term effectiveness and permanence*
 - *Reduction of toxicity, mobility and volume of waste through treatment*
 - *Short-term effectiveness*
 - *Community acceptance*
 - *State acceptance*

Specific Comments on Proposed and Recommended Remediation Methods

- *The use of on-site excavation for partial or full removal of contaminated soil.*
- *At least some excavation of contaminated soil from the CCI site – possibly focusing on “hotspots.”*
- *Long-term monitoring of the effectiveness of the selected remediation method on-site, in properties known to be above the groundwater plume and in Mill Creek. The long-term monitoring schedule should be clearly outlined.*
- *Spot treatment of contaminated groundwater off-site in addition to groundwater treatment to the use of the 1-2 trenches described in the report.*
- *Aggressive remediation to limit the spread of contaminants through lateral movement of water through the soil, particularly given seasonal variations of the groundwater table.*
- *The use of potassium permanganate injections and the use of trenches to deliver it as directly as possible to the groundwater.*

- *The targeting of hot spots as well as long term trenching to intercept and treat with Potassium Permanganate.*
- *Method labeled S2 in the executive summary because of its long-term effectiveness and permanence.*
- *More frequent post-remediation monitoring of the site than that outlined in the executive summary (5 years). We support monitoring efforts to begin more quickly after implementation of remediation.*
- *Support of a cap as outlined in the feasibility study should be as a short-term solution until a more effective technology is available.*

Response: The comment letter from the City of Olathe, which is directed to USEPA, is noted. The comments reflect an understanding of the difficult decisions that must be made in choosing a Site remedy. It is noted that the comments reflect the City's stated goal: to implement "*the remediation method that will result in the most effective long-term solution to protect the health, safety and welfare of residents and visitors to the area surrounding the superfund site as well as the community at-large.*" That goal is a key consideration in the development of the set of alternatives that were included in the FS Report, and in the development of the new alternative scenario S3D.

ATTACHMENT A

Revised ARAR Tables

**TABLE A-1
 POTENTIAL FEDERAL ACTION – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Federal Regulations	Requirement	Potentially Applicable/Relevant and Appropriate?	Analysis
CLEAN AIR ACT			
National Ambient Air Quality Standards NESHAP/NSPS/BACT/ PSD/LAER 40 CFR 60.1-17, 60.50-54, 60-150-154, 60.480-489 40 CFR 53.1-33 40 CFR 61.01-18, 61.50-112, 61.240-247	Establishes a limit on ambient particulate matter to protect Health Sets treatment technology standards for emissions to air from incinerators and fugitive emissions.	No/No No/No	Not an ARAR. Applicable emissions thresholds unlikely.
CLEAN WATER ACT			
National Pollutant Discharge Elimination System (NPDES) 40 CFR 122.1-64	Regulate the point source discharge of water into surface water bodies.	Yes/--	Substantive requirements will have to be met to any surface water discharge that may be part of a response action, although administrative requirements (a permit) may not be required if the discharge point is on-site.

**TABLE A-1
POTENTIAL FEDERAL ACTION – SPECIFIC ARARS
CHEMICAL COMMODITIES, INC. SITE
OLATHE, KANSAS**

Federal Regulations	Requirement	Potentially Applicable/Relevant and Appropriate?	Analysis
Pretreatment Standards 40 CFR Part 403.1-18	Established pretreatment standards for the control of pollutants' discharge to POTWs.	Yes/--	The substantive applicable requirements of the national pretreatment program must be met to any discharge to a POTW.
Ocean Discharge 40 CFR Part 227.1-32	NPDES permit required to discharge to marine water.	No/No	Not relevant to situation.
Dredge and Fill Requirement 40 CFR 230.1-80	Regulates the discharge of dredged or fill material into the water of the US.	No/No	No dredging or filling anticipated.
SAFE DRINKING WATER ACT			
Underground Injection Control Program 40 CFR Part 144.1-70	Controls the underground injection of fluids.	Yes/--	Oxidizer injection may trigger the substantive UIC program requirements.
RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)			
Hazardous Waste Management	Management of generation, treatment, storage, disposal, and transport of hazardous waste.	Yes/--	Applicable to the extent that waste is characterized or listed hazardous waste
Definition and identification of hazardous waste 40 CFR Part 261.	Identifies those wastes subject to regulation.	Yes/--	RCRA requirements are applicable to hazardous wastes, if any, generated from remedial actions.
Standards for Generators 40 CFR 262.10-40	Establishes regulation covering activities of generators of hazardous wastes. Requirements include ID number, record keeping, and use of uniform national manifest.	Yes/--	Applicable if RCRA hazardous is generated on-site to be managed off-site.

**TABLE A-1
POTENTIAL FEDERAL ACTION – SPECIFIC ARARS
CHEMICAL COMMODITIES, INC. SITE
OLATHE, KANSAS**

Federal Regulations	Requirement	Potentially Applicable/Relevant and Appropriate?	Analysis
Subpart G – Closure/Post-Closure 40 CFR Part 264	Concerns site closure requirements, including operation and maintenance, site monitoring, record keeping, and site use.	No/Yes	Substantive closure and post-closure requirements may be relevant and appropriate to hazardous wastes, if any, left in place.
Subpart I – Storage Container 40 CFR Part 264	Requirements for on-site storage of hazardous wastes or temporary storage phases during cleanup actions. Requirements for maintenance of storage containers, compatibility with waste, inspection, storage area, location, and closure.	Yes/--	Applicable to container storage of hazardous wastes, if any, prior to off-site shipment under generator standards.
Subpart J – Tank Storage 40 CFR Part 264	Requirements apply to tank storage of hazardous materials.	No/No	Tank storage is not anticipated.
Subpart K – Surface Impoundments 40 CFR Part 264	Requirements for hazardous waste containment using new or existing surface impoundments.	No/No	No surface impoundments are anticipated.

**TABLE A-1
POTENTIAL FEDERAL ACTION – SPECIFIC ARARS
CHEMICAL COMMODITIES, INC. SITE
OLATHE, KANSAS**

Federal Regulations	Requirement	Potentially Applicable/Relevant and Appropriate?	Analysis
Subpart L – Waste Piles 40 CFR Part 264	Requirements for hazardous waste kept in piles.	No/No	The only likely waste piles would be subject to 40 C.F.R. Subpart S for remediation waste.
Subpart M – Land Treatment 40 CFR Part 264	Requirements pertain to land treatment of hazardous wastes.	No/No	Land treatment is not an alternative.
Subpart N – Landfills 40 CFR Part 264 (New landfills)	Requirement for design, operation, and maintenance of a new hazardous waste landfill, includes minimum technology requirements under HSWA.	No/No	New landfill is not an alternative.
Subpart O – Incinerators 40 CFR Part 264	Requirements for hazardous waste incinerators.	No/No	On-site incinerator is not being considered for this site.
Subpart S – Corrective Action for Solid Waste Management Units 40 CFR Part 264	Requirements for CAMUs and temporary treatment units at RCRA-permitted TSD facilities undergoing corrective action.	Yes/--	Substantive requirements may be relevant and appropriate in the event hazardous waste is re-deposited on-site.
Subpart X – Miscellaneous Units 40 CFR Part 264.600-603	Standards for performance of miscellaneous treatment units. Miscellaneous treatment units may include shredders or desorption.	Yes/--	Subpart X may apply to use of on-site physical treatment technologies such as shredders for managing hazardous waste, if any.

**TABLE A-1
POTENTIAL FEDERAL ACTION – SPECIFIC ARARS
CHEMICAL COMMODITIES, INC. SITE
OLATHE, KANSAS**

Federal Regulations	Requirement	Potentially Applicable/Relevant and Appropriate?	Analysis
Land Disposal Restrictions 40 CFR, Part 268.	The land disposal restrictions and treatment requirements for materials subject to restrictions on land disposal.	Yes/--	Excavation and removal is a potential action; therefore, LDR may be triggered, for characteristic contaminated media.
TOXIC SUBSTANCES CONTROL ACT (TSCA) PCBs			
40 CFR Part 761.	Requirement for disposal of PCBs.	No/No	PCB concentrations are below 50 milligrams per kilogram.
OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) OF 1970			
29 U.S.C. § 651 et seq.	Enacted to ensure worker and workplace safety. Employers are required to provide workers a place of employment that is free from recognized hazards to safety and health.	Yes/--	May be applicable to workers and during the response action.
Occupational Safety and Health Standards (29 CFR 1910)	Provides standards for workers and the workplace including: working surfaces; means of egress; ventilation; noise; hazardous materials; personal protective equipment; sanitation; medical services and first aid; fire protection, detection, and suppression; materials handling and storage; machinery and machinery guards; power tools; and welding and electrical equipment. Also requires training for workers.	Yes/--	May be applicable to workers during the response action.

**TABLE A-1
 POTENTIAL FEDERAL ACTION – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Federal Regulations	Requirement	Potentially Applicable/Relevant and Appropriate?	Analysis
OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) OF 1970 -- continued			
Safety and Health Regulations for Construction (29 CFR 1926)	Provides standards for construction activities including: work practices, safety equipment; scaffolding and ladders; fall protection; heavy equipment; excavations; concrete and masonry construction; steel erection; tunnels and shafts; demolition; use of explosives; power transmission and distribution; and overhead protection.	Yes/--	May be applicable to workers and during the response action.

Notes: “Yes/--”: If a requirement is *potentially applicable*, determination of *relevant and appropriate* status is not made.

**TABLE A-2
POTENTIAL STATE ACTION – SPECIFIC ARARS
CHEMICAL COMMODITIES, INC. SITE
OLATHE, KANSAS**

Standard Requirement, Criteria, or Limitation	Citation	Description	Applicable/Relevant and Appropriate	Comment
Kansas Air Pollution Control Regulations	Article 19	Establishes requirements for major stationary sources in attainment/unclassified areas (22.4) or non-attainment areas (22.5)	Yes/---	May be applicable if remedial action results in emissions above threshold amounts.
Kansas Air Pollution Control Regulations (continued)	Article 19	Establishes emission standards for new sources and for hazardous air pollutants.	Yes/---	May be applicable if remedial action results in emissions above threshold amounts.
Kansas Water Pollution Control Regulations	KAR 28-16-28	Sections 28b through 28f contain the State’s antidegradation policy, discharge standards by water classification and adoption of CWA treatment requirements.	Yes/--	These regulations may be applicable to any discharge from the site to receiving surface waters.
	KAR 28-16-83-97	Pretreatment standards in effect in 40 CFR Part 403.2, as of July 1, 1986, are adopted by reference.	Yes/--	May be applicable to any discharge from the site to a POTW.
	KAR 28 Article 46	Federal UIC standards are adopted by reference.	Yes/--	Injection of fluids may trigger the UIC program requirements.
WATER WELL REQUIREMENTS				
Water Well Contractor’s License; Water Well Construction and Abandonment		Requirements for driller’s licensing. Regulates drilling activities and construction and abandonment of wells.	Yes/---	May be applicable to wells, including abandoned wells at the site.

**TABLE A-2
POTENTIAL STATE ACTION – SPECIFIC ARARS
CHEMICAL COMMODITIES, INC. SITE
OLATHE, KANSAS**

Standard Requirement, Criteria, or Limitation	Citation	Description	Applicable/Relevant and Appropriate	Comment
SOLID WASTE MANAGEMENT				
Kansas Solid Waste Regulations	K.A.R. 28-29-1 to 28-29-121 and K.A.R. 28-29-2101 to 28-29-2113	Provides standards for management of solid wastes. Establishes administrative procedures. Establishes the requirement for development and submittal of Solid Waste Management Plans.	No/Yes	May be relevant and appropriate if solid waste is generated, stored or disposed at the site.
UNDERGROUND INJECTION CONTROL REGULATIONS				
Kansas UIC Regulations	K.A.R. 28-46-1 to 28-46-44	Provides regulations governing the use of underground injection wells including: identification of the classifications of injection wells; and the permitting, construction, operation, monitoring, testing, and reporting requirements. Also provides requirements for plugging of injection wells.	No/Yes	Substantive requirements may be relevant and appropriate if the remedy involves the injection of fluids or air into the subsurface.
KANSAS BOARD OF TECHNICAL PROFESSIONS				
Kansas Professional Engineer Regulations	K.A.R. 66-6-1 through 66-14-12	Establishes the requirements for licensing of engineers, land surveyors, geologists and architects.	Yes/--	May be applicable if the services of a geologist, engineer or land surveyor are required for site investigations or remediation.

**TABLE A-3
POTENTIAL FEDERAL LOCATION – SPECIFIC ARARS
CHEMICAL COMMODITIES, INC. SITE
OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
ARCHAEOLOGICAL AND HISTORIC PRESERVATION ACT OF 1974			
16 U.S.C. § 469 et seq.	Provides for the preservation of historical or archeological data which might be destroyed or lost as the result of 1) flooding, building of access roads, relocation of railroads and highways, and other alterations of terrain caused by the construction of a dam by government or persons, or 2) alteration of terrain caused by Federal construction projects or federally licensed activity or program.	No/No	There are no archeological or historic materials on the site.
ENDANGERED SPECIES ACT OF 1973			
7 U.S.C. §136; 16 U.S.C. § 460 et seq.	Provides a program for conservation of threatened and endangered plants and animals and the habitats in which they are found.	No/No	No threatened or endangered species, or their habitats are present at or near the site.
FISH AND WILDLIFE CONSERVATION ACT			
16 U.S.C. § 2901 to 2911	Action to conserve fish and wildlife, particularly those species which are indigenous to the state.	No/No	No significant populations are present at the site or are affected by site activities.

**TABLE A-3
POTENTIAL FEDERAL LOCATION – SPECIFIC ARARS
CHEMICAL COMMODITIES, INC. SITE
OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
FISH AND WILDLIFE COORDINATION ACT			
16 U.S.C. § 661-667e	The Act allows the Departments of Agriculture and Commerce to assist Federal and State agencies to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife.	No/No	No significant populations are present at the site or are affected by site activities.
FLOOD CONTROL ACT OF 1944			
16 U.S.C. § 460	Provides the public with knowledge of flood hazards and promotes prudent use and management of flood plains.	No/No	Site is not located on a designated flood plain.
NATIONAL HISTORIC PRESERVATION ACT OF 1966			
16 U.S.C. § 470 et seq.	Establishes a national registry of historic sites. Provides for preservation of historic or prehistoric resources.	No/No	Site is not listed on historic registry.

**TABLE A-4
 POTENTIAL STATE LOCATION-SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Kansas)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
KANSAS HISTORIC PRESERVATION ACT			
K.A.R. 118-3-1 to 118-3-106	Provides for the protection and preservation of sites and buildings listed on state or federal historic registries.	No/No	Site is not listed on the state or federal historic registry.
NON-GAME, THREATENED OR ENDANGERED SPECIES			
K.A.R. 115-15-1 to 115-15-4	Identifies Threatened and Endangered Species.	No/No	No identified species are present at the site.
ENVIRONMENTAL USE CONTROLS			
Kansas H.B. 2247 On Environmental Use Controls	Provides for property use controls where cleanup is above unrestricted use standards.	Yes/---	May be applicable for cleanup to less than unrestricted use on site.

**TABLE A-5
 POTENTIAL FEDERAL CHEMICAL – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
CLEAN AIR ACT (CAA)			
42 U.S.C. § 7401 et seq. as amended in 1977 and 1990	Regulates air emissions from area, stationary, and mobile sources. Authorizes EPA to establish National Ambient Air Quality Standards.	Maybe/Maybe	Certain provisions may be applicable if remedial actions result in emissions above threshold amounts. NAAQS are not ARARS.
Standards of Performance for New Stationary Sources (40 CFR 60)	Identifies standards of performance for new stationary sources of air emissions. Provides emission guidelines and compliance terms.	Maybe/Maybe	May be applicable for new stationary sources of air emissions if remedial action results in emissions above threshold amounts.
National Emission Standards for Hazardous Air Pollutants (40 CFR 61)	Identifies emission standards for specific hazardous air pollutants.	Maybe/Maybe	May be applicable if the identified hazardous air pollutants are emitted from a site in excess of threshold amounts.
National Emission Standards for Hazardous Air Pollutants for Source Categories (40 CFR 63)	Identifies emission standards for hazardous air pollutants that originate from specific categories of sources.	No/No	Site will not fall within any of the specified categories.

**TABLE A-5
 POTENTIAL FEDERAL CHEMICAL – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
CLEAN WATER ACT (CWA) OF 1977			
33 U.S.C. § 1251 et seq. as amended in 1987	Implements a system to impose effluent limitations on, or otherwise prevent, discharges of pollutants into any waters of the United States from any point source.	Yes/---	Substantive requirements may be applicable if on-site discharge to surface water is part of remedial action.
National Pollutant Discharge Elimination System (NPDES) (40 CFR 122) Storm Water Discharge Requirements NPDES (40 CFR 122.26)	Regulates discharges of pollutants from any point source into waters of the United States. Provide requirements to obtain a permit to discharge to the storm water sewer system under the NPDES program.	Yes/--- Yes/---	Substantive requirements may be applicable if on-site discharge to surface water is part of remedial action. Substantive requirements may be applicable if the site has storm water that comes in contact with construction or industrial activity or if the selected remedy involves on-site discharge of treated water to surface waters.

**TABLE A-5
 POTENTIAL FEDERAL CHEMICAL – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
<p>Federal Water Quality Standards (40 CFR 131)</p> <p>General Pre-treatment Regulations for Existing and New Sources of Pollution for Publicly Owned Treatment Works (POTW) (40 CFR 403)</p> <p>Wetlands Protection (40 CFR 22, 40 CFR 230 to 233, and 33 CFR 320 to 330)</p>	<p>Establishes methods and requirements for states in the development of ambient water quality criteria for the protection of aquatic organisms and/or the protection of human health.</p> <p>Provides effluent limitations and guidelines for existing sources, standards of performance for new sources, and pre-treatment standards for new and existing sources.</p> <p>Allows for permitting of discharge of dredged or fill material to the waters of the United States if no practicable alternatives exists that are less damaging to the aquatic environment. Applicants must demonstrate that the impact to wetlands is minimized.</p>	<p>No/No</p> <p>Yes/---</p> <p>No/No</p>	<p>FWQS are not ARARS.</p> <p>Substantive requirements will be applicable if wastewater from the site is discharged to a POTW.</p> <p>No wetlands will be affected by a remedial action at the site.</p>

**TABLE A-5
 POTENTIAL FEDERAL CHEMICAL – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT (EPCRA) OF 1986			
42 U.S.C. § 11001 et seq.	Designated to help local communities protect public health, safety and the environment from chemical hazards. Enables states and communities to prepare to respond to unplanned releases of hazardous substances. Requires facilities at which hazardous substances are present to report the presence of these materials to emergency responders. Requires companies to report the release of hazardous substances.	Yes/---	Substantive requirements may be applicable if hazardous chemicals are stored or used at the site in excess of threshold amounts.
EXPLOSIVES			
18 U.S.C. § 847	Regulates commerce in explosives. Requires licensing and permitting, recordkeeping and reporting for purchase and use of explosives. Provides standards for storage of explosive materials.	No/No	No explosives will be purchased, stored or used at the site.

**TABLE A-5
 POTENTIAL FEDERAL CHEMICAL – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) OF 1976			
42 U.S.C. § 6901 et seq. as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA) and 1986, the Federal Facilities Compliance Act of 1992, and the Land Disposal Program Flexibility Act of 1996.	Enacted to provide control of hazardous waste by imposing management requirements on generators and transporters of hazardous waste and upon owners and operators of treatment, storage and disposal (TSD) facilities. Also set forth a framework for management of non-hazardous waste. Focuses only on active or future facilities. HSWA requires phasing out land disposal of hazardous waste.	Yes/Yes	Certain provisions may be applicable for treatment, storage or disposal of hazardous wastes on site. Other provisions may be relevant and appropriate for hazardous waste management on-site.
Solid Waste Disposal Facility Criteria (40 CFR 257 - 258)	Regulations apply to owners and operators of facilities that treat, store or dispose of solid wastes.	No/Yes	May be relevant and appropriate if site activities are analogous to solid waste facility activities.
Standards for Identification and Listing of Hazardous Waste (40 CFR 261)	Provides criteria for identification of hazardous and solid wastes.	Yes/---	Will be applicable for identifying hazardous wastes.
Standards Applicable to Generators of Hazardous Waste (40 CFR 262)	Regulates the manifesting, pre-transport requirements, and record keeping and reporting for hazardous waste generators.	Yes/---	Substantive requirements may be applicable if hazardous waste is generated at the site.

**TABLE A-5
 POTENTIAL FEDERAL CHEMICAL – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
Standards Applicable to Transporters of Hazardous Waste (40 CFR 263)	Establishes standards that apply to persons transporting hazardous waste within the United States if the transportation requires a manifest under RCRA.	No/No	Not an ARAR. ARARS pertain to on-site activities only.
Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (40 CFR 264)	Regulations apply to owners and operators of facilities that treat, store, or dispose of hazardous waste through the use of surface impoundments, waste piles, incinerators, land treatment units, and landfills.	No/Yes	May be relevant and appropriate if on-site activities include treatment, storage or disposal of hazardous waste.
Manifesting, Record Keeping, and Reporting Requirements (40 CFR 264.70 to 264.77)	These standards apply to owners and operators of all facilities which treat, store or dispose of hazardous wastes.	Yes/---	Substance requirements may be applicable if site activities include treatment, storage or disposal of hazardous waste.
Releases from Solid Waste Management Units (40 CFR 264.90 to 264.101)	Regulations apply to owners or operators of hazardous waste treatment, storage or disposal facilities.	No/Yes	May be relevant and appropriate for release from solid waste management unit at the site, if any.
Closure and Post Closure Requirements (40 CFR 264.110 to 264.120)	Facility owner or operator must close a hazardous waste facility in a way that minimizes the need for further maintenance and maximizes the protection of human health and the environment.	No/Yes	May be relevant and appropriate if hazardous wastes generated and disposed of on-site.

**TABLE A-5
 POTENTIAL FEDERAL CHEMICAL – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
RESOURCES CONSERVATION AND RECOVERY ACT (RCRA)			
Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities (40 CFR 265)	Regulations apply to owners and operators of facilities that treat, store, or dispose of hazardous waste.	No/Yes	
Land Disposal Restrictions (40 CFR 268)	Identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be land disposed.	Yes/---	May be applicable depending on the type of waste generated at the site.
Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (40 CFR 280)	Establishes regulations relating to underground storage tanks (UST) including: performance standards; spill control; corrosion protection; record keeping and reporting; release detection; environmental investigations of releases; corrective actions; and closure of UST systems.	No/No	No petroleum USTs are located at the site.

**TABLE A-5
 POTENTIAL FEDERAL CHEMICAL – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
SAFE DRINKING WATER ACT (SDWA) OF 1974			
42 U.S.C. § 300f et seq. as amended in 1986	Established to protect the quality of drinking water in the United States. Focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources. The Act authorized EPA to establish safe standards of purity and required all owners or operators of public water supply systems to comply with primary (health-related) standards.	No/No	No public drinking water supplies are affected by the site.
National Primary Drinking Water Regulations and Implementation (40 CFR 141 and 142)	Establishes maximum contaminant levels (MCLs) which are health risk based standards for public water systems.	No/No	No potential drinking water sources are affected by the site.
National Secondary Drinking Water Standards (40 CFR 143)	Establishes welfare-based secondary standards for public water systems.	No/No	No public water supplies are affected by the site.

**TABLE A-5
 POTENTIAL FEDERAL CHEMICAL – SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Federal)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
Underground Injection Control Program (40 CFR 144 to 148)	Assures that Underground Injection will not endanger drinking water sources. Provides regulations governing the use of underground injection wells including: identification of the classifications of injection wells; and the permitting, construction, operation, monitoring, testing, and reporting requirements. Also provides requirements for plugging of injection wells.	Yes/---	Substantive requirements may be applicable if underground injection of liquids or air is conducted as part of a site remedy.
TOXIC SUBSTANCES CONTROL ACT (TSCA) OF 1976			
15 U.S.C. § 2601 et seq.	Enacted to give EPA the ability to track industrial chemicals currently produced or imported into the United States. EPA screens these chemicals and may require reporting or testing of those that pose an environmental or human-health hazards. EPA may ban the manufacture and import of those chemicals that pose an unreasonable risk.	No/Yes	Will be applicable if site activities involve handling of toxic substances such as polychlorinated biphenyls (PCBs) or remediation of these substances.

**TABLE A-6
 POTENTIAL STATE CHEMICAL - SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Kansas)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
EMERGENCY PLANNING AND RIGHT-TO-KNOW			
K.A.R. 28-65-1 to 28-65-4	Designated to help local communities protect public health, safety and the environment from chemical hazards. Enables communities to prepare to respond to unplanned releases of hazardous substances. Requires facilities at which hazardous substances are present to report the presence of these materials to emergency responders. Requires companies to report the release of hazardous substances.	Yes/---	May be applicable if hazardous chemicals are stored or used at a site above threshold amounts.
HAZARDOUS WASTE MANAGEMENT STANDARDS AND REGULATIONS			
K.A.R. 28-31-1 to 28-31-16	Identifies the characteristics and listing of hazardous waste. Prohibits underground burial of hazardous waste except as granted by EPA or KDHE. Establishes restrictions on land disposal. Establishes standards for generators or transporters of hazardous waste. Establishes standards for hazardous waste storage, treatment and disposal facilities.	Yes/Yes	Some provisions may be applicable if hazardous wastes are managed on site, including LDR's; other provisions may be relevant and appropriate, including closure, post-closureprovisions.

**TABLE A-6
 POTENTIAL STATE CHEMICAL - SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Kansas)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
SOLID WASTE MANAGEMENT			
K.A.R. 28-29-1 to 28-29-121 and K.A.R. 28-29-2101 to 28-29-2113	Provides standards for management of solid wastes. Establishes administrative procedures. Establishes the requirement for development and submittal of Solid Waste Management Plans.	No/Yes	Substantive portions may be relevant and appropriate if solid waste is generated, stored or disposed at the site.
SPILL REPORTING			
K.A.R. 28-48-1 to 28-48-2	Requires reporting of unpermitted discharges or accidental spills. Requires that containment and immediate environmental response measures are implemented. Also provides for technical assistance for mercury-related spills.	Yes/---	May be applicable if unpermitted discharges or accidental spills occur at the site.
WATER POLLUTION CONTROL			
K.A.R. 28-16-1 to 28-16-154	Provides regulation of sewer discharge. Establishes pre-treatment standards for industry. Designates uses of rivers and streams. Establishes River Basin Quality Criteria and Surface Water Quality Criteria. Provides for the establishment of Critical Water Quality Management Areas.	Yes/---	Substantive requirements may be relevant and appropriate if on-site discharges to surface waters as part of remedial action.

**TABLE A-6
 POTENTIAL STATE CHEMICAL - SPECIFIC ARARS
 CHEMICAL COMMODITIES, INC. SITE
 OLATHE, KANSAS**

Potentially Applicable Relevant and Appropriate Requirements (Kansas)	Description	Potentially Applicable/Relevant and Appropriate?	Comment
KANSAS RSK MANUAL			
Kansas RSK Manual	Records guidance on establishing risk-based cleanup levels.	To Be Considered.	RSK manual may be a TBC for establishing cleanup levels at the site.
AMBIENT AIR QUALITY STANDARDS AND AIR POLLUTION CONTROL			
K.A.R. 28-19-1 to 28-19--801	Regulates air emissions from processing operations, indirect heating equipment, and incinerators. Establishes requirements for Attainment and Non-Attainment Areas. Establishes requirements for Stack Heights. Restricts open burning.	Yes/---	May be applicable if a remedy results in the release of contaminants to the air in excess of threshold amounts.
EXPLOSIVE MATERIALS			
K.A.R. 22-4-1 to 22-4-4	Requires all contractors to obtain explosive storage site permits before moving, storing or using any explosives or blasting agents at any job site within the state.	No/No	No explosives are located at the Site.