

NOTICE OF FINAL DECISION TO APPROVE A PERMIT MODIFICATION

The Tennessee Department of Environment and Conservation's (TDEC) Division of Solid Waste Management (DSWM) has made a final decision to approve a Class 3 Permit Modification for Velsicol Chemical LLC; EPA ID Number: TND 06 131 4803. The modification will allow Velsicol to implement a remedy for environmental contamination at their closed plant site located at 4902 Central Avenue, Chattanooga, Hamilton County, Tennessee 37410. The modification to Velsicol's Corrective Action Permit, TNHW-105, was effective as of July 5, 2011. The approval follows an extended comment period (normally 45 days) from December 7, 2011 to February 11, 2011. Comments were received from the community and the facility during the 66-day comment period, including those received at the public hearing conducted on January 6, 2011. These comments are addressed in the DSWM's Response to Comments document.

The purpose of the modification was to add a site-wide final remedy to Velsicol's permit. The remedy includes installing and maintaining a 24" soil cover over residual soil contamination, which still remains after waste removal activities. In addition, the corrective action remedy has provisions for collecting contaminated groundwater and routing it to the Chattanooga sewer system for disposal. Velsicol will be required to continue to monitor and collect and dispose of coal tar from the asphalt-capped Reilly Tar Area. Velsicol will also be required to file financial assurance with the DSWM in an amount that can cover the long-term costs of maintaining the soil cover, required remedial actions, and site security and inspection activities.

This permit modification is issued under the authority of the Tennessee Hazardous Waste Management Act of 1977, as amended, Tennessee Code Annotated, Section 68-212-101 et seq., and Tennessee Rule Chapter 1200-1-11, Hazardous Waste Management.

A copy of the final permit modification, including the Response to Comments document, is available for public inspection at the South Chattanooga Branch Library, 925 W. 39th St., Chattanooga, Tennessee 37402 (423-757-5310) and are also available for public inspection during normal business hours, 8:00 a.m. to 4:30 p.m., Monday through Friday, except legal holidays, at the TDEC Chattanooga Environmental Field Office, Public Access Area, Chattanooga State Office Building, Suite 550, 540 McCallie Avenue, Chattanooga, TN 37402 (423-634-5745) or at DSWM's Central Office, 5th Floor, L & C Tower, 401 Church Street, Nashville, TN 37243-1535 (615-532-0780). Additional information can be viewed at the Bethlehem Community Center, 200 W. 38th Street, Chattanooga, TN 37410 (423-266-1384).

For further information, contact: Mr. Roger Donovan; Tennessee Department of Environment and Conservation; Division of Solid Waste Management; 5th Floor, L & C Tower; 401 Church Street; Nashville, TN 37243-1535; telephone 615-532-0863, or e-mail Roger.Donovan@tn.gov.

TDEC is committed to principals of equal opportunity, equal access, and affirmative action. Contact the EEO/AA Coordinator at 1-888-867-7455 or the ADA Coordinator at 1-866-253-5827 for further information. Hearing impaired callers may use the Tennessee Relay Service (1-800-848-0298).

Persons who wish to be on DSWM's mailing list should request a Mailing List Request form by calling or writing: Public Participation Officer; Division of Solid Waste Management; TDEC; 5th Floor, L & C Tower; 401 Church Street; Nashville, TN 37243-1535 (615-532-0798); or e-mail Solid.Waste@tn.gov.

RIGHTS OF APPEAL

The administrative and judicial review of this final permit is pursuant under the Tennessee Uniform Administrative Procedures Act, T.C.A. Sections 4-5-317 and 4-5-222, the Hazardous Waste Management Act, T.C.A. 68-212-113, and Tennessee Rule 1200-1-11-.07(7)(k).

NOTICE ISSUED: July 14, 2011

RESPONSE TO COMMENTS

DRAFT MODIFICATION TO CORRECTIVE ACTION PERMIT Velsicol Chemical LLC – Chattanooga, TN

This document has been prepared in accordance with Tennessee Rule 1200-01-11-.07(7)(j). It has resulted from the Tennessee Division of Solid Waste Management's (DSWM) issuance of a draft permit modification to Velsicol Chemical LLC (Velsicol), which is located at 4902 Central Avenue, Chattanooga, Tennessee; EPA Identification Number: TND 061314803. The purpose of this class 3 permit modification is to define the final corrective action requirements for the site's solid waste management units (SWMUs) and areas of concern (AOCs). The remedy will consist of post-demolition site cover construction, including the long-term operation and maintenance of the capped site. The remedy of installing a clean soil cover over contaminated soils and sediments, will serve as containment to the underlying contaminated soil and barrier to human exposure, making the site suitable for zoning-approved redevelopment under the permit. Part A of this document describes the efforts made by the DSWM and Velsicol to obtain public input. Part B summarizes and responds to all significant comments received.

A. Public Involvement Opportunities

On February 17, 2009, Velsicol conducted a public meeting at Alton Park's Bethlehem Community Center, 200 W. 38th Street, Chattanooga, TN. The public meeting addressed the proposed remedy for the closed and recently demolished Velsicol facility. The public notice of the meeting included the establishment of a 60-day comment period, January 16 through March 17, 2009. A follow-up meeting was held on April 21, 2009 after concern was voiced that some interested parties were unaware of the originally scheduled meeting. Comments received during the 60-day comment period and a General Comments, Responses and Recommendations document that Velsicol assembled to address those comments were reviewed by the DSWM as part of the class 3 modification application review. Comments were provided for public review as noted below.

After review of Velsicol's Class 3 Permit Modification Request and writing the draft permit modification, the DSWM issued a public notice of the issuance of the draft modification in the December 7, 2010 edition of the Chattanooga Times Free Press. Several 30-second announcements of the action, referencing the notice published in the newspaper, were also provided over Chattanooga radio stations WJTT-FM 94.5 and WMPZ-FM 93.3. The notice advised that copies of (1) the draft permit modification, (2) the fact sheet, (3) the statement of basis, (4) the public notice, and (5) a response to comments, which Velsicol submitted to address comments received from the public at the above noted meetings and during the pre-draft 60-day comment period, were available for review. The locations of the materials included the South Chattanooga Branch Library, the DSWM's Chattanooga Environmental Field Office, the DSWM's Central Office in Nashville and the Bethlehem Community Center. Velsicol also maintained a repository of the reference documents cited in the statement of basis at the Bethlehem Center. The notice also established a 45-day public comment period and described how interested persons could comment in writing on the proposed action and attend a public hearing on January 6, 2011.

The original comment period for Velsicol's permit modification was from December 7, 2010 to January 21, 2011. Based on numerous requests from the public and one by the Tennessee Department of Health on behalf of the Agency for Toxic Substance and Disease Registry, the DSWM extended the comment period to February 11, 2011. The DSWM held a public hearing for the proposed modification at the Bethlehem Community Center on January 6, 2011. It was well attended by citizens of the community and representatives from several organizations. In addition on February 7, 2011 the DSWM spoke about the permit modification to STOP Toxic Pollution, hosted by Mr. Milton Jackson, at the Bethlehem Community Center.

B. Public Comment/Response Summary

The DSWM received comments from Velsicol and the public during the extended comment period. The public comments included oral comments at the public hearing and a large number of phone calls requesting an extension to the 45-day comment period. In response, the DSWM granted a three week extension. The DSWM also received an extremely large volume of written comments from citizens concerning the proposed remedies for the site. Many were submitted by e-mail and many consisted of a duplicated form letter. The DSWM has combined all public comments into a summary list of comments that is believed to address all the environmental issues covered by the permit. The permit does call for Velsicol to perform corrective action for all releases that have or may occur at their Chattanooga site, which will address current and future human health and environmental concerns. In response to the many health concerns voiced by the community, the Tennessee Department of Health has begun a public health assessment for the Alton Park area.

The public's comments and the DSWM's responses are provided first, with the comments submitted by Velsicol in the next section. Following the response to comments, are other DSWM changes made to the draft modification pages. These changes were based on the comments submitted during the extended comment period.

COMMENTS SUBMITTED BY THE PUBLIC

- 1. Comment:** Hazardous waste from Velsicol is currently coming in contact with rainwater and the effluent is then piped into Chattanooga's storm water and sewer system. Some of the effluent from the facility is flowing into Chattanooga Creek which is a violation of the Clean Water Act.

Response: Currently, rainwater may come into contact with contaminated soil that remains at the Velsicol Chattanooga site, but it does not contact hazardous waste. Except for some coal tar/creosote that underlies the asphalt-capped Reilly Tar Area, all hazardous wastes have been excavated and removed from the site. Hazardous constituents, which leached into the soils from the wastes or spills, still remain at relatively low residual concentrations in the soil and groundwater beneath the site.

Due to storm water contacting soil with contaminant concentrations above screening levels, runoff from the Velsicol site is collected and routed into the Chattanooga City sewer system and does not flow into Chattanooga Creek. Contaminated groundwater pumped from the groundwater collection system is also routed to the sewer system. The City of Chattanooga, Department of Public Works has issued two permits to Velsicol. Wastewater Discharge Permit No. 1010 issued on March 1, 2011 for the discharge of the stormwater that has come into contact with contaminated soils and Wastewater Permit No. 1013 issued on October 15, 2010 for the contaminated groundwater from the Reilly Tar recovery well. The effluent from Piney Woods Spring is also routed to the sewer system. When the contaminated water combines with all the sewage, the contaminant concentrations fall to negligible levels. At the Chattanooga Wastewater Treatment Plant, the low concentrations of volatile and semi-volatile organic constituents are further degraded by the treatment process. The resulting plant effluent released into surface water must not exceed applicable levels. When construction of a soil cover is complete, it will not be necessary to collect storm water, because rainwater runoff from the site will not come into contact with any remaining contaminated soil underlying the cover. However, TDEC's Division of Water Pollution Control says that they will require Velsicol to monitor the runoff from the Reilly Tar Area. Groundwater recovered from the Reilly Tar Area and the effluent from Piney Woods Spring will continue to be routed to the sewer.

- 2. Comment:** The presence of untreated pesticides and herbicides is detrimental to the health of not only humans but also the river's ecology.

Response: There is no exposure to pesticides or herbicides above relevant action levels. Please see Response to Comment 1.

- 3. Comment:** Shouldn't hazardous wastes in water be handled by the Tennessee Department of Environment and Conservation's Division of Water Pollution Control? Due to the flooding potential of the area adjacent to Chattanooga creek, contamination from the Velsicol site will continue to migrate into Chattanooga Creek and the Tennessee River unless the site is properly remediated.

Response: Contaminated storm water and groundwater collected from the Velsicol site is routed to the Chattanooga sewer system, which is regulated by the City of Chattanooga, as authorized by the Division of Water Pollution Control. Map 48499 from the Hamilton County GIS system shows that the 100-year flood plain does not include any of the Velsicol plantsite. A very small area (about 30 feet long) at the far end of the northeast dogleg of Velsicol's property, northeast of the Reilly Tar area, is in the 500-year flood plain.

4. **Comment:** The final remedy permit plans to punch holes in impervious surfaces so polluted water can freely percolate downward and horizontally. All springs and wells will be put in a serious risk by this proposal. This will make contamination harder to remediate.

Response: After installation of the site cover, any contaminated groundwater under the clean soil cover will continue to be collected and routed to the sewer system. The concrete has to be drilled to keep water from ponding on top of the concrete slabs, which could destabilize the cover. Even with the addition of the concrete borings, the soil cover will substantially decrease the volume of water percolating into the groundwater. The water that percolates through the holes in the concrete pads will not be contaminated as it will only percolate through the clean soil cap. Any contamination picked up by water after flowing through the holes, will continue to be captured by the groundwater extraction system at Reilly Tar and the spring water collection system at Piney Woods Spring. There are ten years of sampling and analysis results showing that groundwater contamination from the site is being captured by those systems.

5. **Comment:** DNAPL may be traveling into the deeper limestone aquifer in conduits which may mean it never reaches the Velsicol recovery well.

Response: Fractured-rock conduits have been shown to diminish at depth. Borings into the bedrock at the site have not provided evidence of any significant DNAPL at depth. The idea that DNAPL may be continuing to migrate from the site is not supported either, as indicated by over ten years of monitoring results.

6. **Comments:** All storm water should continue to be diverted to containment wells or tanks where it can be monitored and held for treatment on-site.

Response: Please see Response to Comment 1.

7. **Comment:** How will contaminants be kept from leaching into the groundwater?

Response: Contaminants have already impacted groundwater at the site. To reduce the levels and control the migration of contaminants in groundwater, Velsicol has been implementing interim remedial measures. The remedies include operating a groundwater recovery system; collecting on-site storm water runoff and the effluent from Piney Woods Spring; routing the contaminated waters to the city sewer; removing wastes, contaminated soils and mobile coal tar; and, consolidating and capping some impacted soils at the Reilly Tar Area. The success of those efforts is evidenced by the significant decreases in the concentrations of contaminants in groundwater. Installation of the proposed soil cover will provide additional reductions in total groundwater contaminant mass. Also, please see Responses to Comments 1 and 4.

8. **Comment:** How long and how often will the site be monitored for contaminants leaching to groundwater?

Response: On-site and off-site groundwater level measurements will be taken semi-annually to assure that groundwater flow direction remains consistent and to show that migration of contaminated groundwater is in check for the northeast and southeast plumes. Contamination migrating to the northeast from the site is contained by an extraction well and to the southeast through the capture of the Piney Woods Spring effluent. Water level measurements will be taken from 21 soil and 29 bedrock borings that were completed as monitoring wells, piezometers, and/or groundwater and DNAPL recovery wells. Groundwater quality will be determined by annual sampling and analysis of eight soil wells, six bedrock wells, and Piney Woods Spring. The samples will be analyzed for semi-volatile organic compounds. Five of the wells will also be analyzed for volatile organic compounds. The four DNAPL recovery wells require monthly monitoring. These specific monitoring requirements will continue until the facility receives approval for a change from the DSWM during the permit renewal process or through a subsequent permit modification. Either method would require public notification, an opportunity for public comment, and DSWM approval. Closure of a site by capping soil contamination with the potential for impacting groundwater requires some type of continued groundwater monitoring or a detailed site reappraisal. Groundwater remediation efforts shall continue until contamination drops below the Federal Drinking Water Maximum Contaminant Levels (MCLs) and other relevant action levels.

9. **Comment:** “This community is simply saying NO to the selected cleanup plan which involves a proposal to cap the ground with 12 to 18 inches of soil and allow run-off to be directed into the public sewer system.”

Response: Please see Responses to Comments 1, 7 and 10 concerning water issues and Responses to Comments 11 and 12 concerning soil issues.

10. **Comment:** This runoff could end up in community homes and yards from flooding during heavy rains, and the Chattanooga Creek which flows into the Tennessee River. The Tennessee River is the source of Chattanooga's drinking water.

Response: The Division of Water Pollution Control will only require Velsicol to monitor the runoff from the Reilly Tar Area after the soil cover is constructed. The only contamination that is subject to flooding is the groundwater going into the sewer. The City requires Velsicol to sample the discharge to the sewer. The low volume being introduced to the sewer system immediately becomes diluted by the sewage. During heavy rain events that could cause a bypass, the volume of the groundwater remains the same but the surface water infiltration into the sewage system increases to such a degree that groundwater contaminant levels would be relatively negligible. However, a release of pathogens from the human sewage is still a concern.

In reference to Chattanooga's drinking water, the water intake on the Tennessee River is upgradient (upstream) from where Chattanooga Creek flows into the Tennessee.

- 11. Comments:** The site should be capped with an impervious layer like any other hazardous waste landfill and only then finally capped with soil to protect human health and make monitoring and removal of polluted water solely the responsibility of Velsicol. Will the soil be compacted?

Response: The Velsicol site does not require a Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste landfill cap. Except for the coal tar that remains underneath the asphalt cap of the Reilly Tar area, all wastes have been removed. Based on community concerns, the DSWM has increased the soil cover proposed in the draft permit modification from 18 to 24 inches over areas determined to be contaminated. To minimize settlement and ponding, the barrier soil will be compacted during installation. The soil cover, which is primarily designed for areas with contaminants above industrial screening levels, will be protective of human health and the environment.

In Tennessee, hazardous waste facility permittees are required to maintain site conditions that provide adequate protection to human health and the environment. The remedy conditions, as specified in the permit modification for the Chattanooga site, require Velsicol (permittee) to provide the necessary care to assure that that long-term protection is maintained. It includes provisions for site security; maintenance of the soil and asphalt caps; and groundwater and DNAPL monitoring and recovery. It also requires Velsicol to maintain financial assurance with the DSWM in an amount that at least meets the estimated cost of providing that long-term care.

- 12. Comment:** The proposed cap is not sufficient. The site needs cleaning up and more of the contaminants need to be removed. How far down does the contamination go in the soil?

Response: The Velsicol closure is sufficient for an industrial site still owned and maintained by Velsicol. It is protective of human health and the environment and has been determined to be so by the State and the Environment Protection Agency. The contamination extends completely through the soil overburden beneath the site, and into the upper fractured and weathered zones of the bedrock.

- 13. Comment:** There are 150 known contaminants in the soil and groundwater including DDT pesticides. Was Agent Orange produced at the plant and called by another name?

Response: Through numerous soil, waste and groundwater sampling and analysis activities that looked for a wide range of constituents, Velsicol identified 150 contaminants. Results of the intensive soil investigation found only 41 of the contaminants above the Industrial Regional Screening Levels (RSLs). The SWMUs that contained contamination with those elevated levels underwent some soil removal, but some areas still have concentrations above the conservative RSLs. Sampling did not identify DDT, or Agent Orange, which Velsicol claims were never produced at their Chattanooga facility. The soil cover and the asphalt cap on the Reilly Tar Area, along with security measures to be implemented under the permit modification, will adequately minimize any human exposure to soil contamination. Deed restrictions that limit the types of future development will provide the needed additional controls at the site to assure long-term human safety and protection of the environment.

- 14. Comments:** During summer months the hot and dry weather will lead this soil cap to crack and pollutants will become airborne and continually be a health hazard to the community.

Response: Velsicol will be required to inspect the soil cover for erosion and any other damage, such as cracks, and to timely make the necessary repairs. Please see Response to Comment 36.

- 15. Comments:** DSWM should make sure Velsicol cleans up the site and that this site is truly available for redevelopment because it is the right thing to do for an impoverished community that has suffered for years at the hands of Velsicol's pollution.

Response: Velsicol's site is private property. The DSWM can only require Velsicol to follow the requirements of the Tennessee Rules for Hazardous Waste Management, and the permit conditions that are issued pursuant to those rules. In response to public concerns and a request from the Agency for Toxic Substances and Disease Registry (ATSDR), the DSWM has had discussions with the Tennessee Department of Health to perform a public health assessment for the Alton Park area. The DSWM has offered to provide additional support to the Department of Health by continuing to coordinate with them and by providing information for their assessment. Other Divisions in the Department of Health and Environment and the City of Chattanooga are participating to address the Alton Park Community concerns. If additional actions are recommended by the Department of Health, the DSWM can address those issues during Velsicol's permit renewal process. A public meeting by Velsicol was held on June 13, 2011 to discuss the corrective action permit renewal application.

- 16. Comments:** The asphaltic cap installed in 2005 at Reilly Tar has been seeping coal tar DNAPL. If the asphaltic cap cannot contain toxic substances on the site the community is confident that a loose soil cap will do little good.

Response: The compacted soil cover will not cap areas with coal tar. At present, no cover even exists on those soils. The only area containing coal tar is the asphalt-capped Reilly Tar Area. When it's cold, coal tar is solid and can be picked up. When the temperature rises, coal tar gets soft just like tar. The weight of the cap pressing down on the warmed coal tar can then force the now mobile coal tar upward through a crack in the asphalt cap. Years of monitoring has shown that coal tar extruding through the cap of the Reilly Tar Area is fairly rare, is only a small amount, and really not much of a problem to address. Permit conditions require the permittee to shovel the tar into a bucket for proper disposal.

- 17. Comment:** A bona fide third-party lab should analyze the data from the Velsicol site.

Response: The laboratory testing for Velsicol's Corrective Action Program is performed by GTW Analytical Services, which is part of Laboratory Management Partners, Inc. (LMP) of Memphis. Prior to GTW's early 2009 merger with LMP, GTW was previously known as GTW Analytical Services, LLC. GTW Analytical Services, LLC was created in 1999 by two managers of the laboratory that was formerly part of Velsicol's Memphis Environmental Center. GTW is and has been independent from Velsicol and MEC since 1999. With the exception of a few special tests, all of the facility's soil and groundwater testing after 1999 has been performed by GTW.

18. Comments: On January 6, 2011 a DSWM official at the community hearing said that a more thorough cleanup would be done in a more affluent area but that it was acceptable to do the proposed minimal cleanup in the poor South Chattanooga community where the Velsicol site is located.

Response: The DSWM takes this allegation very seriously. DSWM personnel have listened to the recording of the hearing several times to determine if this statement was made by DSWM personnel and have not identified that statement on the recording. Based on current and future property use, cleanups at all facilities follow the same guidelines and must meet the same standards that will provide the necessary protection for human health and the environment.

19. Comment: What are the levels of contaminants and what are considered safe by EPA?

Response: Please see the table attached at the end of this Response to Comments document. It provides a summary of the soil data and the acceptable Industrial RSLs for no further action decision for solid waste management units (SWMUs). RSLs (Regional Screening Levels for Chemical Contaminants at Superfund Sites) are calculated for the protection of human health. When a contaminant exceeds an RSL, which is a very conservative risk number, a higher site-specific risk value may be calculated based on the site's physical conditions, exposure pathways and current and future property use. When a site exceeds the RSL or site-specific risk value, further corrective action at the site is required. At their Chattanooga site, Velsicol used the conservative RSLs to determine if further action was required at a SWMU.

20. Comments: How many different contaminants are carcinogenic?

Response: Please see Responses to Comments 13 and 19. There are 41 contaminants identified at Velsicol that exceed their respective RSLs. The table attached at the end of this Response to Comments document identifies the 36 constituents that are carcinogenic.

21. Comments: Is thermal remediation being ruled out due to cost or permitting factors? Velsicol should be required to clean up the site using the best available technology.

Response: During the Corrective Measures Study to determine an appropriate remedy for the site, various remedies and the factors associated with those remedies were evaluated, including technical feasibility. Cost and the increased risk of exposure and release to the environment were the basic reasons for thermal treatment being ruled out. Increased risk of release could result from the soil excavation and the extended length of time to implement this particular remedy. Velsicol's selection of installing a soil cover over the contaminated soil is an acceptable remedy. Thermal remediation is not the best available technology for very low concentrations of contaminants over a very large area.

22. Comment: How does DSWM expect 12-18 inches of soil to prevent exposure? A soil cap of this depth may not survive during site reuse.

Response: The DSWM has increased site inspection frequency from quarterly to monthly and raised the minimum soil cover from 18 to 24 inches over the SWMUs that require

implementation of a final remedy. Any reuse of the site other than approved under the corrective action permit, deed restrictions and current zoning will require reevaluation of the cap and remedy. Please see Responses to Comments 11 and 12.

- 23. Comment:** Before this case is closed, more studies are needed to determine if residents in the past and present have and continue to suffer from the toxins which are currently polluting the air, as well as the groundwater, and what health complications have resulted from the exposures of these toxins. How many chemicals are there and what health effects does each chemical have? Why has it taken Velsicol so long to clean-up the site? 27 employees have died of cancer (after 1980). 5 now have prostate cancer. Has anyone looked at the cancer rates in surrounding areas for comparison? If you worked there for more than 15 years, there is a good chance you would get cancer from benzene (according to a Doctor who did health screenings in 1980 on the plant employees). People living at or near the creek may be at increased risk for adverse health effects that may include an increased risk for some types of cancer, skin irritations, and gastrointestinal upset and neurological disorders. A review of the cancer statistics for zip codes 37410 and 37409 for 1988-1990 indicate statistically significant increase rates of lung, pancreatic, and colon cancer. (ATSDR, 1994). Has there been any health claims against Velsicol? Has Velsicol ever admitted to causing any pollution? Has there been any research into Velsicol's past concerning polluting? What will happen about the health care and environmental impact? A lot of people at Alton Park have Asthma. Are people still getting sick? What are you [Velsicol/State (?)] doing today for the people in the community?

Response: Velsicol acknowledges that releases to the environment have occurred at their Chattanooga site. Velsicol has been working, with EPA and the State's approval, to investigate and remediate those releases. The DSWM only has authority to regulate the management of wastes and releases to the environment. The Department of Health is currently working on a health assessment for the Alton Park Community. Please see Responses to Comments 13 and 15.

- 24. Comment:** We want a resolution that will forbid the sale of this land to be used as a future plant site or dump site. Can the community buy the land (an environmental group) to clean it up? What is the process? What will it cost (to buy the land)? This community is tired of industry and don't want it! Why are we here? We want homes, drug stores. We want things to come into the area to change the image of the neighborhood. What kind of industry would be approved for this site? In a meeting held on 2/7/09 Velsicol said the plant site could be used for ball fields. Why is Velsicol changing to just covering the site and using the property for industrial uses. The proposed permit modification does not require the full removal and clean up of site contaminants to restore the property to recreational end-use standards. Velsicol should remain financially responsible for the cleanup. Velsicol should not be allowed to push the costs of a clean up onto the tax payers.

Response: In compliance with local zoning laws and pursuant to the deed restrictions filed with that local zoning authority, as required by the corrective action permit, the Velsicol site will be available for future development. As owner, Velsicol has the legal right to sell or lease their property. If Velsicol sells the property, Velsicol will continue to be responsible for maintaining the corrective action permit and implementing the remedy, unless Velsicol also transfers the permit to the new owner, including the responsibility for the long-term

care of the site. To transfer, the new owner must submit to the DSWM a permit modification request for a change of ownership. The process includes the requirement for public notice of the action, accompanied by a thirty-day public comment period. Before transfer, the new owner would also have to provide financial assurance in an amount that would continue to cover the costs for the long-term care of the site.

- 25. Comment:** The remedy proposed was selected according to criteria in the Velsicol Hazardous Waste Plan, which cannot be located, but they are not as good as the nine criteria in the National Contingency Plan used in making Superfund decisions. In particular the contingency plan specifies among other things the overall protection of human health and the environment, long term effectiveness and permanence, and reduction of toxicity, mobility, or volume and community acceptance.

Response: As detailed in the existing conditions of their permit, Velsicol used criteria similar to that contained in the National Contingency Plan for remedy selection. The specific standards that Velsicol was required to use for evaluation of the final corrective measure alternative included: 1) assure protection of human health and the environment; 2) attain the media cleanup standards set by TDEC; 3) control the source of releases so as to reduce or eliminate, to the extent practicable, further releases that may pose a threat to human health and the environment; 4) comply with applicable standards for management of wastes; 5) long-term reliability and effectiveness; 6) reduction in the toxicity, mobility or volume of wastes; 7) short-term effectiveness; 8) implementability; and 9) cost.

- 26. Comment:** It is not protective to rely on barbed wire fencing, deed restrictions, signs and barriers. Children especially visit dangerous sites. Signs deteriorate, and the land uses change over time.

Response: Fencing, signs and barriers are accepted remedies to prevent human exposure to contamination, but these are only controls that supplement the primary remedy selected for the Velsicol Chattanooga site: the 24-inch soil cover. Under the permit, Velsicol is required to adhere to an inspection schedule of all the provisions of the remedy at the site and to make appropriate repairs, in a timely manner, as required. The cost estimate and the associated financial assurance for long-term care of the site, includes the costs for maintaining those controls. Please see Response to Comment 11. Neither the state nor Velsicol can guarantee that trespassers will be prevented from accessing the site using the security measures cited in the comment. However, they do notify the public that a hazard exists at the site and make it more unlikely and difficult for unauthorized personnel to contact contamination at the site.

- 27. Comment:** What is the long term effectiveness and permanence of just covering up site?

Response: Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time. The soil cap would provide long-term effectiveness via isolation of the residuals by capping and containment. Long-term maintenance and monitoring of the site, with sufficient financial assurance to sustain them, are parts the remedy that ensure that the remedy maintains its ability to protect human health and the environment over time.

- 28. Comments:** Why are we having this meeting? The community has been deprived of their ability to speak on their own behalf because neither Velsicol nor the state has provided a medium in which they can participate.

Response: The original comment period for Velsicol's permit modification was from December 7, 2010 to January 21, 2011. Based on requests from the Tennessee Department of Health on behalf of the Agency for Toxic Substance and Disease Registry, the DSWM extended the comment period, for persons interested in submitting questions or comments to February 11, 2011. Previously, Velsicol held its required public meeting, to notify its intent on modifying the permit, on February 17, 2009. At the request of the public and due to low attendance, the DSWM requested Velsicol to hold an additional meeting with community leaders to explain the modification request. This meeting was held on April 21, 2009. DSWM personnel attended this meeting. The DSWM held a public hearing for the proposed modification at the Bethlehem Community Center on January 7, 2011, that was well attended by citizens of the community. In addition on February 7, 2011 the DSWM spoke about the permit modification to STOP Toxic Pollution, hosted by Mr. Milton Jackson, at the Bethlehem Community Center. The DSWM has received numerous comments from citizens concerning the proposed remedies at the site.

- 29. Comment:** Require Velsicol to submit to independent environmental auditors to ensure the integrity of the process, the quality of their cleanup, and the well being of the residents the department represents.

Response: The DSWM and/or the U.S. EPA have reviewed and approved all the final versions of the corrective action work plans and reports for the Velsicol Chattanooga site. Both agencies provided oversight during the implementation of many of those investigatory and remedial action work plans. Even after the DSWM was granted authority to implement corrective action in lieu of EPA, the federal agency still provided oversight of that work and commented on all decisions as determined necessary. Velsicol followed the corrective measures criteria detailed in Attachment 9 of their existing permit to evaluate alternatives. Please see the Response to Comment 25. The cap along with the groundwater and DNAPL monitoring and recovery provides the necessary protection for human health and the environment.

- 30. Comment:** Will Velsicol or the state buy properties that adjoin their Chattanooga site?

Response: The DSWM does not know of any intention by the State to buy Velsicol or adjacent properties. Parties interested in the Velsicol property have contacted the state. The DSWM does not know if there are buyers interested in adjacent properties.

- 31. Comment:** Have there been samples taken across the street where the elementary school was once located?

Response: The DSWM has no information if samples have been collected in that area. Please see Response to Comment 13.

- 32. Comment:** Have soil samples been collected from the closest residential site?

Response: The DSWM has no information if samples have been collected in that area. Please see Response to Comment 13.

- 33. Comment:** What about dumping of lindane in the southern portion of the plant; or air emissions from the Banville Plant? What about the AOL Plant? What about the drums of chemicals that were allowed to pour on the ground. What about that portion of the plant next to the administrative building that burnt down in the 70's?

Response: There have been extensive investigations covering the entire Velsicol Chattanooga site. There have also been interim soil and waste removals in many areas of the plant, including the southern portion. The 24-inch soil cap will cover all areas of the plant where soil above industrial regional screening levels still remain, providing adequate protection for human health and the environment. Please see Responses to Comments 1, 11, 13, 19 and 23.

- 34. Comment:** The Tennessee Department of Environment & Conservation has to do a better job protecting the health of the community and the environment. We ask that you stop the proposed plan and the potential permit until a better plan with more protective measures can be developed.

Response: The health and protection of the community was the Department's primary concern in the evaluation of the remedy for the Velsicol site. The Department strives to appropriately address all current and future health and environmental concerns. If a remedy implemented in the past is shown not to be adequately protective of human health or the environment, the Department and/or the U.S. EPA have the option and the authority to revisit those sites. The Department of Health is currently working on a health assessment for the Alton Park Community.

- 35. Comment:** I work near Residue Hill, and drive down Wilson Road, and the area around Residue Hill. I see the poorly tended fence and I see the creek when it floods which spills hazardous water from off the site and into the creek, into the streets and on the ground to further pollute the area and I worry about the dust that blows around after and the health effects of the people living there, and well as the people like myself traveling through. I am concerned about the drainage that goes down deep into the groundwater and about toxic air pollution still coming from the site.

Response: Residue Hill is regulated by the Tennessee Department of Environment & Conservation's (TDEC) Division of Remediation. Your email will be forwarded to that Division. Please see Response to Comment 34.

- 36. Comment:** What is the air quality today around the plant site and the neighborhood? Air quality during cleanup? (tearing down the plant)? Air quality before they started the cleanup? Are there any measures of the benefit to the air quality of some of the things they've done from past removal actions? Will contamination escape from the cap? If so what will Velsicol do about it? Has there or will there be an air quality study? Has there or will there be a community health study? People are dying of cancer in the community.

What are you [Velsicol/State (?)] doing today for the people in the community? How far down does the contamination go in the soil? What happens when these chemicals get in the air? What is there evaporation point?

Response: Please see Responses to Comments 1, 11, 13, 14, 19 and 23. The DSWM does not know how much monitoring for airborne contaminants was performed as part of the operations at the Velsicol Chattanooga Plant. Air monitoring was used during some investigation and cleanup activities at Velsicol. During site grading of the soil cover installation, particulates (dust-like contamination) will be monitored and controlled. The remnant concentrations of volatiles (solvent and gasoline-type constituents that easily evaporate) at the Velsicol site do not pose an outside air threat. Those concentrations remaining in the soil, though, are still a concern for their potential to contaminate groundwater or intrude into onsite buildings. Any new construction on site should verify that vapor intrusion is not a concern.

37. Comment: My water tastes bad, smells like bleach. Is my water clean?

Response: Please contact your water service provider. If you have a private well or do not know your service provider, contact the Tennessee Department of Environment and Conservation's Chattanooga Environmental Field Office at (423) 634-5745. They can provide you the appropriate authority for water quality control.

38. Comment: Why are the TN remediation regulations inactive? If they are inactive what standards are they using?

Response: As listed below, the solid waste management units at the Velsicol site are actively regulated by Tennessee Rule 1200-1-11-.06(6)(l).

(l) Corrective Action For Solid Waste Management Units [40 CFR 264.101]

1. The owner or operator of a facility seeking a permit for the treatment, storage or disposal of hazardous waste must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in such unit.
2. Corrective action will be specified in the permit in accordance with this subparagraph and paragraph (22) of this Rule. The permit will contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action.
3. The owner or operator must implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the Commissioner that, despite the owner or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. The owner/operator is not relieved of all responsibility to clean up a release that has migrated beyond the

facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for such corrective action must be provided.

4. This subparagraph does not apply to remediation waste management sites unless they are part of a facility subject to a permit for treating, storing or disposing of hazardous wastes that are not remediation wastes. Additional requirements are located in Tennessee Rule 1200-1-11-.06(22)(C).

39. Comment: All ground cover should be native in origin.

Response: Site specific vegetation requirements will be recommended by a qualified consultant. The state will request that Velsicol take this under consideration.

40. Comment: I cannot grow food in the ground because it is contaminated in a children's play area (Comment from Rossville, Georgia resident).

Response: Your concern is noted. TDEC recommends you contact the Georgia Division of Environmental Quality to investigate the concerns you have with potentially contaminated soil in your area. Please see Response to Comment 13.

41. Comment: There is no reduction of toxicity or mobility when waste is left in place without treatment.

Response: As noted in comment 11, except for the coal tar that remains underneath the asphalt cap of the Reilly Tar area, all wastes have been removed. Waste or "source" removal greatly reduces toxicity and mobility. There is only residual soil contamination remaining at relatively low concentrations, which is dispersed throughout the soil column.

In addition to waste removal, the planned vegetated soil cover will decrease the amount of surface water entering the groundwater system. This will impede the rate of at which contaminants can leach to groundwater, as well as slow the rate of contaminate plume migration. Please see Response to Comment 25.

COMMENTS SUBMITTED BY VELSICOL

- 1. Comment:** Draft Permit Attachment 2, Security, second item labeled as II. Property Use on page 2-1: It is stated in the first sentence that permittee shall manage and limit the use of the facility to industrial use only. However, in the Statement of Basis, Supporting Elements, 3rd bullet item on page 21, it is stated somewhat differently; i.e., permitted uses on the property will be commercial and/or industrial and prohibited uses include dwellings, homes and apartments and schools. Velsicol understands that DSWM's intent is that residential use of the land would be prohibited and that the term "industrial", as used in the Draft Permit, entails commercial activities as described in the Statement of Basis.

Response: DSWM agrees. After implementation of the remedy, any activity allowed under the current zoning should be an acceptable land use. Please see Response to Velsicol Comment 9. DSWM has renumbered the items in Attachment 2, which corrects the formatting error that duplicated the item numbers; made a grammatical correction by removing the word as under item labeled **Security Surveillance**; and changed the term "facility" to "site" in the first sentence under item labeled **Property Use**.

- 2. Comment:** Statement of Basis, Operation and Maintenance, 5th bullet on page 19: It is stated that the Final Remedy construction work will include the installation of fencing on the property line between Velsicol's property and the adjacent Residue Hill Site. As DSWM is aware, the Trustee for the Residue Hill Site installed a suitable fence on the property line during 2010, after Velsicol submitted its Application for the Permit Modification. Velsicol notes that installation of another fence on the property line is appropriately not called for in the Draft Permit.

Response: Agreed. Note: Velsicol will still be responsible for inspections, signage and long-term maintenance of a perimeter fence as described in the permit.

- 3. Comment:** Draft Permit, Attachment 9.6, Corrective Action Remedies, Section IV. DNAPL Measurement and Recovery, Item A. on page 9.6-3: The requirements in Item A should be corrected as follows to correspond to Table 2: "The permittee shall monitor and remove DNAPL from Piezometers P-9, P-11, P-13 and well MW-13 as necessary to remove the accumulated DANPL, and not less than monthly." This correction also corresponds to the requirements as described on page 19 of the Statement of Basis.

Response: DSWM agrees. Piezometer P-13 and well MW-13 were added to Paragraph IV.A for monitoring and recovery of DNAPL. Recovery of DNAPL was removed from Paragraph IV.B.

- 4. Comment:** Draft Permit, Attachment 9.6 Corrective Action Remedies, Section IV. DNAPL Measurement and Recovery, Item B. on page 9.6-3: Item B should be deleted so as to correspond to Table 2. DNAPL monitoring and recovery is not proposed for monitoring well MW-32 and groundwater recovery well RW-1 because there has been no measurable DNAPL found in either of those two wells in over 9 years of monitoring.

Response: DSWM agrees. Change made as noted in Response to Comment 3.

5. **Comment:** Draft Permit, Attachment 9.6 Corrective Action Remedies, Section IV. DNAPL Measurement and Recovery, Items C. and D. on page 9.6-3: The Draft Permit presents very specific methods for measuring DNAPL thickness (i.e. weighted string) and handling the collected DNAPL (i.e., use of graduated 4-gallon bucket and transfer to 55-gallon drum). Velsicol notes that Subparagraph I.D.9(a) Monitoring and Records on page I-6 provides flexibility in that methods prescribed in Field Branches Quality System and Technical Procedures or equivalent methods approved by the Commissioner may also be used.

Response: If a particular procedure is described in the permit, the permittee shall use the monitoring method as detailed in the permit. The DSWM can accept this change through the modification process or in the permit renewal application.

6. **Comment:** Draft Permit, Section V. Media Monitoring, Item A. on page 9.6-3: Per the proposed permit language and reference to Table 1, Velsicol is required to maintain seven monitoring wells that are located on the Tennessee Products Site (i.e., MW3-17, MW6-14, MW7-SH, MW3-IN, MW3-112, MW6-73 and MW7-IN), which we understand is owned by the City of Chattanooga. In addition, Item B of the same section requires Velsicol to perform semi-annual water level monitoring on those seven wells as specified in Table 2. Velsicol intends to continue monitoring those seven wells. However, since those seven wells are not owned by Velsicol the following sentence should be added to Items A and B: “This requirement applies to the seven wells located on the Tennessee Products Site to the extent that the property and well owner provides for Velsicol’s access to do so”.

Response: DSWM agrees. Change made.

7. **Comment:** Draft Permit, Attachment 10. Soil Cover Construction, Schedule on page 10-4: It is stated in the first sentence that “Remedial construction shall begin as soon as the plan (understood to mean the Remediation Construction Plan) is approved by DSWM”. Velsicol understands the terms “Remedial construction” to include preparation work such as completion of engineering plans and specifications and a competitive bidding and contractor selection process.

Response: DSWM agrees. No change necessary.

8. **Comment:** Draft Permit Modification, Attachment 11, Sampling and Analysis Procedures (SAP) on page 11-1: The Draft Permit requires that Velsicol perform the certain noted corrective action activities in accordance with Velsicol’s February 10, 2010 SAP. Velsicol notes that Subparagraph I.D.9(a) Monitoring and Records on page I-6 provides flexibility in that methods prescribed in Field Branches Quality System and Technical Procedures and methods prescribed in Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, SW-846 or equivalent methods approved by the Commissioner may also be used.

Response: If a particular procedure is described in the permit, the permittee shall use the monitoring method as detailed in the permit. The DSWM can accept this change through the modification process or in the permit renewal application.

- 9. Comment:** Draft Permit Modification, Attachment 2. Security, II. Property Use on page 2-1: The 3rd sentence states “At such time the Commissioner deems appropriate or necessary for the adequate protection of human health and the environment, deed restrictions will be applied” This indicates that deed restrictions must be implemented when the Commissioner deems them necessary. The foregoing does not clearly match with the first paragraph of page 21 of the Statement of Basis, which states that Velsicol will record a “Notice of Land Use Restrictions” with the Hamilton County Register of Deeds as a supporting element of the Final Remedy. Please clarify DSWM’s intent with regard to Permit requirements as to if and when Velsicol will be required to record the land use restrictions. The implementation of deed restrictions was proposed in Velsicol’s application for the Permit Modification.

Response: The permittee shall follow the language in the Draft Permit. Since the engineering work plan will not be submitted until after the modification is processed, the specific details for the deed restrictions may not be well-defined.

- 10. Comment:** The Attachment 11, Sampling and Analysis Procedures (SAP) document, which was included with the hard copy of the Draft Permit that DSWM provided to Velsicol in early December, is for Velsicol’s Memphis Facility rather than for the Chattanooga Facility. The two SAPs are the same with respect to laboratory testing methods that are relevant to the future monitoring requirements. However, the Memphis SAP should be replaced in the Permit by the Chattanooga SAP. It is noted that the correct SAP was available for community access in the document repository that Velsicol established at the Bethlehem Community Center and updated in early December 2010. The correct version of the SAP was also further distributed by a website that was established by community members.

Response: DSWM agrees. Change made.

CHANGES MADE BY DSWM TO DRAFT PERMIT MODIFICATION

The DSWM has increased site inspection frequency from quarterly to monthly and raised the minimum soil cover from 18 to 24 inches over the SWMUs that require implementation of a final remedy.

Every place in the permit modification that describes the soil barrier to be installed as an 18-inch soil layer has been changed to 24-inch. Specifically, the change was made:

1. In the second sentence of the second paragraph on Page 9.6-1 of Attachment 9.6, Corrective Action Remedies.
2. In the text for cross-sections on Figures 3 and 4, Conceptual Design Typical Details, at the end of Attachment 9.6, Corrective Action Remedies.
3. In Section II of Attachment 10, Soil Cover Construction, the first sentence of paragraph A is now the second sentence. The first sentence of paragraph C is now the first sentence of paragraph A, and the remainder of Paragraph C has been removed. The 18-inch has been changed to 24-inch. Language was also added for clarification. Added changes to paragraph A are shown below in bold italics.

The soil material will be suitable for establishing and maintaining vegetation. A minimum 24-inch thick soil cover will be installed over all solid waste management units (SWMUs) that require implementation of a selected final remedy, except as follows. The thickness may be reduced in limited areas where the land to be covered abuts site boundaries and/or certain site features such that the final surface grade must be transitioned to match adjacent land surface elevations. Examples of such transition areas include the north side of SWMU 70, the north side of SWMU 93, and the west side of SMWU 82.

Every place in the permit modification that notes a quarterly inspection requirement for the SWMUs and AOCs that require implementation of a corrective action remedy (soil cover) has been changed to a monthly requirement. Specifically, the change was made:

1. In the first and last sentence of the only paragraph on Page 3-1 of Attachment 3, Inspections. The next to the last sentence concerning well inspections has been modified by adding “but this inspection activity will only be required to be performed on a quarterly basis.”
2. On page 9.6-2, in the first sentence of paragraph E, and both sentences in Paragraph F in Section II of Attachment 9.6, Corrective Action Remedies.
3. In the title block on Figure 5, Monthly Inspection Log, at the end of Attachment 9.6, Corrective Action Remedies.

In the last sentence of Attachment 2, Security, on page 2-2, the reference to paragraph IV.D.11 has been changed to I.D.11.