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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

By Overnight Delivery January 16, 2009

Judson Polikoff
Assistant Secretary
Chevron Products Company
2300 Windy Ridge Parkway, Suite 575
Atlanta, GA 30339

Re: Administrative Order On Consent
Former Chevron Facility
5801 Riggs Road
Chillum, Prince George's County, Maryland
RCRA-03-2008-0355TH

Dear Mr. Polikoff:

Enclosed please find the Administrative Order on Consent (Order) executed by Chevron U.S.A. Inc. and the United States Environmental Protection Agency (EPA) in regard to the above-referenced Facility. As you know, EPA made the Order available for public review and comment. During the public comment period EPA received five sets of comments. EPA has responded to those comments in a document entitled, "Response to Comments on Administrative Order on Consent, RCRA-03-2008-0355TH" which is attached hereto as Attachment A.

Based on the comments provided, EPA has determined that no modifications to the Order are necessary. Therefore, the Order should be made effective in its present form and will become effective upon your receipt of this letter to which a true and correct copy of the fully executed Order is attached as Exhibit B.

If you have any questions concerning this matter, please contact Andrew Fan at (215) 814-3426.

Sincerely,

Abraham Ferdas
Director
Land and Chemicals Division

Enclosures

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Response to Comments
on
Administrative Order on Consent, RCRA-03-2008-0355TH

In this document, EPA responds to public comments received by EPA on the proposed Administrative Order on Consent (Consent Order), RCRA-03-2008-0355th, for the gas station formerly owned by Chevron U.S.A. Inc. (Chevron) which is located at 5801 Riggs Road in Chillum, Prince George's County, Maryland (the Facility). EPA provided the public the opportunity to comment on the Consent Order as a matter of policy. EPA's responses do not constitute a final agency action.

The following comments are direct quotes from comments received during the public comment period for the Consent Order:

■ Response to District of Columbia Comments, dated September 28, 2008

Question 1: We are concerned that EPA may have inadvertently derived its background concentration based upon the 95th percentile of concentrations measured in homes "off-plume," rather than the 5th percentile. This mathematical, or statistical error, may have artificially inflated the benzene concentration EPA assumes is present in each home as being associated with ambient background levels not associated with the Chevron plume. By inflating the assumed background level, EPA may have raised the threshold for requiring remediation, and inadvertently screened out Riggs Park homes where a VMS should be installed.

Answer: EPA selected the 95 percentile value as the representative background concentration to assure that, with a 95 percent statistical confidence level, the elevated concentrations measured in homes located over the plume are not caused by background sources. EPA derived the 95 percentile value from the District's 2006 sampling data from homes located outside of the plume. Using the 95 percentile value, EPA identified the site-specific background concentrations in Riggs Park for benzene and MTBE as 8 and 17 micrograms per cubic meter (ug/m3), respectively. These site-specific background concentrations are more stringent than the national background levels for those constituents listed in EPA's 2007 national data base which are 10 and 18 ug/m3, respectively.

Please also note that while EPA's selection of the 95 percentile value as the representative background concentration provides a 95 percent statistical confidence level that the elevated concentrations measured in homes are not caused by background sources, it does not prove conclusively that the elevated concentrations are caused by vapor intrusion. There are other uncommon sources of indoor petroleum vapor which were not captured by the 95 percentile value. For example, an individual visiting a house during a sampling event might have accidentally contaminated his/her clothing with gasoline refilling his/her car. In order to conclusively determine that an elevated indoor

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air concentration is linked to the Chevron release, the indoor air data must be evaluated in conjunction with soil vapor and groundwater data. However, to reduce the burden of repeat sampling, EPA has taken a conservative approach consistent with its authority under RCRA Section 7003 and required Chevron to take action based on indoor air sampling results alone.

Question 2: Riggs Park residents are being exposed to multiple toxic chemicals associated with the contaminated plume. When people are being exposed to multiple chemicals, EPA risk assessment guidance and risk management policies require EPA to calculate the cumulative cancer risks and hazard index to determine if they are at acceptable levels. EPA is not following its practice here. Instead, EPA is making decisions based on a chemical-by-chemical basis that assumes Riggs Park residents are being exposed to each chemical separately and independently from one another. The District requests that EPA calculate cumulative risk and health hazards for each residence, and base decisions regarding remediation on the results of such risk assessment.

Answer: EPA considers the additive toxicity effect of multiple chemicals in risk management where appropriate. For vapor intrusion assessments, however, EPA has determined that it was not appropriate to add the toxicity effect of multiple indoor air contaminants because doing so would include the toxicity effect of contaminants from background indoor sources. Additionally, cancer risks should not be added to non-cancer risks; and non-cancer risks should not be routinely summed unless they affect the same target organs (EPA Risk Assessment Guidance for Superfund, Volume 1, Section 8.2.2). For example, the risks of toxins that primarily affect the liver can only be summed up with one another, but not with toxins that affect the nervous system.

Please note that the District of Columbia Risk Based Corrective Action Guidance (DCRBCA), Section 5.3.1, states that:

> *The estimation of cumulative risk or the hazard index (sum of hazard quotients) is not required for the following reasons:*
> • *There are a limited number of COCs* [chemicals of concern] *at most regulated underground storage tank release sites and the COC's affect different organs,*
> • *The DCRBCA process uses conservative exposure factors and target risk values,*
> • *The models used to estimate the RBSLs* [risked based screening levels] *and SSTLs* [site specific target levels] *include numerous conservative assumptions.*

Question 3: The 8 ug/cu.m. benzene standard calculated by EPA Region 3 is actually the sum of two parts, or concentrations: 1) the risk-based concentration (RBC) of benzene (assuming background levels are zero), and 2) the site-specific background concentration in each Riggs Park home . . . . It should be noted that the EPA region 3 SOB does not specifically state the calculated 95th percentile benzene concentration, but it is assumed to be approximately 5.7 based on the following relationship equation:

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EPA Region 3 "Standard" (8 ug/cu.m.) = 95th Percentile Background (5.7 ug/cu.m.) + RBC (2.3 ug/cu.m.)

Answer:

EPA derived the 95 percentile values for benzene and MTBE as follows:

95 percentile = Mean background value + 2 Standard Deviations
Benzene (8.1 rounded to 8) = Mean background value (2.7) + 2 Standard Deviation (2.7)
MTBE (17.2 rounded to 17) = Mean background value (2.8) + 2 Standard Deviation (7.2)

Section VI.B (Vapor Remediation Standards) of the Statement of Basis dated August 2007 describes how the 95 percentile background concentrations were identified:

> *EPA used the indoor air sampling data provided by DOH to identify the background concentrations of benzene and MTBE. DOH collected indoor air samples from 97 homes in 2006; 52 homes are located outside the plume boundaries and 45 homes are located above the plume. Based on statistical analyses of the indoor air data collected from the 52 homes located outside the plume, the mean background concentrations for benzene and MTBE are 2.7 ug/m^3 and 2.8 ug/m^3, respectively, with standard deviations of 2.7 ug/m^3 and 7.2 ug/m^3, respectively. Since these 52 homes are located outside the plume, the measured values cannot be affected by the gasoline plume and therefore represent local background concentrations.*
>
> *In selecting remediation standards, EPA must consider implementation factors such as background concentrations. EPA is not aware of any practical technology that can reduce indoor air vapor concentrations to below background concentrations, or any measurement technique that can distinguish background concentrations from vapor intrusion concentrations if the two are numerically similar. A 95 percentile value (mean value plus two standard deviations) will provide confidence that the measured value is likely caused by vapor intrusion, and that technology will be available to reduce the elevated concentrations to background concentrations. Therefore, EPA selects the 95 percentile values; that is, 8 ug/m^3 and 17 ug/m^3, as the remediation standards for benzene and MTBE, respectively.*

Question 4: "Installation of individual vapor mitigation systems in homes above the plume where measured indoor air concentrations have exceeded EPA's standards." This statement indicates that EPA is applying defined "EPA Region 3 standards" that originate or are based on law, policy, regulations, and for guidance developed by EPA. We believe this statement could be misleading.

Answer: While the District states that it has quoted from the Consent Order, EPA cannot find this exact quote. Nonetheless, EPA does not believe that the statement is misleading. EPA established the site-specific indoor air standards for Riggs Park by

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following the National Contingency Plan (NCP), which is codified at 40 C.F.R. Part 300. EPA selected those standards as part of its Final Remedy after considering comments received from the District, the Agency for Toxic Substances and Disease Registry and the public. Therefore, those indoor air standards are EPA's standards for Riggs Park.

Question 5: EPA Region 3 should modify its technical approach and make correct and appropriate comparisons for each Riggs Park home. The only scientifically tenable approach for comparing an EPA benzene standard with the indoor air concentration for each home is to subtract the background benzene concentration from the measured indoor air benzene concentration in each home. That is, the indoor air concentration measured for each Riggs Park home should be adjusted by subtracting the background benzene concentration measured outside the home from the concentration measured inside the home.

It should also be noted that the home-specific background level should also be used to determine when the vapor mitigation systems are no longer required. That is, the target remediation level for each home should be set to match the outdoor air concentration, as EPA correctly notes that it is impossible to remediate below ambient levels. However, once again, the site-specific (home-specific) background level should always be used to represent the background ambient conditions---not an upper-bound 95" percentile concentration derived from another distant population of homes in the general area.

Answer: It appears that the District is assuming that the difference between indoor and outdoor air concentrations of volatile organic compounds (VOC) is completely attributable to vapor intrusion. However, VOC concentrations are typically higher in indoor air than in outdoor air for reasons other than vapor intrusion. Benzene concentrations in indoor air, for example, are typically higher than benzene concentrations in outdoor air due to many indoor chemical sources, such as cleaners, paints, glues and cigarette smoke; reduced air circulation and dilution indoors; and lack of direct sunlight to photodegrade benzene indoors.

The District's indoor and outdoor air data collected in 2006 in homes located outside the plume demonstrate this general relationship between indoor and outdoor VOC concentrations. In 2006, DOH sampled indoor air in 52 homes which are located outside the boundary of the plume. The average indoor air concentration for benzene inside those 52 homes was 2.7 ug/m^3, versus 1.9 ug/m^3 measured by DOH in outdoor ambient air during the same period.

Further, if EPA were to adopt the District's proposed technical approach, it would be necessary to install vapor mitigation systems in many homes in the District that are not affected by the Chevron plume. Moreover, such systems would not be effective because the VOC sources do not originate from beneath the slab.

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Question 6: It should be noted that in adding the 95" percentile background benzene concentration to each home, EPA is only protecting 5 percent of the residents instead of the 95 percent of Riggs Park residences.

Answer: It appears that the District is assuming that 100 percent of the measured indoor air concentrations of VOCs in homes located above or outside the plume is attributable to the Chevron plume. Rather, EPA's selection of the 95 percentile background concentration is to assure, with a 95 percent statistical confidence level, that the elevated concentrations measured are not caused by background sources.

Question 7: In its decision-making documents, EPA has stated that an "innovative independent remediation system" would be employed in Area B. District staff were very impressed with the presentation provided at the Region 3 Corrective Action Workshop held at Rocky Gap Maryland, of advanced and accelerated remediation by EPA's invited contractor. This technology employs a combination of remediation techniques, such as air stripping, vapor extraction, air sparging, and recirculation of groundwater pumping - all of these taking place below ground with minimal disruption to the impacted community. The District firmly requests that this advanced and innovative technology be employed on behalf of the Riggs Park residents.

Answer: EPA is pleased that the District supports EPA's selection of an Independent Remediation System (IRS) as an added component to the Final Remedy. While the EPA-approved IRS will include the remediation techniques that the District has listed, please note that the IRS as described in the Final Decision and Response to Comments document is a generic system, not a proprietary system. Federal law prohibits EPA from favoring a particular proprietary system or vendor.

■ Response to Comments from Walter and Francis Reeder, dated September 23, 2008

Question 1: We are objecting to the proposed final remedy in AOC [sic] as presented by EPA during the Informational Session held September 4, 2008. Why is Area B (alley south of Eastern Avenue) the only area to have an installed remediation system?

Answer: The remedy in the AOC is EPA's Final Remedy for the Facility. The Final Remedy was selected by EPA in the April 2008 Final Decision and Response to Comments after a public comment period. EPA selected the Final Remedy based on input from the District and the community which urged EPA to install an Independent Remediation System in Area B on the District side.

The Final Remedy includes continuing the existing groundwater remediation system in Area A and installing an Independent Remediation System (IRS) and angled recovery wells in Area B. Area B is the only area to have an IRS because liquid gasoline is present

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only in Areas A and B and the existing groundwater remediation system is already located in Area A. The objective of the IRS is the elimination of liquid gasoline sources which prevents further contamination of the groundwater. EPA anticipates that once the liquid gasoline in Areas A and B is eliminated, the entire plume will be self-cleaning due to rapid biodegradation of dissolved phase hydrocarbons.

Question 2: Why did EPA not known [sic] that the upgraded dual phase extraction system installed in 2005 is ineffective? The system's mission is to prevent any new releases from migrating into the District. Yet Gannett Fleming's (subcontractor of Chevron) maps for Years 2007 and 2008 show an increase of benzene in MW25A which is at least 15 properties away from Area B and at least 270 feet from the gas station (source). Where is the source for the release?

Answer: EPA disagrees with the commenter's assertion that the extraction system is ineffective. To the contrary, data collected show that the dual phase extraction system has been working effectively. Since the system's expansion in 2005, benzene concentrations in groundwater on the District side have steadily declined and the benzene plume has retreated and shifted slightly northward. Regarding monitoring well MW-25A, benzene concentrations have not been detected in the groundwater sampled from this well since 2004, and MTBE concentrations in the groundwater have been declining. The following chart summarizes the benzene and MTBE concentrations from groundwater sampled from monitoring well MW-25A from June 2004 through September 2008:

MW-25A	Benzene (ug/m3)	MTBE (ug/m3)
06/04/04	ND (1.0)	107.0
08/02/04	ND (1.0)	238.0
09/15/05	ND (1.0)	28.6
03/24/06	ND (1.0)	17.1
10/04/06	ND (1.0)	16.0
03/27/07	ND (1.0)	6.1
10/03/07	ND (1.0)	5.8
04/01/08	ND (1.0)	36.0
09/24/08	ND (1.0)	4.6

Notes: ND-Not Detected above reporting limit shown in parenthesis.

Question 3: Is EPA providing documents to the community that the old non-effective extraction wells in Area A were free of contaminations in 2005? Were the wells removed? What were the contaminants? In 2001 and 2002 Chevron was only required to submit the analytical results for compounds found in gasoline, BTEX and MTBE to the residents. The community became aware with the emerging of [sic] the Superfund Program.

Answer: The old extraction wells were not non-effective. EPA approved those wells for abandonment because they had successfully removed gasoline from the surrounding soils and were no longer necessary in that area. In accordance with Maryland regulations, the six wells were abandoned in 2004 by pouring bentonite (clay) chips into the well to one foot below the top of the casing, and then the casing and well vault were filled with concrete to grade.

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Information about the dual phase extraction system, including the abandonment of the old extraction wells, can be found in the EPA-approved "Interim Dual-Phase Extraction Design Plan and Specifications, October 2003." That document can be found in the Administrative Record for the Statement of Basis and is available in the Lamond Riggs Library for public review.

Chevron is only required to provide analytical results for compounds related to the gasoline release. Those compounds are benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary-butyl ether (MTBE). Perchloroethylene (PERC), a dry cleaning solvent, was discovered in 2002 during the site investigation. Since PERC is not a contaminant associated with gasoline, but rather is commonly associated with dry cleaning activities, EPA determined that PERC is not related to the Chevron gasoline release. The PERC contamination, therefore, is not within the scope of EPA's RCRA investigation. EPA's Superfund Removal program has taken the lead on investigating the PERC release.

Question 4: Why is EPA rushing their proposed remedy? What data is EPA using for the final remedy? Have the latest results from the testing conducted by the District Government's subcontractor been analyzed and considered in the final remedy?

Answer: EPA did not rush the remedy selection process. EPA invited the public to comment on the proposed final remedy during a 60-day public comment period and selected the Final Remedy after consideration of all the public comments received. In addition, the Final Remedy was based on seven years of investigative information accumulated between 2001 and first quarter of 2008. The investigative information included thousands of sampling results including the District's sampling results of 97 homes in 2006 and follow-up test results up to the April 2008 issuance of the FDRTC. EPA understands that the District is still collecting data and EPA will evaluate new data furnished by the District.

Question 5: Where the [sic] documents to support the gas station (former Chevron) is cleaned of gasoline contamination? EPA made the statement at the Informational Session. Why did EPA allow Chevron to "clean up" its source and further contaminated [sic] DC? How will angle recovery wells protect the community? The gasoline has already migrated into the District.

Answer: Documents supporting the abandonment of the old extraction wells at the former Chevron gasoline station can be found in a series of pre-2005 quarterly progress reports that document the performance of the old dual phase extraction system. Those progress reports are contained in the Administrative Record for the Facility and are available in the Lamond Riggs library for public review. Recovery wells were selected for abandonment because the abandoned wells had effectively removed gasoline from the surrounding soils during their decade of operation. Neither liquid gasoline nor gasoline vapor had been detected in groundwater from those wells for several years prior to 2005.

By requiring Chevron to cleanup the liquid gasoline source, EPA has forestalled further groundwater contamination in the District. The objective of the groundwater remediation

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activities is the elimination of liquid gasoline sources thereby preventing further contamination of the groundwater. EPA anticipates that once the liquid gasoline in Areas A and B is eliminated, the entire plume will be self-cleaning due to rapid biodegradation of dissolved phase hydrocarbons.

The future angled recovery wells will enlarge the capture zone, accelerate groundwater movement, extract contaminated soil vapor, and enhance product degradation in Area B.

Question 6: Whose standard (MD, DC, EPA) will EPA use for the final remedy? The question (along with many others) was asked at the Informational Session. Promises were made to answer all residents' questions. Were promises kept? Has EPA formed a partnership with the District of Columbia Government on remediating Riggs Park? The DC agencies present had no voice during the Informational Session.

Answer: The standards for the Final Remedy are set forth in the April 2008 Final Decision and Response to Comments (FDRTC). EPA, the Agency for Toxic Substances and Disease Registry, and the District have jointly prepared a fact sheet to explain the various standards. Please see Attachment 1 for a copy of that fact sheet.

From August 30, 2007 to October 29, 2007, EPA accepted comments on the Statement of Basis (SB) in which it proposed its remedy for the Facility. EPA responded to all comments and questions raised on the SB before selecting the Final Remedy in the FDRTC.

EPA has not formed a partnership with the District to remediate Riggs Park. However, EPA continues to keep the District informed on all aspects of the remediation and will continue to evaluate data collected by the District.

With respect to the District's participation during the Informational Session, since it is EPA who entered into the AOC with Chevron under federal authority, it was appropriate for EPA, and not the District, to respond to inquiries regarding the AOC.

■ Response to comments from Delores Ford, September 23, 2008

Question 1: Interim Measure work plan for vapor sampling and mitigations at resident homes [should be carried out] at a minimum of 8 times per year; at the beginning, and during and end of each seasonal change for each home.

Answer: The vapor mitigation systems that EPA is requiring Chevron to install will be in operation 24 hours per day, 365 days per year. Each system will be sampled once a year to monitor the effectiveness of the system. Conducting sampling eight times per year is not warranted as it would be overly disruptive to the residents.

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Question 2: Medical monitoring should be made available to each member of each residence for the rest of their lives, especially those that may have stayed a consistent period of time in either of the homes since the gasoline spill occurred.

Answer: The Agency for Toxic Substances and Disease Registry (ATSDR) has completed three Health Consultation reports on the Riggs Park community which are available in the Lamond Riggs library for public review. ATSDR has determined that all indoor and outdoor air VOC concentrations are at levels that are not expected to cause adverse cancer or non-cancer health effects in members of the Riggs Park community. ATSDR has classified the Chillum Facility as "No Apparent Public Health Hazard" and does not recommend further medical study or monitoring.

Question 3: A private consulting contractor independent of Chevron should monitor and check for new releases, identify and [sic] immediate or potential threat to human health, or the environment at or from the facility. This should occur 3 times each quarter. A written report should be presented to the Riggs Park Committee, City Counsel Representative, DOE, DOH and a source considered by the committee. Chevron [sic] part in this is to pay the cost for each process for the duration. Otherwise, Chevron and EPA give the appearance that Chevron can legally police themselves. A written schedule of these events should be provided to the Riggs Park Committee for the year for acceptance and approval.

Answer: Chevron is not policing itself; rather Chevron is performing the necessary work selected by EPA in the FDRTC, pursuant to a federally-issued and enforceable Consent Order. EPA and the District are overseeing Chevron's work including hiring independent contractors to collect quality control samples. Moreover, Chevron will be subject to stipulated penalties if it violates the Consent Order once it becomes effective.

Question 4: This Consent Order should be delayed until all questions have been satisfactory answered to the residents, as well as they should receive their results.

Answer: The purpose of this document is to respond to the public comments submitted on the proposed Administrative Order on Consent (Consent Order), RCRA-03-2008-0355TH. The Consent Order becomes effective once EPA responds to public comments and provides Chevron with an executed copy of the Consent Order. EPA believes that it has responded satisfactorily to comments received and that it is appropriate at this time to make the Consent Order effective.

It is unclear to which results the comment is referring. Residential sampling results obtained to date by Chevron, EPA and the District are in the Administrative Record for the Facility and are available in the Lamond Riggs Library for public review. If the comment is referring to the sampling required by the Consent Order, those sampling requirements do not take effect until the Consent Order is effective.

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■ Response to Judith Mills Comments, dated September 23, 2008

Question: Why aren't DC Standards being used for this Riggs Park Site. You stated only homes with measured indoor air concentrations exceeding EPA's indoor air standards are qualified for installation of individual vapor mitigation systems. Currently, only five homes above the plume have measured indoor air concentrations exceeding EPA standards. How many plumes are there?

Answer: Please refer to EPA's responses to Walter and Francis Reeder's Question #6 and the District of Columbia's Question #4 for discussions concerning EPA's standards. Regarding the number of plumes, there is one combined dissolved phase plume which includes both the benzene and MTBE plumes.

■ Response to Cleo Holmes Comments, dated September 23, 2008

Question 1: Why does EPA appear not to disclose the remediation system is being installed in the Riggs Park residential community in the District of Columbia?

Answer: EPA has, in fact, described the conceptual design of the Independent Remediation System in the April 2008 Final Decision and Response to Comments. Design details will be available after a contractor is selected to install the system and the design details are finalized.

Question 2: Is the District an EPA approved RCRA C and RCRA I state?

Answer: The District has been authorized for the RCRA Subtitle I Leaking Underground Storage Tank Corrective Action program and the RCRA Subtitle C Hazardous Waste Management program, but not the RCRA Subtitle C Hazardous Waste Corrective Action program. Moreover, RCRA Section 7003 Authority is not authorizable.

Question 3. Why did EPA decide the District of Columbia will not have any input in the implementation order on behalf of the residents of the District of Columbia?

Answer: The District had input on the proposed RCRA 7003 AOC via the public comment process. EPA has, in fact, received comments from the District and has responded to them as set forth above.

Question 4. Why is the remediation system not designed to clean up the groundwater?

Answer: The remediation system is designed to clean up the liquid gasoline present in Areas A and B. The liquid gasoline is the source of dissolved phase gasoline contaminants (plume) in the groundwater. EPA anticipates that once the liquid gasoline is removed, the plume will be self-cleaning due to rapid biodegradation of dissolved phase gasoline contaminants.

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Question 5. Why is the remediation system not designed to address soil contamination on Oglethorpe St?

Answer: Based on extensive groundwater sampling by Geoprobes and monitoring wells, there is no gasoline-contaminated soil or liquid gasoline present on Oglethorpe Street or any areas outside Areas A and B. Dissolved phase groundwater contamination is not considered soil contamination. Liquid gasoline may be interpreted as soil contamination which is present in the smear zone intercepting the water table in Areas A and B.

Question 6. With some homes on Oglethorpe St. being 3.5 ft. to 9 ft from the water table why does this remediation system offer no protection for the residents of Oglethorpe St.?

Answer: Pursuant to the 2002 Order, EPA required Chevron to install a vapor mitigation system in each home for which EPA's data (data collected by EPA or under EPA's supervision) showed concentrations of indoor air in excess of EPA's standards. Chevron has installed a vapor mitigation system in one home on Oglethorpe Street. With respect to the remaining homes on Oglethorpe Street, EPA's data have not shown that soil vapor is migrating into those homes in concentrations that would pose a threat to human health.

Question 7. What protection does the additional remediation system being installed in the District of Columbia offer all the residents of Eastern Ave in the District of Columbia?

Answer: The goal of the angle wells and Independent Remediation System is the clean up of the liquid gasoline source in Area B. Once that source is eliminated, the dissolved phase plume underlying the neighborhood will dissipate through biodegradation.

Question 8. Why did EPA Superfund not investigate the used oil and used fuel tank pits located at the suspect service station for chemicals that are affecting the residents of the District of Columbia?

Answer: EPA is not aware that any used oil pit ever existed at the Facility. Moreover, used oil is a heavy motor oil that does not contain dissolved constituents that can contaminate groundwater. It is unclear what used fuel tank pit the Commenter is referring to because fuel tanks contain only fresh fuel, not used fuel. EPA's Superfund has no role in investigating the fuel (gasoline) release at this site. The fuel release is the responsibility of the EPA RCRA team.

Question 9. Why didn't EPA under RCRA C investigate the used oil and used fuel tank pits for hazardous waste that may be affecting the residents of the District of Columbia as a part of implementation order?

Answer: See EPA's answer to question 8, directly above on the issue of used oil and used fuel tank pits.

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Question 10. Why is the EPA and Chevron doing a sub-standard investigation and not offering the District of Columbia any oversight?

Answer: EPA disagrees that its investigation is sub-standard. The public is aware of the significant resources EPA has expended investigating and remediating the Chevron gasoline release pursuant to the 2002 Order. EPA has required Chevron to install over 80 new groundwater monitoring wells, four soil vapor monitoring wells, 16 product recovery wells, and 232 temporary Geoprobe wells. Cumulatively, as of June 2007, Chevron has collected over 2300 groundwater samples, 14 basement sump samples, 300 soil samples, over 260 soil vapor samples from 90 properties, and over 50 indoor and ambient air samples from 20 properties. EPA has reviewed the data collected by Chevron along with indoor air and soil vapor data collected by EPA from 32 homes and indoor air data from 97 homes collected by DOH. In addition, the District has independent regulatory authority and has been overseeing Chevron's work including hiring independent contractors to collect samples.

Question 11. What power is EPA enforcing over the District of Columbia that causes the District back [sic] away from the RCRA C and RCRA I authorities in protection of District residents?

Answer: The District has been authorized for the RCRA Subtitle I and RCRA Subtitle C hazardous waste management programs and has independent authority to order Chevron to conduct work under those programs. The District has not been authorized for the RCRA Subtitle C corrective action program. EPA has not used any enforcement authority to prevent the District from requiring Chevron to perform additional work.

Question 12. Why didn't EPA require Chevron to remediate the soil in residential areas to the District's Tier 0 [sic] Standards for soil as adopted under DCMR Title 20, 6208?

Answer: See EPA's response to Question 5, above. As stated in that response, EPA is requiring Chevron to clean liquid gasoline present in the smear zone in Areas A and B. That liquid gasoline when present in the smear zone can be considered soil contamination.

Question 13. Why didn't EPA require Chevron to remediate the groundwater in residential areas to the District's Tier 1 standards for ground water quality as adopted under DCMR Title 20, 6209?

Answer: EPA is requiring Chevron to cleanup groundwater to meet drinking water standards established under the Safe Drinking Water Act, 42 U.S.C. Section 300g-1. Those standards which are referred to as Maximum Contaminant Levels (MCLs) are equivalent to or more stringent than the District's Tier 1 standards.

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Question 14. Why didn't EPA require Chevron to remediate Upper Concentration Limits for benzene in ground water as adopted under DCMR Title 20, 6210.1?

Answer: See EPA's answer to Question 13, directly above.

Question 15. Why would EPA author an Implementation Order to remediate property within the District of Columbia that does not require responsible party, Chevron, to adhere to District standards DCMR Title 20, 6206 thru 6207?

Answer: See EPA's answers Questions 13 and 14, directly above, and EPA's answer to Walter and Francis Reeder's Question 6.

Question 16. After District residents complained Chevron [sic] did not provide residents full disclosure of test results of samples taken from resident properties, why would EPA issue an implementation order to remediate residential properties without residents having full disclosure of chemicals that are affecting their properties?

Answer: Chevron has complied with the reporting requirements in the December 2002, Administrative Order (Order), RCRA-03-2003-0006th, which require Chevron to submit to EPA the results of all sampling, tests, and other data generated by Chevron pursuant to the Order. The Order does not require Chevron to provide residents with all sampling results, but Chevron has voluntarily sent sampling results obtained from individual properties to property owners. The December 2002 Order requires Chevron to provide EPA with analytical results for compounds related to the gasoline release. Those compounds are benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary-butyl ether (MTBE). All of Chevron's sampling results are available in the Lamond Riggs Library for public review.

Question 17. Why did EPA not properly enforce RCRA Subtitle C "cradle to grave" tracking and management priorities related to the used oil and used fuel tank pits buried at gasoline station off [sic] which the RCRA Administration Order is based?

Answer: See EPA's response to Question 8, above, on the issue of used oil and used fuel tank pits. With respect to RCRA Subtitle C, the decision to exercise enforcement authority is a matter of agency discretion. EPA's involvement at the Facility began in October 2001, by request of then Councilmember Fenty, District of Columbia. In December 2002, EPA issued an Administrative Order (Order), RCRA-03-2003-0006, pursuant to Section 7003 of RCRA, 42 U.S.C. § 6973. In addition, pursuant to RCRA § 7003, EPA is issuing the Administrative Order on Consent, RCRA-03-2008-0355TH, requiring that Chevron, among other things, implement EPA's Final Remedy. RCRA § 7003 gives EPA the authority to require parties to investigate and clean up hazardous releases. EPA's use of its 7003 authority is and continues to be the appropriate mechanism to address the contamination at and emanating from the former Chevron facility.

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Question 18. Will EPA require Chevron through MDE release [sic] all documents relating to historical installation, sampling, complete lab reports, and maintenance records available for the used oil and used fuel tank pits buried at the service station?

Answer: See EPA's answer your Question 8 above regarding used oil and used fuel tank pits. As part of the site investigation, EPA obtained and reviewed the documents it determined were necessary to investigate and clean up the gasoline release. All such documents are contained in the Administrative Record for the Facility which is available in the Lamond Riggs Library for public review. Documents in MDE files can be obtained from MDE under its public information laws. Please contact Herbert Meade of MDE to to review MDE files on the Chillum site (hmeade@mde.state.md.us, 410-537-3386).

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FACT SHEET FOR THE CHILLUM/RIGGS PARK COMMUNITY
Comparison of Indoor Air Levels Used by the U.S. Environmental Protection Agency (EPA) Region 3; U.S. Agency for Toxic Substances and Disease Registry (ATSDR); and the District of Columbia (the District)

INTRODUCTION:

The purpose of this factsheet is to provide community members at the Chillum/Riggs Park site in Washington, DC with more information on the different "comparison levels" being used to evaluate and make decisions about levels of indoor air contaminants found at this site. Table 1 summarizes the different levels by contaminant and by agency for the gasoline constituents of concern at this site. This table includes the action levels being used by EPA Region 3 as *cleanup levels* at this site. This table also shows the *screening levels* that EPA, ATSDR, and the District of Columbia ("District") historically used or are using to determine the need for, and extent of, cleanup at this site, and on the health agency side to evaluate the potential for health effects in the community. The District has not yet selected an action level or levels (or *cleanup levels*) for this site, but anticipates that it will evaluate chemicals in addition to those identified in Table 1; may evaluate the cumulative risk posed by exposure to multiple chemicals: and because it is evaluating cumulative risk, may not use screening levels when making cleanup decisions. Definitions to help understand this information follow Table 1. Table 2 summarizes the different agencies' roles, responsibilities and contact information for this site.

Table 1. Comparison of Cleanup and Screening Levels by Chemical and Entity for the Chillum/Riggs Park Site in Washington, DC

	Cleanup Levels[1]	Screening Levels[2]			
	ug/m3	ug/m3			
	EPA	EPA[3]	ATSDR Acute/Intermediate[4]	ATSDR Chronic[5]	District[6]
Benzene	8	0.23 to 23	30/20	10 (0.1 CREG)	.8
Toluene	5,000	5,000	4,000/not available	300	1500
Ethylbenzene	1,000	1,000	40,000/4,000	1,000	3800
Xylenes	100	100	9,000/3,000	200	390
MTBE	17	1.6 to 160	7,000/2,000	2,000	160

EXPLANATION OF THE TABLE:

1. **Cleanup Levels** refer to the concentrations of a chemical that a regulatory agency has set to take a response action at a particular site. *Cleanup levels* are established by the regulatory agency on a site-specific basis to identify the cleanup goal at a particular site and to determine the level at which remediation is triggered. It is important to note that the environmental agencies at this site (EPA and the District's) have not established national/District-wide non-site specific cleanup "standards" for gasoline plume constituents in indoor air or soil vapor.

2. **Screening Levels**. Think about these numbers as a place to start. These numbers change over time as new science becomes available. Other names for screening values are "health based comparison values," "comparison values," "risk based concentrations," or "guidance values." These are numbers that help agencies start evaluating environmental sampling data. These numbers are not health effect levels, nor are they cleanup levels, or action levels. They are meant to be default numbers that let you "screen out" a problem from further consideration. This means you can have a sampling result that exceeds a screening value and a public health agency can still make the determination that the concentration is not high enough to actually make a person sick based on the results of the comprehensive public health review of the site-specific information. These levels are generally used to eliminate homes that do not pose significant health threats. That is, homes with levels lower than screening levels are eliminated from further evaluation or study while homes with concentrations higher than screening levels require additional evaluation.

3. EPA screening levels at this site are based on 2007 EPA Region 3 Risk Based Concentrations (RBC) table.

4. ATSDR Acute and Intermediate Comparison Values in this table are based on ATSDR's 2008 screening values, with the exception of the intermediate value for ethylbenzene, which is based on the ATSDR's 2007 screening value to be consistent with the May 2007 ATSDR Record of Activity Health Consultation evaluating the public health protectiveness of EPA's proposed cleanup levels. ATSDR refers to these values as Minimal Risk Levels or MRLs. ATSDR acute values screen for non-cancer health effects for exposures lasting 14 days or less. Intermediate values are for screening for non-cancer health effects for exposures from 14 days to one year.

5. ATSDR Chronic Comparison Values in this table are based on ATSDR's 2008 screening values. ATSDR refers to these values as Minimal Risk Levels or MRLs. ATSDR chronic values are for screening for non-cancer health effects for exposures lasting from one year or longer. For the chemical ATSDR evaluates as a human carcinogen in the table (benzene), ATSDR also included the Cancer Risk Evaluation Guideline (CREG) as the lower end of this

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screening range. The CREG uses the EPA Cancer Slope Factor to estimate the concentration to produce a lifetime risk of one additional cancer in a million people.

6. The District's screening levels were set forth in a 2005 Memorandum prepared by the Department of Health, Environmental Heath Administration, titled "Target Indoor Air Action Levels." The District may adjust its screening levels over time as science evolves.

BENZENE.
EPA's *clean-up value* for BENZENE was selected based on site-specific background indoor air concentration at a 95 percent confidence interval. The data for the background calculation were based on indoor air data collected by the District from homes outside the plume at Riggs Park in 2006. The selected value is within the acceptable cancer risk range of one-in-ten thousand to one-in-one million in accordance with the National Contingency Plan* remedy selection criteria. EPA's *screening level* is based on a cancer risk range of one-in-ten thousand to one-in-one million. The concentration 0.23 ug/m3 = a lifetime risk of one cancer per one million people; and 23 ug/m3 = a lifetime risk of one cancer per ten thousand people. The District's *screening level* for benzene, identified in the District's 2005 Memorandum (see supra, n. 6), is also set forth in Appendix G of the District's 2002 Risk Based Correction Action Plan Guidelines, which in turn is based on the 2000 EPA Region 3 RBC table.

TOLUENE, ETHYLBENZENE, and XYLENES
EPA's *clean-up values* for TOLUENE, ETHYLBENZENE and XYLENE were selected based on the EPA reference concentration (RfC). The RfC is an estimate of a daily inhalation exposure of the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. The District's toluene, ethylbenzene and xylene levels were set forth in the District's 2005 Memorandum (see footnote number 6 above). ATSDR has acute and chronic exposure duration non-cancer *screening levels* for toluene, and has acute, intermediate, and chronic exposure duration non-cancer *screening levels* for ethylbenzene, and xylenes.

MTBE (Methyl tert-Butyl Ether)
EPA's *clean-up value* for MTBE was selected based on site-specific background indoor air concentration at a 95 percent confidence interval. The data for the background calculation were based on indoor air data collected by the District from homes outside the plume at Riggs Park in 2006. The selected value is within the acceptable cancer risk range of one-in-ten thousand to one-in-one million in accordance with the National Contingency Plan* remedy selection criteria. EPA's *screening level* is based on a cancer risk range of one-in-ten thousand to one-in-one million. A concentration of 1.6 ug/m3 = a lifetime risk of one cancer per one million people; and 160 ug/m3 = a lifetime risk of one cancer in ten thousand people. The District's MTBE level was set forth in the District's 2005 Memorandum (see supra, n. 6) ATSDR evaluates MTBE for non-cancer effects using acute, intermediate, and chronic exposure duration non-cancer *screening levels.*

**The National Contingency Plan (NCP) is the federal government's blueprint for responding to both oil spills and hazardous substance releases. The NCP is the result of our country's efforts to develop a national response capability and promote overall coordination among the hierarchy of responders and contingency plans.*

Table 2. Agency Roles, Responsibilities and Contact Information for the Chillum/Riggs Park Site, Washington DC

Agency name	Agency site role	Agency contact
Agency for Toxic Substances and Disease Registry (ATSDR)	Federal advisory agency on public health. ATSDR is not a regulatory agency and does not develop or set regulatory standards. ATSDR provides public health advice and technical assistance to other agencies and the community at this site.	Lora Werner, 215-814-3141, lkw9@cdc.gov
District Department of the Environment (DDOE)	Local environmental regulatory agency, previously part of the DC DOH. Conducting independent community environmental sampling at the site. Has regulatory authority over environmental contamination concerns in the District, but has not yet initiated enforcement action at this site at this time.	Sharon Cooke, 202-673-6738, Sharon.Cooke@dc.gov
District Department of Health (DOH)	Local public health agency (regulatory and advisory authorities). Previously conducted independent community environmental sampling at this site, now being conducted by DDOE. Among other public health responsibilities, administers District's cancer registry and asthma education programs.	Ron King, 202-698-4170, Ronald.King3@dc.gov
Environmental Protection Agency (EPA)	Federal environmental regulatory agency with enforcement authority over Chevron. Waste Management and Chemicals Division oversees order with Chevron, including characterization of gasoline contamination and establishment of action and cleanup levels for gasoline chemicals.	Andrew Fan, 215-814-3426 fan.andrew@epa.gov

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