



PADUCAH GASEOUS DIFFUSION PLANT CITIZENS ADVISORY BOARD

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Paducah Gaseous Diffusion Plant Citizens Advisory Board Meeting Minutes September 21, 2006

The Citizens Advisory Board (CAB) met at the CAB office in Paducah, Kentucky, September 21, 2006, at 6 p.m.

Board members present: Allen Burnett, Bobby Lee, Linda Long, Janet Miller, John Russell, Jim Smart, Rhonda Smith and James Tidwell

Board members absent: John Anderson, Judy Clayton, Shirley Lanier, and Elton Priddy

Ex Officio members and related regulatory agency employees present: Bill Clark, Jon Maybriar, and Tony Hatton, Kentucky Division of Waste Management; Tim Kreher, Kentucky Department of Fish and Wildlife Resources; David Williams and Debbie Vaughn-Wright, Environmental Protection Agency; Steve Hampson and John Volpe, Radiation Health Branch

Deputy Designated Federal Official: Reinhard Knerr

Portsmouth/Paducah Chief Operating Officer: Rachel Blumenfeld

DOE Federal Coordinator present: David Dollins

DOE-related employees present: David Ashburn, Rich Bonczek, Jeannie Brandstetter, Tracey Brindley, Yvette Cantrell, Paul Corpstein, Kim Crenshaw, Bruce Gardner, Stephen Gohn, Guy Griswold, Mitch Hicks, Steve Kay, Matt La Barge, Steve Manning, Doug Moore, John Morgan, Lindell Ormsbee, Bruce Phillips, John Razor, and Scott Smith

Eight members of the public attended the meeting.

Agenda

Kay asked for modifications to the agenda. Smith said a Land Acquisition Study presentation would be added before the task force update. **The Board adopted the agenda as modified by consensus.**

Minutes

Kay asked for modifications to the draft August minutes. **The Board approved the minutes as submitted by consensus.**

Deputy Designated Federal Official *Attachment 1*

Blumenfeld said board members have raised concerns about responsiveness and continuity of DOE representation at the meetings. In order to give the Board a local contact and consistent DOE participation, Bill Murphie, Portsmouth/Paducah Project Manager, has designated Knerr, Paducah Site Lead, as the new Deputy Designated Federal Official (DDFO), to the CAB. She said she and Murphie will continue to attend meetings and provide support to the CAB.

Knerr provided the project updates to the Board. Questions and answers (paraphrased) appear below.

Questions/Comments	Answers
Smart: Was the C-405 Incinerator used to treat radioactive waste?	Knerr: It was used to burn radioactive media and materials.
Russell: \$2 million was spent for boreholes on the C-400 project to refine where the technology will be located for remediation. How sensitive is the technology to location, plus or minus three feet or 100 feet, in order to be equally effective? How far would the technology have been moved if the additional boreholes had not been done?	Razor: It is expensive to employ this technology and is active over a small area. The electrodes have to be in the right location to induce a current so that the right zone is heated. PRS is interested in the zones that have the highest concentration and that is where the TCE is not dissolved in the liquid called dense nonaqueous-phase liquid. The data is important and not only \$2 million is being spent on the design but tens of millions to get the whole area treated. If the area that is out there was treated before the additional boreholes were done, a much larger area would be treated.
Russell: One of the criticisms from Congress is the amount of money spent to generate information but it takes forever to get around to doing cleanup. I don't believe that technology will be moved very far from where it would have been if the 51 boreholes had not been done.	Razor: The electrodes are spaced so that the distance between them is 20 feet. If you are 20 feet away from where the electrodes should be, the wrong area is being treated.

<p>Russell: This area gets about 48 inches of rainfall a year and in Kentucky we get about 30 inches of evapo-transpiration. In the sedimentation basin there is no transpiration so there is 20 inches of evaporation. That leaves 28 inches of water that has to go somewhere, per acre that is half a million to a million gallons a day. I don't know what the flow is out of that basin, but it is only a 5 million gallon capacity. I am concerned that only intermittent discharges are conducted. Is that basin lined? If a material balance analysis was conducted, is there enough flow?</p>	<p>Brindley: It is lined. Flow into the basin is generally during rainfall. It is monitored every day. In August the basin was not discharged because it did not rise more than a foot with the limited rainfall. In September, there was heavy rain and heavy rain is expected for this weekend, so the basin was discharged last week and this week to keep the level in the basin low enough so that it doesn't overflow and has time to settle prior to discharge. Two pumps are used for discharging, taking about two days to pump out two million gallons.</p> <p>Razor: The purpose of the basin was for the scrap metal project to catch and detain water for a period of time to allow the soil to settle. It is not made to contain water, it is a detention basin for a period of time.</p>
<p>Miller: Has the sediment been cleaned out of the basin yet? If not, when is PRS expected to do that?</p>	<p>Razor: We have not had the need to do that so far; the northwest scrap metal project is coming to an end. We hope there will be grass growing on that area within the next few weeks and that will greatly reduce the soil load going to that area.</p>
<p>Miller: Is the level of sediment monitored that is going in the basin?</p>	<p>Razor: Yes, to ensure there is enough storage capacity.</p>
<p>Miller: How deep is the sediment in the basin? Are there plans for the sediment in the basin?</p>	<p>Razor: I don't know how deep the sediment is. There are no plans to remove the sediment at this point.</p>
<p>Miller: Please bring the sediment level to the October meeting.</p>	
<p>Russell: Are there are streams into that basin other than the runoff from the scrap metal area?</p>	<p>Razor: It takes the northwest quadrant of the site.</p>
<p>Russell: Is leachate from the C-746-U Landfill placed there? I just want to be clear that no effluent is going to the sedimentation basin other than runoff from the scrap metal area. How many acres is that?</p>	<p>Razor: No. The landfill is in another location. The basin just takes runoff from the northwest quadrant of the site.</p> <p>Volpe: Less than a couple hundred acres. We can get those maps.</p>
<p>Burnett: Are there quantifiable goals or qualitative goals on what to expect on the C-400 project?</p>	<p>Blumenfeld: There is not a specific action level for TCE removal that DOE is trying to achieve. The system will run as long as it is cost-effectively removing TCE; until it reaches a point of diminishing returns, and it will then be turned off.</p>

<p>Burnett: KDWM and the EPA found reasonable cause to believe that free liquids might have been disposed of in the U-Landfill. DOE is due to give a response to the letter by October 11. I hope that would be addressed in the comments at the October meeting.</p>	<p>Knerr: DOE did receive a letter and is evaluating the information that was provided.</p>
<p>Burnett: Grading and seeding will be done in the scrap yards and then the area will be turned over to the Burial Grounds Operable Unit. There is some suspicion that material is buried under the surface. What are the plans for that? Grass will hold it for the time being but what are the long-term plans?</p>	<p>Knerr: That area is being evaluated through the Remedial Investigation Feasibility Study Work Plan, which will involve borings and evaluating analytical data resulting from the borings to see if there are contaminants associated with those landfills. In conjunction with EPA and Kentucky, DOE will go through the CERCLA process on how to move forward with remedial activities.</p>
<p>Lee: As the new DDFO, can Knerr tell us his background and relationship with DOE?</p>	<p>Knerr: I have spent a lot of time at various DOE sites starting my career at Pantex working in the nuclear safety field, specifically, criticality safety. From there I went to Portsmouth, Ohio, working as a subcontractor in DOE operations and had an opportunity to get familiar with the gaseous diffusion process. I was a consultant in criticality safety at Y-12. I was able to secure a DOE position at the Waste Isolation Pilot Plant site in Carlsbad, New Mexico and was responsible for the waste certification team and compliance. I spent a year at headquarters working with Jesse Roberson looking at ways to reduce risk and eliminating barriers with waste disposal activities across the DOE complex. I have been at the Paducah site for two years. I was brought in as D&D Manager, to be responsible for C-410, waste management activities, on- and off-site transportation activities and the scrap metal project. I was selected for the Site Lead position about two months ago.</p> <p>Blumenfeld: DOE conducted a national search for the (site lead) position at Paducah and we are confident that Reinhard will do an excellent job; he is well respected throughout the complex.</p>

Federal Coordinator Comments

Dollins said re: the C-400 Record of Decision (ROD) signed in August 2005 and the question of whether the RD/SI was necessary, he believes it was worth it to spend \$2 million to narrow focus on the area to be treated to ensure the success of a \$38 million project.

Dollins said Long was honored for her 10 years of service to the Board at the chairs meeting in September. Long was presented a award by Asst. Secretary Rispoli and Doug Frost, Designated Federal Official for all the boards in the complex. Long said she was surprised by the award and thanked all of the members of the Board.

Ex-Officio Comments

Maybriar said the state sent a non-concurrence letter (dated Sept. 21) stating that they were not in agreement with everything in the Southwest Plume report but will work with DOE to resolve the issues. The comments can be shared with the CAB.

Maybriar said comments on the 2006 Site Management Plan (SMP) will be issued to DOE the week of Sept. 25. Kentucky will approve the SMP but is not in agreement with all it contains. Some of the comments have recently been resolved and they will begin working on the 2007 SMP soon. The 2006 SMP will be approved and expectations will be embedded into the 2007 SMP.

Maybriar said the state hopes to approve the BGOU Work Plan within the next two weeks. There is one outstanding issue and discussions with DOE are addressing the concerns.

Maybriar said discharge sampling for the storm water runoff at the C-613 lagoon has been discussed. The C-613 is the storm water basin for the scrap metal project. When DOE discharges, they let the state know and the sample is split. Additionally, a sample is taken at Outfall 001 and at the Northwest Pump and Treat to calculate what contamination is contributed from that facility. Kentucky also samples downstream after a discharge from the 001 ditch has sufficiently mixed with Big Bayou Creek water. Samples are also taken a quarter mile downstream. Sampling downstream and at the Pump and Treat began six to seven months ago and data is just now being received. Maybriar said he will share the results with the CAB in October.

Maybriar said the Agreement in Principle group did a sampling event in the Ohio River that has not been done before. At the confluence of Bayou Creek and the Ohio River there is a delta that can be seen this time of year when the water level drops. Ten sediment samples were taken to see what has historically been released from the facility and deposited in the Ohio River in that area. Those results should be back in a couple of months.

Maybriar said Kentucky got a letter from Tennessee Valley Authority (TVA) approving additional signage for TVA property along Bayou Creek. Kentucky has sent a letter to DOE to establish a path forward. Burnett asked if additional signs were adequate protection for minors. Maybriar said Volpe reminded KDWM to work with his agency to get approval for

the signs. Maybriar said the signs are not a final action, just a minor one to notify the public that insufficient data exists to verify if there is a problem.

Russell said the CAB got a copy of a letter from Hatton, KDWM Asst. Director, to DOE placing the U-Landfill in a groundwater assessment. Hatton said all of the solid waste landfills in Kentucky are required to have groundwater monitoring systems installed up-gradient and down-gradient of the landfill to determine if there have been any releases from the landfill. There are two criteria in the regulations to determine if a release has occurred; if a constituent in the groundwater is found that exceeds the maximum contaminant level, and if a constituent continues to show up in a down-gradient well but not in an up-gradient well. Under solid waste regulations, if monitoring does indicate a release, the landfill goes into groundwater assessment. The purpose of groundwater assessment is to assess the nature and extent of the contamination and the depth it has reached in the aquifer. The characterization will determine if it came from the landfill and if corrective actions are needed to address releases. On August 29, 2006, KDWM submitted a letter to PRS and DOE putting the C-746-U Landfill into groundwater assessment for several constituents including TCE and polychlorinated biphenyls (PCBs), one metal, and three or four indicator parameters. A couple of rad metals were also found. These constituents were not detected in all of the wells. Russell asked if the groundwater assessment included the S&T Landfills, since they were operated at a time when the regulations for their design and operation were substantially different from today and they are upstream of the monitoring wells that are showing constituents. Hatton said the U-Landfill is a currently operating and permitted contained landfill and any potential releases to the groundwater are being addressed in accordance with the solid waste permit. The agency is addressing any releases from the S&T Landfill and the underlying Solid Waste Management Units (SWMUs) under the Federal Facilities Agreement (FFA). The solid waste requirements have very stringent timeframes and at that time KDWM knew that there were several groundwater issues of concern and it didn't make sense to spend all the resources addressing contaminated groundwater beneath the S&T Landfills when there were more pressing issues. If a groundwater investigation is being done around the U-Landfill it can be taken into account that other potential sources around it might be the actual source of the contamination in the U monitoring network. It is DOE's job to investigate and report to Kentucky their findings on where the contamination is coming from and where it is going. Russell asked if the U monitoring network included the monitoring wells that are upstream of the U-Landfill in the vicinity of S&T Landfills and penetrating through the S&T Landfills. Hatton said he did not believe there are any up-gradient wells for the U-Landfill that penetrate through the S&T Landfills but the up-gradient wells for the U-Landfill are almost directly down-gradient of the S&T Landfills. Russell asked if those wells are showing elevated levels of those contaminants that are in excess of the mcls. Hatton said there is at least one well up-gradient of the U-Landfill that has TCE in it and three down-gradient wells that have TCE in them as well. Russell asked about pcbs. Hatton said pcbs were detected in MW 361, 363, and 365 at the U-Landfill which are all down-gradient. He said he did not have the data detected in the S&T Landfills but it does not appear that pcbs were detected in the up-gradient wells in the U monitoring network.

Williams said he has been stressing the importance of environmental indicators and the requirement that the EPA was put under by Congress in 1996 under the Government

Performance Results Act. He applauded Kentucky, especially Maybriar, for working with TVA, DOE and private landholders to get this accomplished.

Williams said EPA is in line with Kentucky on the 2006 SMP. EPA requires all National Priority List sites to have enforceable milestones in place and that is a key point in the discussions with DOE. EPA will approve the 2006 SMP and enter into negotiations with DOE on the 2007 SMP. He said there is significant progress on being able to pull in the dissolve phase plume under its own category in the Groundwater Operable Unit (GWOU). Because of the recent findings of the pcbs in the groundwater around the S, T, and U-Landfills, EPA has been in discussion with Kentucky and DOE for placing an addendum in the BGOU so that document can be approved and schedules can be met to get the contractors in the field.

Williams said he has just received comments on the Southwest Plume from the Las Vegas and Oklahoma labs which are the top groundwater labs in the country. He said he would review the comments and submit a letter to DOE the week of Sept. 25.

Williams suggested that his presentation on the Redevelopment Blueprint for Cecil Field could be postponed until October due to time constraints. One of the primary missions of EPA is to focus on revitalization and reuse as sites are cleaned up. The Board agreed to postpone the presentation.

Lee said in August there were discussions on whether changes in the SMP were minor or major modifications. Williams said that is more of an issue with DOE on the Community Relations Plan (CRP). The issues began with the 2004 SMP and enforceable milestones that were put in place then. There were sufficient revisions and discussions on whether that would be a major or minor modification. He said he was unsure if that was ever resolved but it led into the discussion of the degree of public input on a major modification. EPA, Kentucky and DOE are still negotiating that. Blumenfeld said when discussing the SMP, there was question whether every major modification would be subject to a public participation requirement before it could become final. She said there is no question whether a major modification in the provisions of the FFA would require public participation. Lee asked why DOE would not want public participation. In the FFA, there are specific procedures and processes for changes and documents processed in an orderly fashion so the work can keep going. Blumenfeld said public participation is an underpinning to CERCLA and is very important and required for certain things under Resource Conservation Recovery Act (RCRA) such as closure plans and permits. DOE absolutely supports and values public participation and wants to make sure that an absolute policy does not translate into the CRP in a way that it ends up impeding efficiency and effectiveness. In no way does DOE want to convey that they want to stop public participation, review and comment. Lee asked if Blumenfeld could address the issue next month when there is more time. Blumenfeld asked Lee to work with Knerr and Dollins on what she is clearly asking so that DOE can truly be responsive.

Volpe said he is providing the Radiation Health Branch (RHB) with technical assistance. He said he routinely meets with Dewey Crawford, RHB Manager, and is helping with samples in the lab that have been backlogged. Soon, data gathered in 2004 and 2005 will be available

and will answer some of the CAB's questions in regard to sampling at Outfall 001. There is continuous sampling done at Outfall 001 and the state provides an enormous database for those surface waters. That data is used to make decisions regarding radiation doses and impacts the facilities on surface water. He said he does not like to use grab samples because they are not sufficient. Smith asked if anything is being done for human health information for the public. Volpe said he tries to incorporate information into the reports including air monitoring data, surface water monitoring and groundwater monitoring. Smith said the CAB may request some of the old reports. Hampson said the reports are available electronically.

Public Comments

Vander Boegh thanked the Board for allowing Dr. Cook to make his comments at the August meeting. He said he believed members understand the doctor's value to the community and said Cook is considering joining the Board.

Vander Boegh asked what company is operating the landfill. Knerr said PRS is. Vander Boegh asked for whom Matt LaBarge works. Razor said LaBarge works for Energy Solutions. Vander Boegh asked if Duratek was still operating the landfill. LaBarge said Duratek changed their name from Duratek to Energy Solutions. Razor clarified that Energy Solution purchased Duratek in June. He said the union employees at the landfill are direct employees of PRS. Vander Boegh asked how the boxes and the drums at the landfill are inspected for free liquids. Corpstein said the waste arrives at the landfill and if it is covered, it is not uncovered on the scale, it is not visibly seen until it goes to the work base and the container is dumped into the work base.

Vander Boegh asked what kind of design facility is the C-613 basin. Dollins said it is a 10-year design facility. Vander Boegh asked what happens if there is a 100-year storm event as in July. Razor said the duration of the scrap metal project is a fairly short period of time so the design of the basin is based upon a storm event that occurred with a 10-year return interval. If a 100-year rain event occurs it overtops the system and it is designed to handle the overtopping but that happens once in 100 years. Vander Boegh said there was an overflow in July because a 100-year rain event occurred. A 100-year rain event can happen every two or three weeks. He asked if the basin was designed appropriately to hold and detain the contaminants to settle out. Blumenfeld said reasonable design and parameters must be selected for a short life like the sediment basin. Ten years was identified to be appropriate because it was a limited duration activity and any of the design specifications that were selected were reviewed and approved by the regulators. She said no one is disputing the point that if a 100-year rain event occurs it will overtop a 10-year design basin. She said to speak to the possible implication that there is something deficient about the sedimentation basin, the answer is the basin was reasonably designed given the nature and duration of the project, and the design criteria was approved by the regulators. Vander Boegh asked if Blumenfeld is acknowledging that the basin overflows and it is not holding the water on every event. Blumenfeld said she is acknowledging that *could* happen based on the information that Razor provided. Vander Boegh said the point is to express that water was bypassing that pond entering a ditch and exiting past the Outfall 001. Blumenfeld said she was merely acknowledging the fact that if a rain event exceeds a 10-year rain event then the sediment

basin would overflow. DOE has monitored any discharge that comes out of Outfall 001 and it is shared with the regulators. Vander Boegh said he is asking how many millions of gallons are going out that contain a contaminant for one of the sampling events to calculate 20 pounds of uranium. Maybriar suggested a site drawing to show that when the basin overflows, it is engineered to do so and does not bypass Outfall 001. It discharges up-gradient of Outfall 001 then flows through Outfall 001, at which point Kentucky takes a sample. If the water is overflowing the basin may not have had time for the suspended particles to settle out. Kentucky is curious about that as well and will go out and sample at Outfall 001 and down-gradient of Little Bayou Creek. Blumenfeld said DOE will provide that graphic at the next meeting. Knerr said this summer there was a seep and DOE communicated with Kentucky on the level of the water in the sedimentation basin and that there was a potential for overflow and made sure Kentucky was present when there was a potential for overflow and did split sample. The results of the sampling are consistent with the ability to discharge water out of the sedimentation basin so the total suspended solids that did seep over were not different from what is discharged from the sedimentation basin. Vander Boegh asked if a suspended solids test was done as the basin was overflowing. Brindley said yes. Maybriar said at one time a sample did exceed the limits but nothing was discharged, Flocculent was applied and it worked quickly. Vander Boegh asked if the application of Flocculent constituted PRS applying "treatment" to the sedimentation pond. Knerr said Flocculent was applied as permitted in the Operations and Maintenance Plan and communicated with Kentucky. Blumenfeld said Flocculent was applied to precipitate the sediment, not as treatment.

Vander Boegh asked if off-site dump site maps provided by DOE to the public in 2000 had been located. He requested them at the August Board meeting. Knerr said there are no off-site dumps and the maps that Vander Boegh is referring to in the early 2000 timeframe were provided to the public and the CAB discussed any potential indications of miscellaneous contaminations at the site. Vander Boegh said the maps to which Knerr is referring are the maps that Don Seaborg, former Site Manager, signed on October 18, 2001 and those are not the same maps. Kay asked Vander Boegh to put his specific request in writing. Blumenfeld said DOE is trying to be responsive but is unaware of the maps and DOE can gain a clearer understanding of what Vander Boegh is looking for if the request is spelled out in writing.

Jurka asked when the Depleted Uranium Conversion Facility will be online. Knerr said construction would be completed and equipment installed in late Summer 2007. When the facility is completed, DOE will bring in experts from across the complex to complete an operation readiness review, which takes three to four months. Blumenfeld said DOE could provide the schedule for that review. Jurka asked if there was a contract in place for the operation of the facility. Uranium Disposition Services (UDS) is currently set to design, build and operate under a five-year term on the contract from the time of completed structure to the end of the five-year period, with potential for the contract to be extended or re-bid. Jurka asked if the potential exists for UDS to not begin operations and whether it could be re-bid and reassigned to another entity, either during the first five years or once construction is completed. Blumenfeld said she would check the contract and get a specific answer.

Johnson said Razor said there was a short time frame for the design of the sedimentation pond for the scrap metal project. He asked what the design time was for the project and will the project be completed in that time frame. Razor said the original contract duration was two years and it is now four years into the project. There were difficulties in sorting and segregating the materials. Most recently, a different kind of packaging has been utilized to allow large quantities to be shipped, which has accelerated the project. Johnson asked if the design of the sedimentation pond took into consideration going from two years to four years. Razor said the design is for a 10-year return interval storm and if you get an 11-year interval storm, some amount will go over. Johnson asked if the figures are accurate if you go beyond the time frame. Razor said the basin's capacity will remain what the basin's capacity is as long as it doesn't fill up with sediment. The 10-year return interval storm will still be captured.

Johnson asked what percentage of DOE's budget is allocated for meetings such as the CAB meetings. Blumenfeld said DOE could calculate the figure and provide it at the October meeting. Johnson said that would be a good indicator as to the importance DOE places on public opinion. Blumenfeld said CAB meetings are not the only measure, citing DOE's opportunities for public participation which are provided during conduction of all clean-up projects. Johnson asked for a total number including those items, and Blumenfeld said that would be impossible to quantify because of the production of documents, publication of documents, publication notices are not line items. Those are captured in with project costs.

Kay said the Board has long tried to include the public in its activities by inviting members of the public to make comments and ask questions at meetings. The intention is to address brief comments and questions either immediately or as an action item for future response. For several months the public comment portion of the meeting has far surpassed the time allotted to the activity, pushing the Board's agenda to the wayside. Smith presented a draft of suggested guidelines for public input. (*Attachment 2*). She said the guidelines would be discussed and voted on at the retreat in November. Smith said the Board wants public input and is not trying to shut the public out because good information comes from the public.

Smith said the newspapers have featured articles on a proposed spent nuclear fuel recycling program. After inquiring about the issue at the Chairs Meeting she was told that issue was not within the Board's purview and could not be discussed during the meetings.

Task Forces/Presentations

Land Acquisition Study Update *Attachment 3*

Ormsbee provided a presentation on the Land Acquisition Study to the Board. Questions and answers (paraphrased) appear below.

Questions/Comments	Answers
<p>Russell: Was the statement “Remove 95% of TCE found in soil down to 45 feet below surface” a target taken from an existing document?</p>	<p>Ormsbee: Those numbers came from the D1 Groundwater Operable Unit Feasibility Study that looked at possible technologies and the potential remediation percent reduction that could be achieved with those different technologies.</p>
<p>Russell: It was asked earlier if there were goals or targets for the C-400 project and it was said that the technology would be used until an isotope is hit and quit. This doesn’t suggest that.</p>	<p>Blumenfeld: What Ormsbee is talking about is a FS document KRCEE was directed to in their statement of work to identify potential remedial options. The C-400 ROD identifies an asymptotic condition as how to operate.</p>
<p>Russell: Then this option was abandoned.</p>	<p>Blumenfeld: I wouldn’t say abandoned. That is specifically what happened for the C-400 ROD.</p>
<p>Burnett: Were any sensitivity studies done on treatment efficiencies or are all the values taken from the documents?</p>	<p>Ormsbee: Only the efficiencies in the documents were used.</p>
<p>Lee: Explain the ranges on the remediation costs on why there is such a large variation.</p>	<p>Ormsbee: That is related to the type of technology used in the D1 documents. Some of the D2 documents did not spell out the prescribed technologies.</p>
<p>Williams: The implemented cost of property versus remediation would need to include the sufficient rewriting of all of the environmental laws that we are currently operating under.</p>	<p>Ormsbee: That assumes that the remediation option that is looked at is not meeting the associated CERCLA requirements. The one looked at is hitting targets of reducing TCE at the property boundary within 10 years and the property fence within 15 years. If a remediation strategy was implemented right now that meets targets at the boundary and fence line in a short time frame, there is still material out there beyond the fence that will dissipate over time.</p>
<p>Williams: Current environmental laws would only regard property acquisition as a land use control which would be an additive cost to those remediation costs, not in lieu of.</p>	<p>Ormsbee: Correct.</p>
<p>Smith: Do you know when the public presentation will be scheduled?</p>	<p>Ormsbee: Not at this time. Blumenfeld: Early or mid-winter, depending on the internal review. It is a preliminary document.</p>

Burnett: At what point will the CAB see the actual document?	Blumenfeld: When we get the final draft but before the report is finalized, after internal DOE process including headquarters, that draft will be available to the CAB. We have made the commitment to make the document available to the public and include comments in the appendix with the final report that actually goes to Congress. I am not sure of the timeframe.
Burnett: The CAB would like to review the document and incorporate comments before public review.	Blumenfeld: I will take the request under advisement and give the CAB an answer next month.
Smart: The point that Williams made should be clear in the report; it seems the thought process is just to buy the land and forget remediation.	Ormsbee: We are well aware of that.

Waste Disposition/Water Quality Task Force

Lee said Hatton, KDWM informed the task force on the letter sent to DOE addressing the groundwater assessment on the C-746-U-Landfill.

Smart said the comment period for the Kentucky Pollutant Discharge Elimination System (KPDES) permit will end on Sept.28. He said he would forward his comments to Lee and she could send the comments to the rest of the task force for comments. He said the CAB or DOE might ask for an extension on the comment response period. It has taken three years to get the permit updated and 30 days may not be enough time for substantive review. Smart said it would be helpful if the permit listed the modifications and additions from previous permits. Blumenfeld said she was told that there is a regulatory provision that allows someone to request an extension. Maybriar said to contact the Division of Water in case they would need to reschedule the hearing. Smart asked Brandstetter to contact Larry Sowder.

Lee said the task force was presented some maps for discussion and Tracy Brindley, PRS, was available at the task force to navigate the Geographic Information System (GIS) system. DOE has promised that Brindley will be available at future task force meetings. Members with questions or suggestions were asked to forward them to Lee so she can compile a list of requests for Brindley.

Lee said the task force has discussed a recommendation to DOE requesting assurance that the Waste Acceptance Criteria is being met for the U-Landfill and that there is sufficient oversight from the regulators and DOE. That recommendation is still being discussed.

Smith said while they were at the Chairs Meeting, they participated in a groundwater workshop and good ideas and technologies were discussed. Steve Achery, EPA was at the Paducah site about a month ago and Charles Coyoe from Oklahoma will soon be on site to conduct a groundwater study. Dollins said Larry Bailey asked him at the Chairs meeting if he

was aware that someone was coming to the site conducting a groundwater program and he said he was not. Smith thanked Steve Gohn, Office of Science and Technology, for attending the CAB meeting.

Action Items

Lee said the formal statement to DOE on landfill concerns is pending.

Lee said Tony Hatton answered all the questions that the task force asked regarding the leachate treatment facility so that action could be closed.

Dollins said the information that Jurka requested on what contaminants other than TCE and technetium-99 (Tc⁹⁹) might be in residential wells was mailed to her after the August Board meeting and the accompanying acronym list was faxed to her the week of Sept. 18.

Dollins said Tracey Brindley, PRS, was available for this task force meeting and will be available for future meetings to present GIS information to the task force. Kay said the action is closed.

Smith said Vander Boegh presented her a request for the off-site dump maps if they exist and she will pass the request to Knerr and Blumenfeld. She asked Vander Boegh to provide a follow-up e-mail for additional information. Burnett said he believed Jurka has what Vander Boegh is looking for. Russell said Vander Boegh believes there may be radioactive waste that came from the PGDP that is not being talked about. That is the Board's interest.

Administrative Issues

Review of Workplan and October Agenda

Smith asked that the Land Acquisition Study presentation be deleted and William's presentation be added to the October agenda.

Budget Review

Smith said according to Bill Murphie, the \$44,000 discrepancy in the CAB's budget was set aside for contractor work for the CAB. Knerr will find out if the money can be carried over to the Fiscal Year 2007 budget or if it is a loss. DOE did provide the Board with \$9,000 for chairs meeting travel, member recruitment and publishing the Annual Report. Within the next couple of months, the Executive Committee will be consulting with EHI and DOE for input on the budget. Burnett asked if the CAB's budget for FY 2007 has been finalized. Blumenfeld said it is in continuing resolution. Smith said tentatively the amount is \$315,000. Burnett asked if \$25,000 would be included in the bottom line for PRS. Smith said the Executive Committee will work with PRS on what will be provided and at what cost if any. Burnett said Knerr agreed to check to see if CAB support is in PRS's contract or if it needs to be added to the CAB's budget. Blumenfeld said there are certain activities that would fall to PRS in their contract and Knerr would clarify that. Burnett said the Chairs Meeting that

Paducah will be hosting in Fall 2007 would need to be factored in. Most sites have sponsors to help pay for the reception and meals. Long volunteered to help with the Chairs Meeting.

Subcommittee Report

Executive Committee

Smith asked if she was on the right track with the proposed guidelines for public comments. Lee said she believed Smith is on the right track but there is a fine balance to encourage public comment and a two-minute time limit may be severe. Miller agreed. Smart said he believed the time limit is harsh and the Board is overreacting. Smith said this is just a start and the guidelines should be reviewed at the retreat. Lee said recording the question as an action item is a good idea. Smith said the guidelines would be handed over to the Community Outreach task force for discussion at the retreat. Lee said according to the agenda, everyone went over the time limit. She asked Knerr if the DDFO presentation could be done in 15 minutes. The updates are repetitive and she would like a short update from the previous month. Knerr said yes. Blumenfeld said in the past the CAB has been interested in the running totals and history of the projects. Kay said if the Board wishes for him to reign in on time, he will do that. Lee said yes. Russell said the Board should not want to miss out on valuable information because of the time limit on the agenda. Kay suggested discussing the agenda at the retreat.

Smith said she had asked Burnett to chair the Community Outreach task force and he had agreed. Ruby English has sent an e-mail with guidelines to DOE public input and asked that the task force review that information. Burnett said it would be November before he could get started on the task force. Smith said Community Outreach needs help if new members or members that are not on a task force are interested.

Chairs Meeting Review

Smith said Paducah's top three issues for the Chairs Meeting was communication from DOE, DOE support and the CAB's budget. (*Attachment 4*) Since the Chairs Meeting, the Executive Committee has met with Murphie, Inez Triay, Blumenfeld, Knerr and others. DOE has responded very positively. Blumenfeld said they are very committed to working with the CAB.

Russell said he is troubled by the fact that the CAB received a copy of a letter from KDWM regarding the C-746-U Landfill groundwater assessment. The letter did not come as a shock to DOE, but was to the CAB. Repeatedly, there are things that the Board hears about in the newspaper; DOE is failing to communicate. Every month DOE should come to the Board meeting and present the issues that the CAB will be contending with. Blumenfeld said to keep talking to them and let them understand the problems. Russell suggested that DOE begin to share regulators comments with the CAB to help them better understand the issues and know what questions to ask.

Lee said with a shorter DDFO presentation, DOE should include points that DOE is having difficulty with that the CAB can possibly help with. The CAB needs to know the challenges to be active participants. Kay suggested that the Board compile specific suggestions from the last presentations and information received in other ways and look into how the Board could have gotten that information. Blumenfeld said to send the suggestions to Knerr and Dollins so they can understand how to respond. Burnett asked Dollins specific questions about the contractor in the August Executive Committee meeting and Dollins said he couldn't talk about it but five days later there's a story in the newspaper. The CAB is getting information from everyone except DOE.

Blumenfeld said there are instances where things are going on internally that aren't right for release but a leak might contact a reporter or come to a task force and make an allegation. DOE will try to be responsive but there are times when they cannot release information. Smith said that is understandable but if a letter goes out on August 19 and the CAB asks a question on August 25 and it's in the paper on September 1, DOE had time to tell the CAB. Dollins said some things go out that he doesn't even know until he reads it in the newspaper. He said he is not a public information officer. Blumenfeld said she hears the message loud and clear and recognizes the frustration and will keep working to try to make it better.

Smith said a recommendation drafted to Rispoli at the chairs meeting is in the packet and asked that members be prepared to vote on the letter at the October Board meeting. Burnett asked Brandstetter to place presentations from the Chairs meeting on the CAB's Web site. Brandstetter said the presentations should be on the national Web site. Russell volunteered to attend the Chairs Meeting next Spring in Las Vegas.

Election of Chair-Elect

Smith nominated Burnett for Chair-Elect. There were no other nominations and Burnett was elected Chair-Elect by acclamation.

Retreat

Smith said problems have arisen with a location for the Annual Planning Retreat for the tentative date set for November 3 and 4. Lee suggested checking Murray for a location. Smith said final preparation for the retreat will be handled via e-mail.

The meeting adjourned at 10:10 p.m.

Progress at the Paducah Project



DOE Portsmouth/Paducah Project Office

Update to the Paducah Citizens Advisory Board

August 17, 2006



C-402 Limehouse Demolition



Inactive Facilities D&D



- 402 Limehouse demolition completed
 - Rubble removal to be completed by August 18
- Completed sampling activities in C-405 Incinerator
 - Work instructions being written; waiting for approval of RAWP for work to start
- Sampling in C-746-A West End Smelter scheduled to start by week of August 21



DOE Material Storage Areas



DMSA materials are loaded into a container for shipment

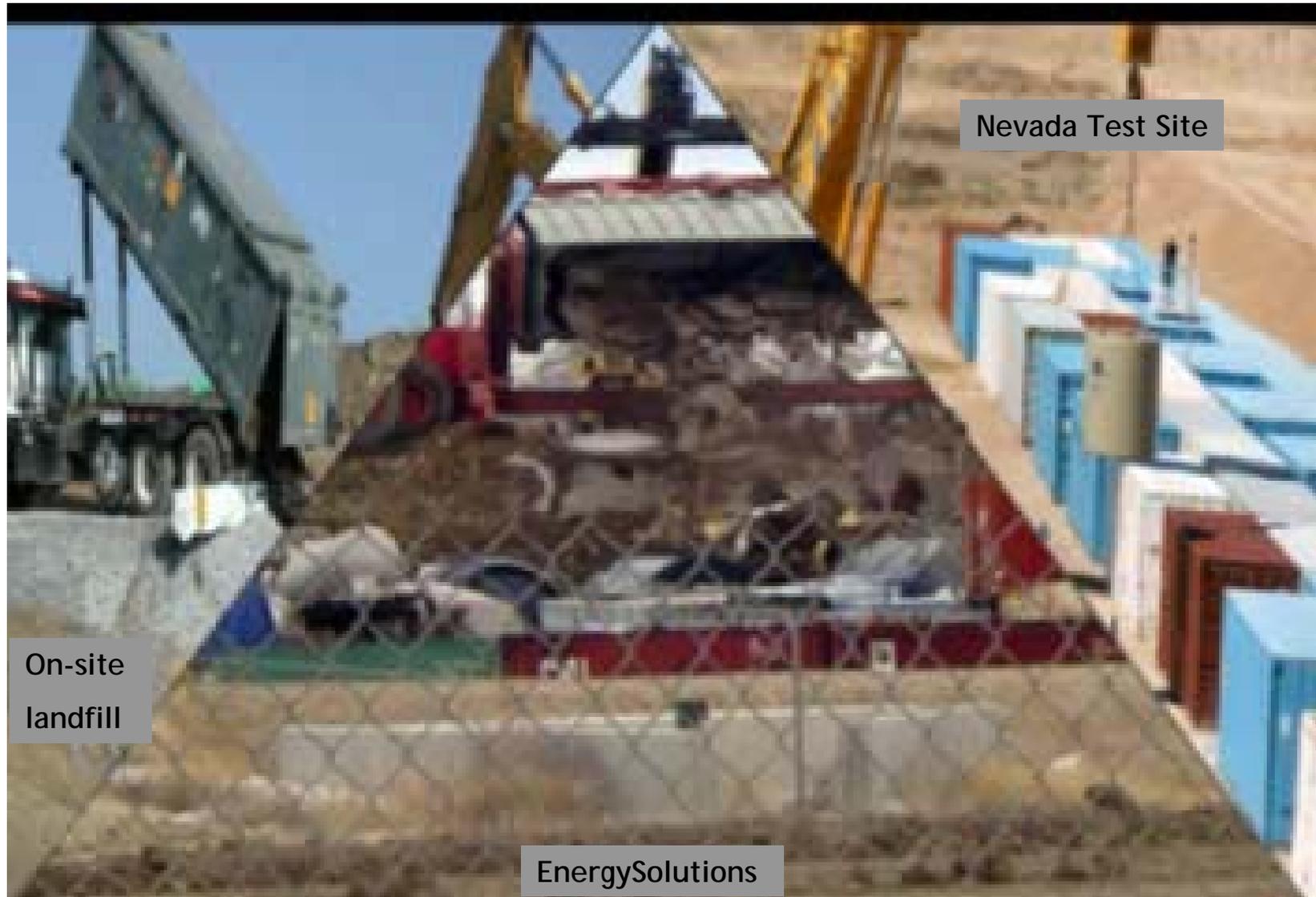
- On target to meet 9/30/06 milestone to complete characterization of "B" Priority DMSAs
 - 10 of 11 completed
- 73 of 160 original DMSAs now characterized



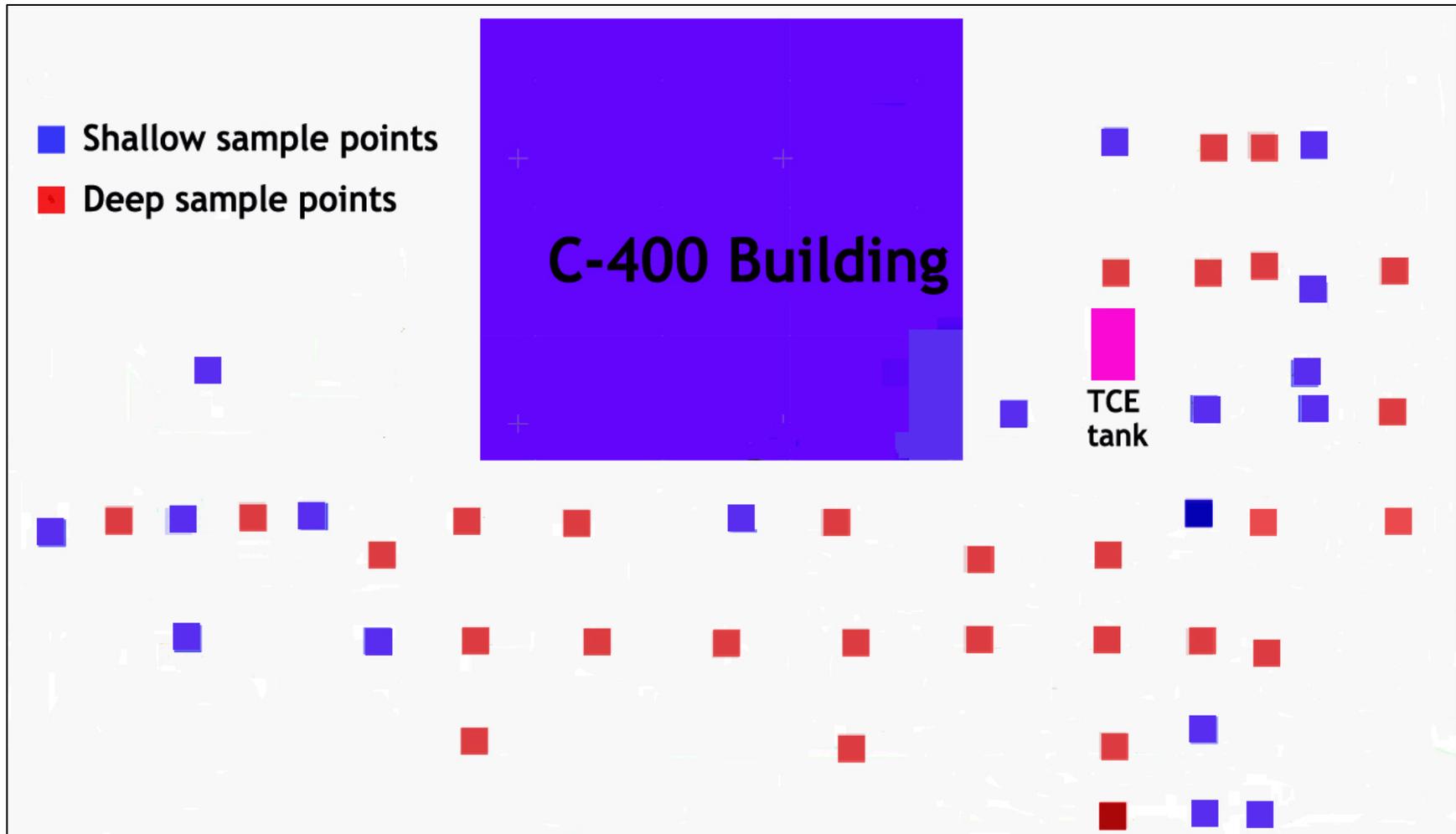
DMSA Characterization



DMSA Disposition



C-400 Interim Remedial Action



- Remedial Design Support Investigation sampling at 47 locations
 - 18 samples to 55 feet
 - 29 samples to 95-105 feet

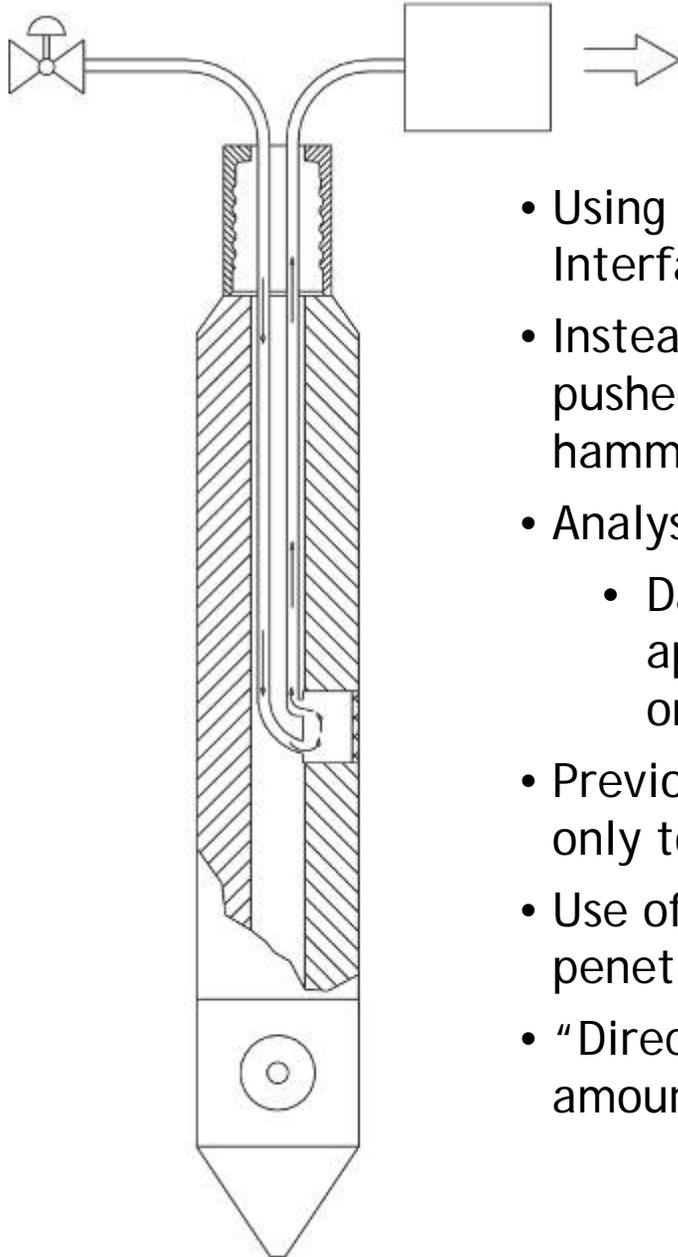
C-400 Interim Remedial Action



- Results will supplement data from earlier investigations
- Results will more precisely define TCE location and concentrations around the C-400 Building
- Final design of direct heating system will utilize investigation results
- Sampling completed by July 31 at 26 locations



C-400 Interim Remedial Action



- Using a device called a Membrane Interface Probe
- Instead of drilling, the probe is pushed to depth using a hydraulic hammer
- Analysis is performed every foot
 - Data provides information on approximate level of volatile organic compounds (TCE)
- Previously used at Paducah, but only to about 50 feet
- Use of a “pre-probe” allows for penetration from 50 to 100 feet
- “Direct push” technology reduces amount of waste



The Membrane Interface Probe

DUF6 Conversion Project



A panoramic view of the construction taken August 10

- Conversion Building concrete panels 40% complete with installation; projected completion by October 2006
- Warehouse building complete
- Continuing to finish interior of Administration Building; projected completion by October 2006
- Began construction of rail spur; projected completion by October 2006
- Bayou Creek rail bridge connected to site rail line

DUF6 Conversion Project



A concrete panel is lowered into place on August 10 in the Conversion Building

A worker drives spikes on the rail spur now under construction

Northwest Corner Scrap Metal Removal

- Project nearing completion
 - ~200 tons remain on the ground
 - Nearly 60 railcars loaded with more than 4,000 tons pending shipment
 - More than 23,000 tons shipped to date



Northwest Corner Scrap Metal Removal

Scrapyard Status – August 2006

Northwest scrapyards	A-Yard 100% finished 119 tons removed	E-Yard 100% finished 6,005 tons removed	C-Yard 100% finished 2,680 tons removed	
	P1-Yard 100% finished 1,928 tons removed	P-Yard 100% finished 2,216 tons removed	E1-Yard 99% finished 4,618 tons removed <u>~20 tons remaining</u>	C1-Yard 94% finished 2,642 tons removed <u>~180 tons remaining</u>
Classified Scrapyard (includes aluminum ingots)		D-Yard 100% finished 7,038 tons removed		



C-410/420 D&D

- Began removal of utility piping
- Completed bussbar removal (Zones 42 and 43 of Sector 2)
- Completed removal and shipment of 108 electrical switches to ToxCo for reuse
- Disposed of 20 intermodals of debris
- Packaged 19 intermodals with debris



Workers remove piping inside C-410

Legacy Waste Disposition



100-pound drums of asbestos waste are loaded into a container for shipment to Bear Creek for supercompacting prior to disposal.

- Continued disposal of ~30,500 ft³ of Low-Level waste stored outdoors
 - To date, ~20% disposed and another ~35% repackaged awaiting disposal
- In July, disposed of ~3,500 ft³ of wastes, including:
 - Mixed Low-Level to EnergySolutions
 - Mixed Low-Level to TSCA Incinerator
 - Legacy waste materials to C-746-U Landfill and EnergySolutions



C-746-U Landfill Leachate Treatment System

- For solids treatment, there are two parallel filter trains each with two filters in series
- For Volatile Organic Compound, leachate is filtered through two 55-gallon canisters each containing 180 pounds of granular activated carbon
 - Filters operate in series or parallel mode
- Incidental building and system solid waste disposed in C-746-U Landfill
- Filters will be sampled and analyzed prior to disposal



The leachate treatment system is shown above; at right, the building housing the system



Environmental Projects

Groundwater Operable Unit

- D2 Southwest Plume Site Investigation Report under regulatory review
- Discussions on the use of degradation factors used in groundwater modeling continue between DOE, Kentucky and EPA
- Completing D1 Proposed Remedial Action Plan for the Southwest Groundwater Plume Sources; scheduled for submission on 9/14/06

Surface Water Operable Unit

- Requesting milestone extension for submission of the Site Investigation/Risk Assessment to Kentucky and EPA

Burial Grounds Operable Unit

- The D2 Remedial Investigation/Feasibility Study Work Plan is scheduled for submission to Kentucky and EPA by August 29
 - Fieldwork scheduled to begin in October 2006





DOE Portsmouth/Paducah Project Office

Project Status Update for DOE Paducah Citizens Advisory Board
September 14, 2006
Project: Groundwater Operable Unit

Contact Persons:

Paducah Remediation Services LLC: Joe Tarantino/Mike Clark/Bryan Clayton

DOE Site Office: David Dollins

Commonwealth of Kentucky: Jon Maybriar/Todd Mullins

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: Jim Smart

Purpose: Environmental Cleanup

Description: This project addresses environmental remediation of groundwater contamination on a site-wide basis at the Paducah Gaseous Diffusion Plant. The main contaminants of concern are trichloroethylene (TCE) and technetium-99 (⁹⁹Tc). Remedial actions will be designed and implemented after completion and signing of Records of Decision (RODs).

Key documents:

- Feasibility Study of the Groundwater Operable Unit at PGDP (DOE/OR/07-1857)
- Agreed Order DWM-31434-042
- Six-Phase Treatability Report (DOE/OR/07-2113)
- Proposed Remedial Action Plan for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2114)
- Southwest Plume Site Investigation Work Plan (DOE/OR/07-2094)
- S&T Landfill Site Investigation Work Plan (DOE/OR/07-2098)
- Record of Decision for Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2150&D2/R2)
- Remedial Design Work Plan for the Interim Remedial Action for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2214&D2)
- Remedial Design Support Investigation Characterization Plan for the Interim Remedial Action for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2211&D2)
- Site Investigation Report for the Southwest Groundwater Plume (DOE/OR/07-2180&D2)
- Site Investigation Report for the C-746-S&T Landfills (DOE/OR/07-2212&D2)
- Land Use Control Implementation Plan: Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Contamination at the C-400 Cleaning Building (DOE/OR/07-2151&D1)

Issues: Discussions with the State of Kentucky and EPA are continuing concerning the use of degradation factors utilized in groundwater modeling to support risk assessment development. The D2 SW Plume Site Investigation Report is currently being reviewed for approval.

Recent accomplishments:

- C-400 Remedial Design Support Investigation subsurface profiling was completed on August 25, 2006. The subsurface investigation was performed at 51 locations on the south side of C-400. Results of this investigation will be used during the design of the treatment system to be installed in that area.

Activity over next 60 days:

- Continue with development of the C-400 Remedial Action Work Plan and Design Report
- Complete the development of the D1 Proposed Remedial Action Plan for the Southwest Groundwater Plume Sources.

FFA Milestones:

- D1 Southwest Plume Proposed Remedial Action Plan by 10/14/06 (Milestone being modified pending resolution of the degradation factor use in groundwater models)
- D1 C-400 Remedial Action Work Plan by 11/22/06
- 90% C-400 Remedial Design Report by 12/8/06

Project Status Update for DOE Paducah Citizens Advisory Board
September 14, 2006
Project: Burial Grounds Operable Unit

Contact Persons:

Paducah Remediation Services LLC: Joe Tarantino/Kendall Holt

DOE Site Office: Jeff Snook

Commonwealth of Kentucky: Jon Maybriar

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

Purpose: Environmental Cleanup

Description: A Remedial Investigation/Feasibility Study (RI/FS) Scoping Document and the RI/FS Work Plan for the investigation of the Burial Ground Operable Unit (BGOU) at PGDP have been developed. The documents utilize a compilation of sampling information collected on and around the PGDP over the course of the last ten years. The BGOU includes Solid Waste Management Units (SWMUs) 2, 3, 4, 5, 6, 7, 30, and 145.

Key documents:

- Scoping Document for the Burial Grounds Operable Unit Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky
- Work Plan for the Burial Grounds Operable Unit Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/OR/07-2179

Issues: None

Recent accomplishments:

- BGOU D2 RI/FS Work Plan was completed and distributed to the Commonwealth of Kentucky and the EPA on December 19, 2005
- Comments from the Commonwealth of Kentucky were received via letter dated June 20, 2006
- D2 R1 RI/FS Work Plan incorporating Kentucky and EPA comments was resubmitted on August 28, 2006

Activity over next 60 days:

- Receive approval of the RI/FS Work Plan
- Mobilize and begin remedial investigation field activities

Project Status Update for DOE Paducah Citizens Advisory Board
September 14, 2006
Project: DOE Material Storage Areas (DMSAs)

Contact Persons:

Paducah Remediation Services LLC: John Samples
DOE Site Office: Reinhard Knerr
Commonwealth of Kentucky: Jon Maybriar/Leo Williamson
U.S. Environmental Protection Agency: David Williams
Citizens Advisory Board: John Russell

Purpose: Environmental Cleanup/Waste Disposition

Description: The 160 DMSAs are non-leased areas inside buildings, as well as outdoor areas. DOE accepted the return of the areas, and the material and equipment they contained from USEC on December 31, 1996, to facilitate NRC certification of the gaseous diffusion plants. At that time, most of the contents needed detailed inventory, characterization, and disposition. Since that time, DOE and contractors have been documenting contents, resolving environmental concerns such as draining and disposing of oils from old equipment, and segregating and disposing of wastes.

Key documents:

- PGDP Department of Energy Material Storage Area Characterization/Remediation Plan (BJC/PAD-186/R4), April 2001
- Agreed Order DWM-31434-042
- Documented Safety Analysis (DSA)

Issues:

- Increased rigor in characterizing painted items for PCB content has impacted characterization, packaging, and disposal activities. Effort is under way to resolve different requirements and allowances between Kentucky and EPA regulations.

Recent accomplishments/activities:

- In August:
 - Characterized 3,345 ft³ of material characterized (including sampling)
 - Packaged 11,136 ft³ of material
 - Disposed of 5,109 ft³ of material

Activity over next 60 days:

- Complete characterization of "Priority B" DMSAs under the Agreed Order
- Initiate final RCRA closure certification for approximately 20 DMSAs
- Transition to rail shipment to disposal sites

**Project Status Update for DOE Paducah Citizens Advisory Board
September 14, 2006**

Project: Decontamination & Decommissioning (D&D)

Contact Persons:

Paducah Remediation Services LLC: Don Ulrich/Brad Montgomery

DOE Site Office: Reinhard Knerr

Commonwealth of Kentucky: Jon Maybriar

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

Purpose: Environmental Cleanup/Waste Disposition

Description: The D&D project has completed development of Comprehensive Environmental Response, Compensation, and Liability Act regulatory documentation and has initiated actual D&D of the C-410/420 Feed Plant Complex. The current scope of D&D includes infrastructure removal on the C-410/C-420 complex, as well as ongoing surveillance and maintenance of the C-410/C-420 complex and the C-340 Metals Plant complex. Scope also included development of Safety Basis Documentation for the removal of equipment, piping, and stored material from the C-410 Complex. Operations at both complexes ended in 1977.

The Engineering Evaluation and Cost Analysis and the Action Memorandum for three inactive Facilities, the C402 Limehouse, the C-405 Contaminated Items Incinerator, and the C-746-A West End Smelter, have been completed and approved. The Removal Action Work Plan for the C-402 Limehouse has been approved by the regulatory agencies, and the C-405 and C-746-A West End Smelter RAWP was submitted to the regulatory agencies for review and approval.

Key documents (C-410 and Inactive Facilities):

- Engineering Evaluation/Cost Analysis (EE/CA)
- Action Memorandum
- Removal Action Work Plan (RAWP)
- Cultural Resources Assessment of C-410 Complex
- Agreed Order DWM-31434-042

Issues:

None

Recent accomplishments/activities:

- Initiated activities to isolate utilities at C-405
- Completed sampling activities in C-405 to support waste characterization
- At C-410, packaged 10,800 cubic feet (16 Intermodals and one SeaLands) in August. Since May, 2006, approximately 70,000 cubic feet of material have been removed, size reduced, and packaged. The packaged volume of the waste material is approximately 38,000 cubic feet.
- Initiated asbestos abatement in Zone 53 of the C-410 Complex, and initiated utility piping and equipment demolition in Zones 40, 44, and 38
- Continued emptying, sorting, and segregating of material stored in SeaLands located outside the C-410 Complex

Activity over next 60 days:

- Continue packaging of loose materials in C-410 Complex
- Continue fixative application to exterior painted metal surfaces of the building
- Package demolition debris for shipment to EnergySolutions of Utah
- Perform sampling for waste characterization of C-746-A West End Smelter
- Develop work instructions for C-405 incinerator work
- Ship buss work and switches to ToxCo for reuse
- Continue asbestos abatement activities in Sector 2 and 3 of C-410
- Continue removal of piping and equipment in C-410, Sector 2 and 3
- Begin removal and treatment of chemicals remaining in piping or equipment to convert them to an inert state) in C-410 Complex

Project Status Update for DOE Paducah Citizens Advisory Board
September 14, 2006
Project: Scrap Metal Removal Project

Contact Persons:

Paducah Remediation Services LLC: Chris Marshall

DOE Site Office: Reinhard Knerr

Commonwealth of Kentucky: Jon Maybriar

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: Jim Smart/John Russell

Purpose: Environmental Cleanup/Waste Disposition

Description: About 31,000 tons of scrap metal exists at the PGDP, excluding nickel ingots. This project involves the removal of 21,700 tons of general scrap metal, 2,000 tons of aluminum ingots, and approximately 7,412 tons of classified scrap. The project does not include the recycling or disposal of 9,700 tons of nickel.

Key documents:

- Engineering Evaluation and Cost Analysis
- Action Memorandum
- Removal Action Work Plans
- Documented Safety Analysis (DSA)

Issues: None

Recent accomplishments:

- On June 23, 2006, 3,231 tons of scrap metal were shipped via rail to EnergySolutions
- Since January 1, 2006, 10,140 tons of scrap metal have been shipped via rail to EnergySolutions
- The final unit train carrying scrap metal in high sided gondola cars is loaded and scheduled to ship in October 2006; another shipment on regular cars will follow

Activity over next 60 days:

- Complete disposition operations by inspecting, sorting, size-reducing and packaging scrap metal
- Begin demobilization activities under the EnergySolutions contract, including grading and seeding

Project Status Update for DOE Paducah Citizens Advisory Board
September 14, 2006
Project: Surface Water Operable Unit (On-Site)

Contact Persons:

Paducah Remediation Services LLC: Joe Tarantino/Kendall Holt/Jana White

DOE Site Office: David Dollins

Commonwealth of Kentucky: Jon Maybriar/Brian Baker

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: Jim Smart

Purpose: Environmental Cleanup

Description: The Surface Water Operable Unit (On-Site) Project includes a site investigation to identify hot spots in ditches inside the security fence and outfalls, including Sections 3, 4, and 5 of the North-South Diversion Ditch. The site investigation scope also includes an evaluation of whether additional sediment control measures are needed, as well as actions for potential legacy releases associated with the storm sewer system. The results of the site investigation will be documented in a Site Investigation/Baseline Risk Assessment Report as appropriate.

Key documents:

- Sampling and Analysis Plan for Site Investigation and Risk Assessment of the Surface Water Operable Unit (On-Site), DOE/OR/07-2137&D2/R2
- Surface Water Operable Unit (On-site) Site Investigation and Baseline Risk Assessment Report at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-0001/D0

Issues: None

Recent accomplishments:

- Issuance of the D0 R1 SWOU SI/RA report to DOE for technical review
- Incorporation of comments and preparation of the D1 SWOU SI/RA report for DOE legal review
- Issuance of milestone extension request for provision of the D1 SWOU SI/RA report

Activity over next 60 days:

- Incorporate D1 comments and prepare final D2 SWOU SI/RA
- Issue the D2 SWOU SI/RA report to EPA and Kentucky

FFA Milestones:

- Issue Site Investigation/Risk Assessment Report by October 15, 2006
- Issue Removal Notification by December 11, 2006

Project Status Update for DOE Paducah Citizens Advisory Board
September 14, 2006
Project: Solid Waste Contained Landfill

Contact Persons:

Paducah Remediation Services LLC: Matt LaBarge

DOE Site Office: Jeff Snook

Commonwealth of Kentucky: Todd Hendricks

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

Purpose: Waste Disposition

Description: The operating landfill and support facilities are located on 60-acres of DOE property near Ogden Landing Road, operating under a permit from the Kentucky Division of Waste Management (KDWM). U-Landfill disposal operations began in 1997. DOE uses the landfill for disposal of solid waste generated from its operations at the Paducah site. Examples of wastes accepted include non-hazardous soil and debris from environmental cleanup and other DOE projects, protective clothing worn by workers, paper, packaging, and landfill office wastes.

Key documents:

- Environmental Assessment for the Construction, Operation and Closure of the Solid Waste Landfill at the Paducah Gaseous Diffusion Plant (DOE/EA-1046)
- Environmental Assessment on the Implementation of the Authorized Limits Process for Waste Acceptance at the C-746-U Landfill (DOE/EA-1414)
- Waste Acceptance Criteria for the Department of Energy Treatment, Storage, and Disposal Units at the Paducah Gaseous Diffusion Plant (BJC/PAD-111R4)
- C-746-U Landfill Solid Waste Disposal Facility Permit Number 073-00045

Issues: Kentucky has sent DOE a letter saying there is the potential that liquids have been disposed of at the landfill. PRS is investigating these claims. Kentucky has requested a Plan of Correction for insufficient leachate storage capacity. PRS has determined there is sufficient capacity for current landfill operations and is working with Kentucky and DOE to determine alternatives for future operations.

Recent accomplishments/activities:

- The leachate treatment system passed an Internal Field Review and is ready for operations pending sampling analysis results
- In August, PRS initiated sampling of treated leachate in accordance with the Agreed Order between Kentucky Division of Waste Management and KRC
- In July, 282.18 tons of waste material were disposed in the landfill

Activity over next 60 days:

- Complete additional testing and training of personnel for operation of the leachate treatment system
- Complete evaluation of leachate management and submit permit modification to document Plan of Correction
- Continue disposal of construction debris and other non-hazardous solid waste streams

**Project Status Update for DOE Paducah Citizens Advisory Board
September 14, 2006
Project: Waste Disposition**

Contact Persons:

Paducah Remediation Services LLC: Matt LaBarge/Greg Shaia

DOE Site Office: Reinhard Knerr

Commonwealth of Kentucky: Jon Maybriar

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

Purpose: Waste Disposition

Description: DOE is responsible for disposal and/or recycling of legacy wastes (wastes generated at the PGDP prior to establishment of USEC on July 1, 1993); wastes generated from ongoing DOE projects; and a limited amount of waste generated by USEC. After characterization to assure selection of the appropriate disposition method, non-hazardous and non-radioactive wastes are disposed of in the DOE Solid Waste Contained Landfill. *(Please see landfill update sheet.)* Hazardous and radioactive wastes are treated if necessary and shipped off-site to approved DOE or commercial disposal facilities. Wastewater (collected from sumps in diked areas in DOE waste storage facilities at PGDP) is treated and discharged in accordance with the Kentucky Pollutant Discharge Elimination System permit.

Key documents:

- Paducah Waste Acceptance Criteria (BJC/PAD-11, Revision 4)
- Final Environmental Assessment for Proposed Disposition of Waste from the Paducah Site (DOE/EA-1339 and Addendum DOE/EA-1339-A) (FONSI)
- Agreed Order DWM-31434-042
- Site Treatment Plan (STP) DWM-30039-042

Issues:

- None

Recent accomplishments/activities:

- Shipped 1,800 cubic feet of mixed low-level waste to the TSCA Incinerator
- Disposed 1,276 cubic feet outside legacy waste in C-746-U Landfill
- Completed last two shipments of TSCA soft solids on site to TSCA Incinerator

Activity over next 60 days:

- Overpack outside legacy waste for future shipment to Energy *Solutions*
- Repackage low-level for disposal at Energy Solutions
- Dispose legacy waste stored in outside locations in C-746-U Landfill

Project Status Update for DOE Paducah Citizens Advisory Board
September 14, 2006
Project: Depleted Uranium Hexafluoride (DUF₆) Project Surveillance & Maintenance

Contact Persons:

DOE Site Office: John Sheppard
Uranium Disposition Services: Barry Tilden
Commonwealth of Kentucky:
U.S. Environmental Protection Agency:
Citizens Advisory Board:



Purpose: Maintain safe storage of DOE DUF₆ cylinder inventory pending disposition.

Description: The Atomic Energy Act, as amended, gives DOE responsibility for the DUF₆ inventory, which is a by-product from enriching uranium for nuclear fuel. At Paducah, approximately 36,700 cylinders contain approximately 442,790 metric tons of DUF₆. There are also 182 cylinders of low-enriched UF₆, about 900 cylinders of "normal" UF₆ (which has not gone through the enrichment process), and 276 empty cylinders. The DOE inventory at Paducah includes the material generated from 1952 until the establishment of USEC in July 1993, and material transferred from USEC to DOE since that time.

Surveillance and maintenance involves safely storing DUF₆. Most of the 60-acre DOE cylinder yard complex now consists of concrete yards, which provide for improved storage and inspection. In recent years, DOE cleaned and painted 3,368 cylinders that had surface corrosion. DOE continually monitors and inspects its cylinder inventory to assure safe storage.

Key Documents for surveillance/maintenance:

- Handling and Inspection of DOE 48-Inch Diameter UF₆ Cylinders at Paducah (UDS-PA-2400)
- Agreed Order DWM-31434-030
- Final Environmental Impact Statement for the Construction and Operation of the DUF₆ Conversion Facility at the Paducah Site (DOE/EIS-0359)
- Record of Decision for Construction and Operation of the DUF₆ Conversion Facility
- Documented Safety Analysis for the DOE Cylinder Yards, BJC/PAD-459
- Technical Safety Requirements for the DOE Cylinder Yards, UDS-C-TSR-001

Recent accomplishments/activities:

- An agreement with the Bonneville Power Administration (BPA) has been approved to transfer 672 cylinders of DUF₆ to BPA to supply power reactor fuel; 606 cylinders have been transferred through July 2006
- Transferring off-spec "normal" UF₆ cylinders to USEC to fulfill an agreement between USEC and DOE for USEC to remove Tc-99 contamination from the cylinders and provide DOE with "clean" UF₆ feed material

Activity over next 60 days for surveillance/maintenance:

- Continue transferring cylinders as per the two previously mentioned agreements
- Perform annual cylinder inventory
- Begin removing cylinders from C-745-C cylinder storage yard so all DOE UF₆ cylinder will be located near the conversion facility

**Project Status Update for DOE Paducah Citizens Advisory Board
September 21, 2006**

Project: Depleted Uranium Hexafluoride (DUF₆) Conversion Facility

Contact Persons:

DOE Site Office: John Sheppard

Uranium Disposition Services: Guy Griswold

Commonwealth of Kentucky:

U.S. Environmental Protection Agency:

Citizens Advisory Board:

Purpose: Design, build, and operate the DOE DUF₆ Conversion Facility.

Description: The Atomic Energy Act, as amended, gives DOE responsibility for the DUF₆ inventory, which is a by-product from enriching uranium for nuclear fuel. At Paducah, approximately 36,200 cylinders contain approximately 436,400 metric tons of DUF₆. DOE selected Uranium Disposition Services LLC to design, build, and operate facilities in Paducah and Portsmouth to convert DUF₆ to a more stable form for disposal or recycling.

The project site occupies approximately 11 acres immediately adjacent to DOE's DUF₆ cylinder storage yards. The completed capital costs for the facility at Paducah are estimated to be ≈ \$91,000,000. The major facilities on the DUF₆ project include the Conversion Building, Administration Building, Warehouse and Maintenance Building, KOH Regeneration Building, and the HF Neutralization Building. The project work also includes a railroad connection, rail sidings, load out facilities, roads, storage areas for full and empty cylinders, and all utilities.

Groundbreaking occurred in July 2004 and construction has continued since that time. At the conclusion of construction, all systems will be tested and the plant will undergo an Operational Readiness Review. The facility construction is to be complete in 2007. Following Readiness Reviews, facility operations are scheduled to commence in 2008.

Key Documents for the Conversion Project:

- Final Environmental Impact Statement for the Construction and Operation of the DUF₆ Conversion Facility at the Paducah Site (DOE/EIS-0359)
- Record of Decision for Construction and Operation of the DUF₆ Conversion Facility
- Paducah Conversion Facility Preliminary Documented Safety Analysis, DUF₆-C-G-PSA-001, Rev. 0

Recent accomplishments/activities:

- Conversion Building – 663 of 831 (80%) of pre-cast structural components erected and installed temporary construction bridge crane
- Warehouse Building – Work complete except for lightning protection. Punch list being cleared
- Administration Building – Installed windows, doors and trim. Continued to install HVAC duct, sheetrock, conduit, fire sprinklers and paint walls

- Construction on Bayou Creek Railroad – Installed switch in main line, placed sub-ballast, ballast, ties and over one mile of track. Installed derailer and grating at Bayou Creek Bridge
- BOP Foundations – Placed 980 cubic yards of concrete for empty cylinder storage area, 760 cubic yards concrete for full cylinder storage area pad and 720 cubic yards concrete for HF foundation. Placed concrete switchgear pad, 4 transformer pads and 820 cubic yards concrete for oxide crane foundation. Placed 500 cubic yards concrete for rail foundations North and South of HF load out, 500 cubic yards for KOH Building foundation, 100 cubic yards for Cooling Tower and Vehicle Access Building foundation. Placed 300 cubic yards for connection slab between full cylinder pad and Conversion Building, 30 cubic yards for the crane foundations on the oxide pad and full cylinder pad and 50 cubic yards for foundations for the pipe racks
- Installed temporary power connections to site to power buildings until permanent power available and raised power lines for rail access
- Mobilized S-44 Power to Facilities and commenced duct cleaning
- On-site fire system activated. USEC second Fire Water connection to UDS system in process

Construction activity scheduled over next 60 days:

- Complete Administration Building
- Complete rail spur to Hobbs Road
- Complete erection of Conversion Building panels and columns
- Caulk Conversion Building concrete panel joints, install enhanced connections and place concrete floor slabs
- Mobilize S-33 exterior steel subcontractor
- Continue pre-mobilization work on the HVAC Package S-42
- Continue pre-mobilization of Conversion Building Roof S-23
- Continue pre-mobilization of Piping/Mechanical Equipment package S-40
- Continue pre-mobilization of Electrical Distribution and Instrumentation S-43
- Turn Potable water on for DUF₆ Site
- Begin pre-mobilization of KOH Building S-31
- Accept delivery of conversion units and install

Procurement activity planned next 60 days:

- Award Fire Protection – S-41
- Bid Architectural Finishes – S-32
- Continue to Bid and Procure Major Equipment RFPs
- Bid project painting inside the Conversion Building S-38 and general facility painting S-37

Project Notes:

- Project schedule modified to reflect Conversion Building delay
- Schedule being developed to integrate electrical, HVAC and piping subcontractor work by area in Conversion Building
- Design and construction of remaining S-39 foundations awaiting selection of vendors for Nitrogen and Hydrogen systems

PGDP Property Acquisition Study

CAB Presentation
September 21, 2006

Presented by Lindell Ormsbee,
Director; Kentucky Research Consortium for Energy
and Environment (KRCEE)



Agenda

- **Project Goals**
- **Project Task Status**
 - **Potential Remedial Action Alternative Analysis**
 - **Groundwater Modeling**
 - **Property Acquisition Potential Options**
 - **Property Acquisition Potential Costs**
 - **Economic Analysis**
- **Future Activities**



Project Goals

- **The study is being conducted in accordance with a Congressional Directive to DOE in the 2006 Energy and Water Development Appropriations Act.**

“Within the funds provided the Department shall undertake a study of the potential purchase of property or options to purchase property that is located above the plume of contaminated groundwater near the facility site. The study shall evaluate the adequate protection of human health and environment from exposure to contaminated groundwater and consider whether such purchase, when taking into account the cost of remediation, long-term surveillance, and maintenance, is in the best interest of taxpayers.”

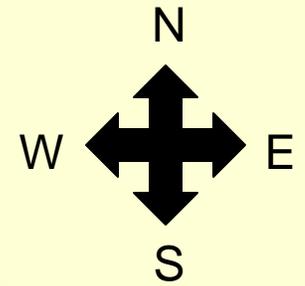
Energy and Water Development Appropriation Bill, 2006 (Senate Report 109-084)



TCE Plume - 2004

Legend

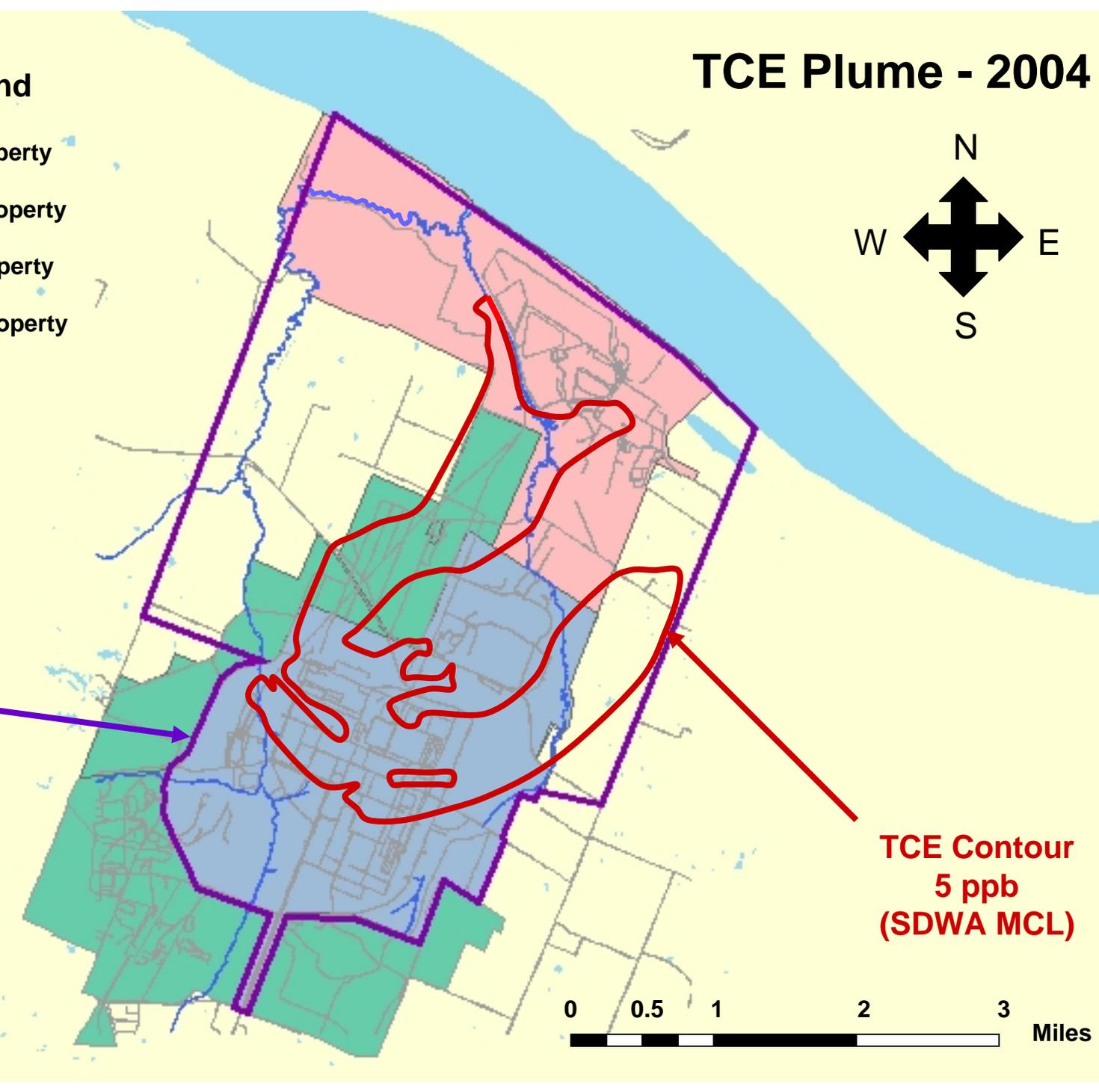
-  TVA Property
-  KWMA Property
-  DOE Property
-  Private Property



**Water
Policy
Boundary**



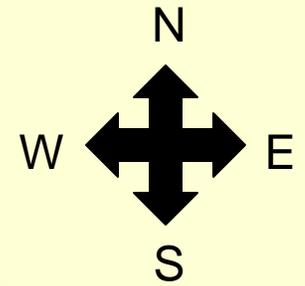
**TCE Contour
5 ppb
(SDWA MCL)**



Tc-99 Plume - 2004

Legend

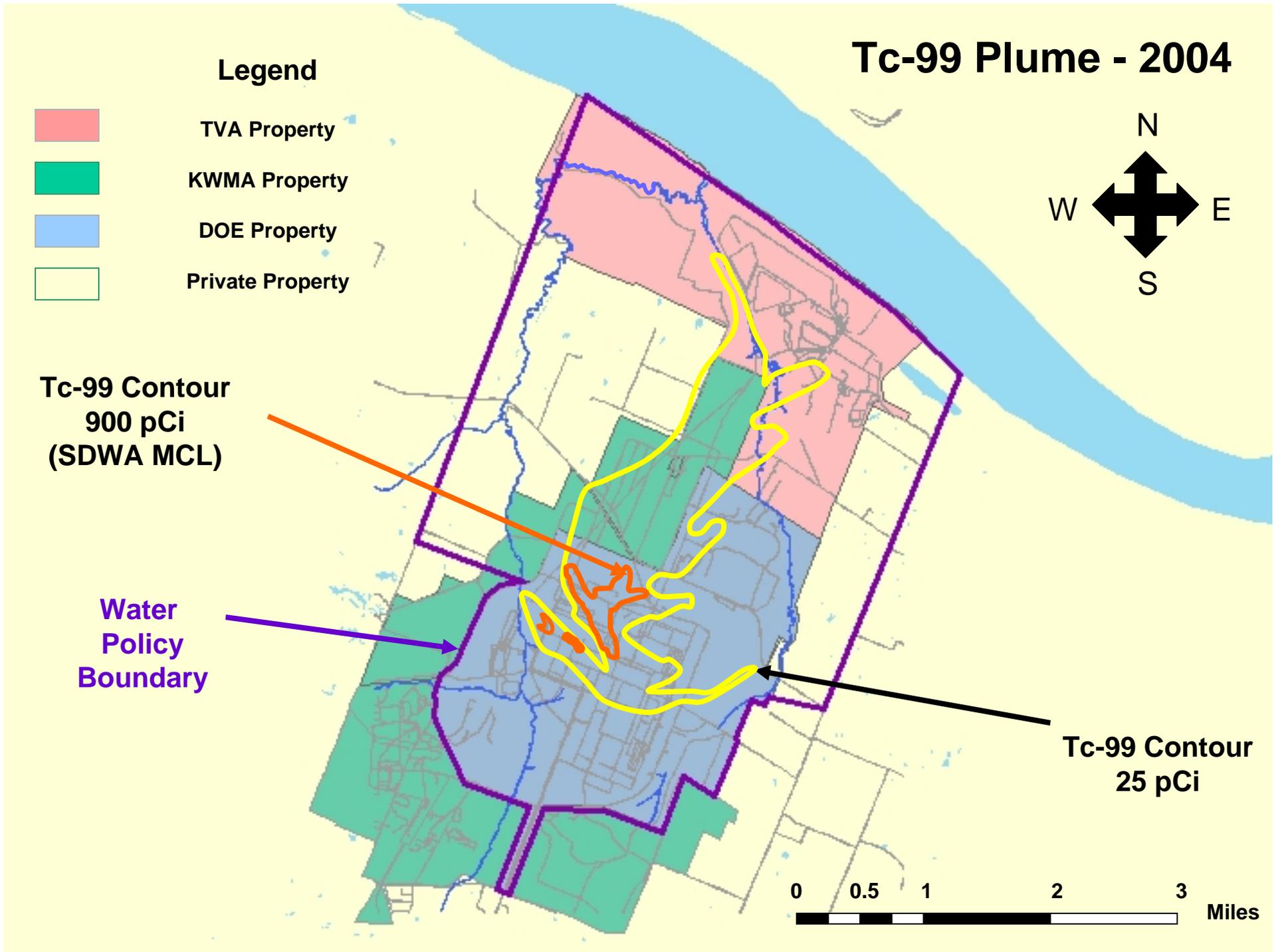
-  TVA Property
-  KWMA Property
-  DOE Property
-  Private Property



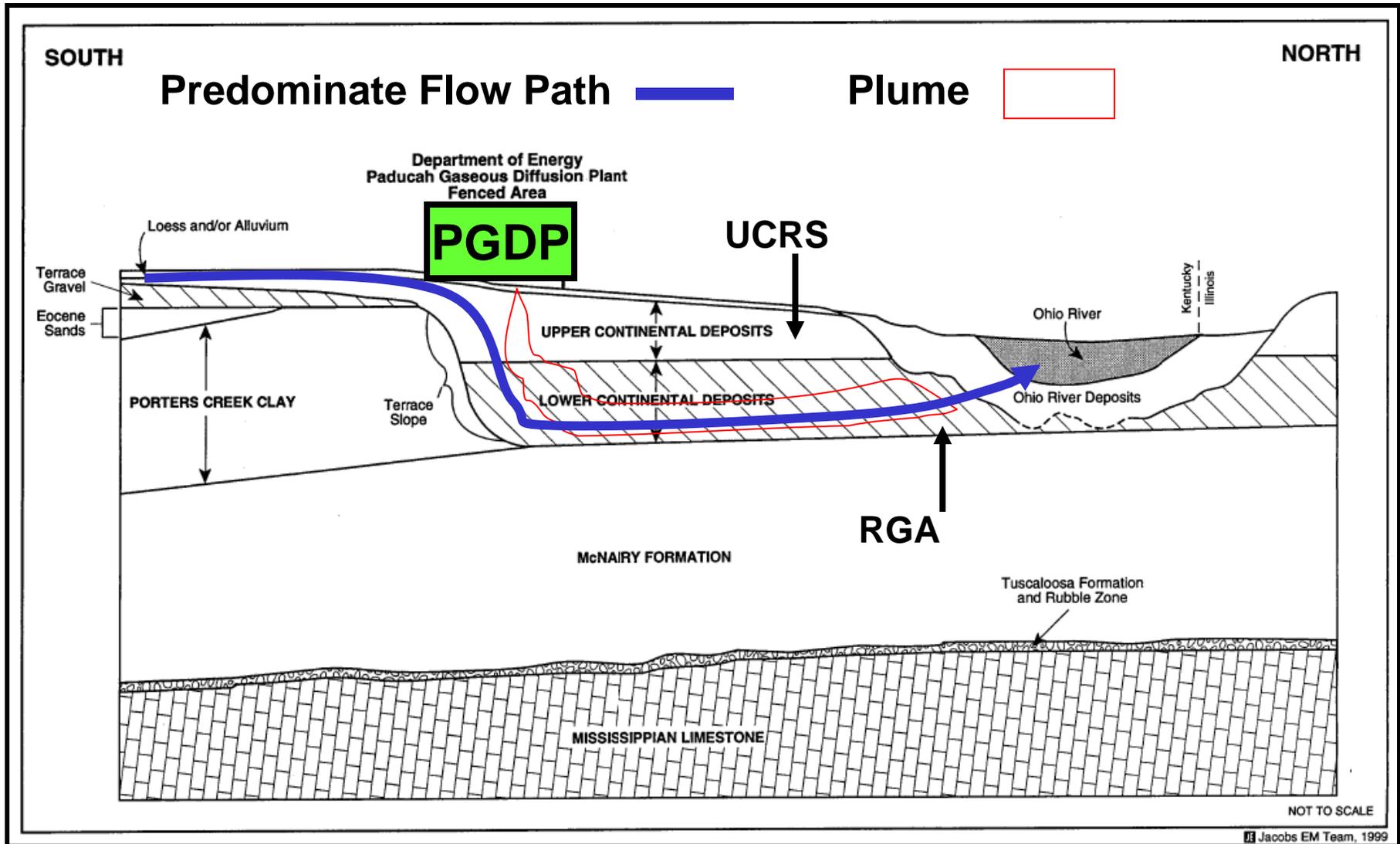
**Tc-99 Contour
900 pCi
(SDWA MCL)**

**Water
Policy
Boundary**

**Tc-99 Contour
25 pCi**



Conceptual Site Model



Sources of Groundwater Contamination

- **Primary source is a source in the UCRS**
- **Secondary source is a source in the RGA (DNAPL)**
- **TCE Source Areas**
 - C-400 Building area
 - SWMU 4 C-747 Burial Ground
 - SWMU 1 Former Oil Landfarm
 - C-720 Building area
- **⁹⁹Tc Source Area**
 - C-400 Building area



Potential Remedial Action Option Analysis

- **Based on remedial action options taken from the most recent groundwater feasibility study (FS)**
- **Options considered are:**
 - **No Action**
 - **Existing Pump and Treat**
 - Continuation of existing pump and treat systems
 - **Treat UCRS (Primary) Sources**
 - Remove 95% of TCE found in soil down to 45 ft below surface (UCRS)
 - **Treat RGA (Secondary) Sources**
 - Remove 99% of TCE found in high concentration areas (i.e., DNAPL) in the Regional Gravel Aquifer (RGA)
 - **Combination of Treating UCRS and RGA Sources and the Plumes**
 - Remove 95% TCE from UCRS and 99% from RGA DNAPL
 - Reduce TCE concentrations in the plumes (on and off DOE property)
- **Estimated costs of each remedial action option were developed using information from the FS**



Groundwater Modeling

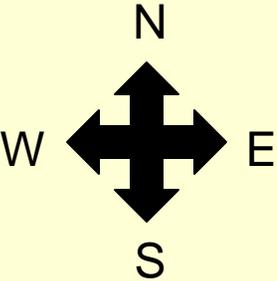
- **Each potential remedial action technology was evaluated using the current DOE Models**
- **Goals are to determine under each remedial alternative scenario:**
 - **Potential extent of plume migration**
 - **Changes in plume over time**
- **100-year period was modeled**



TCE Plume - 2004

Legend

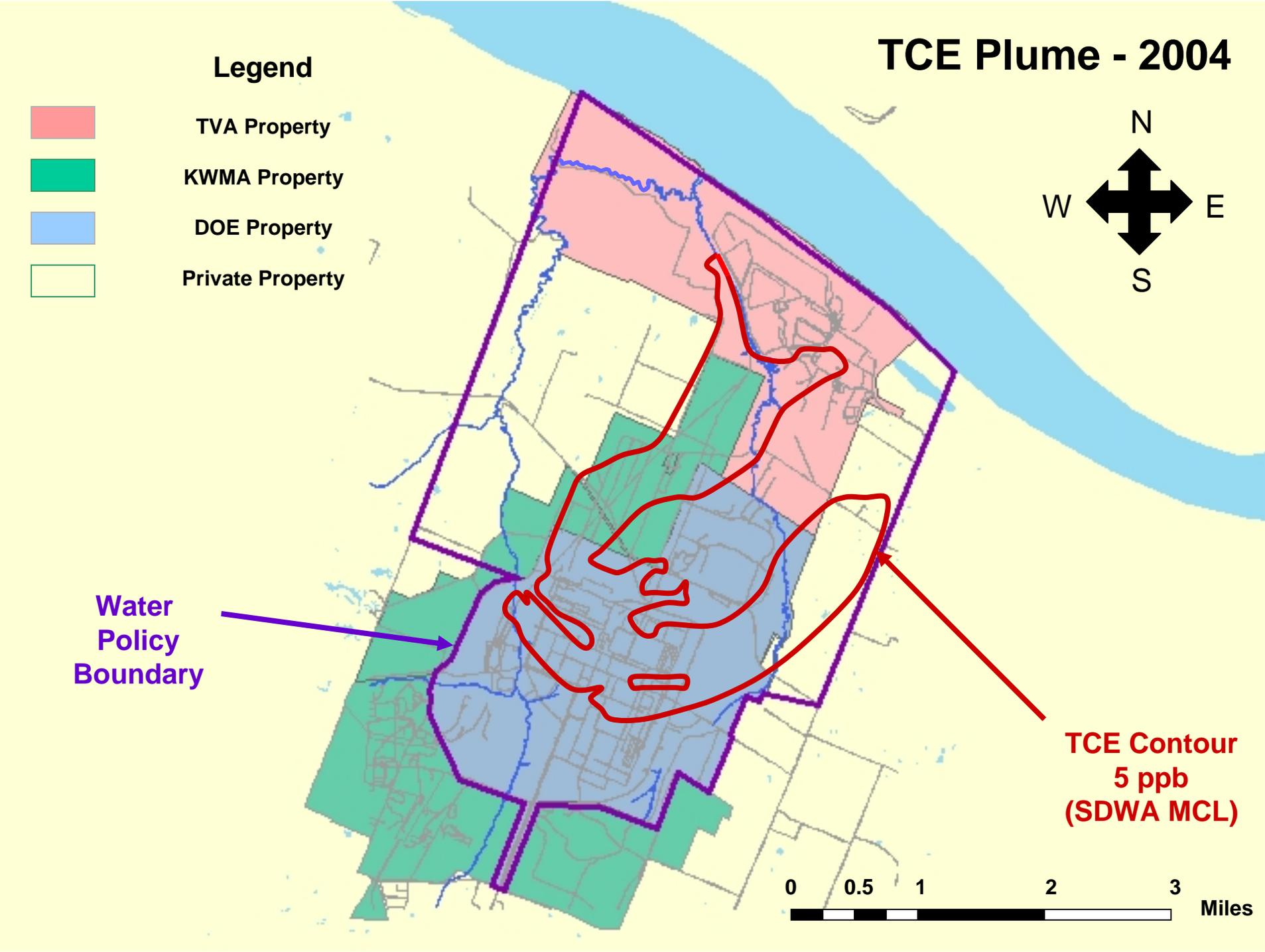
-  TVA Property
-  KWMA Property
-  DOE Property
-  Private Property



Water Policy Boundary

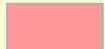


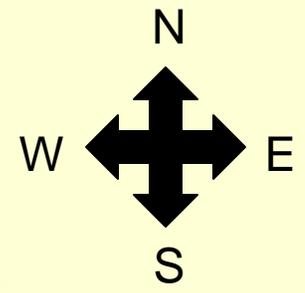
**TCE Contour
5 ppb
(SDWA MCL)**



No Action Scenario – 10 yrs

Legend

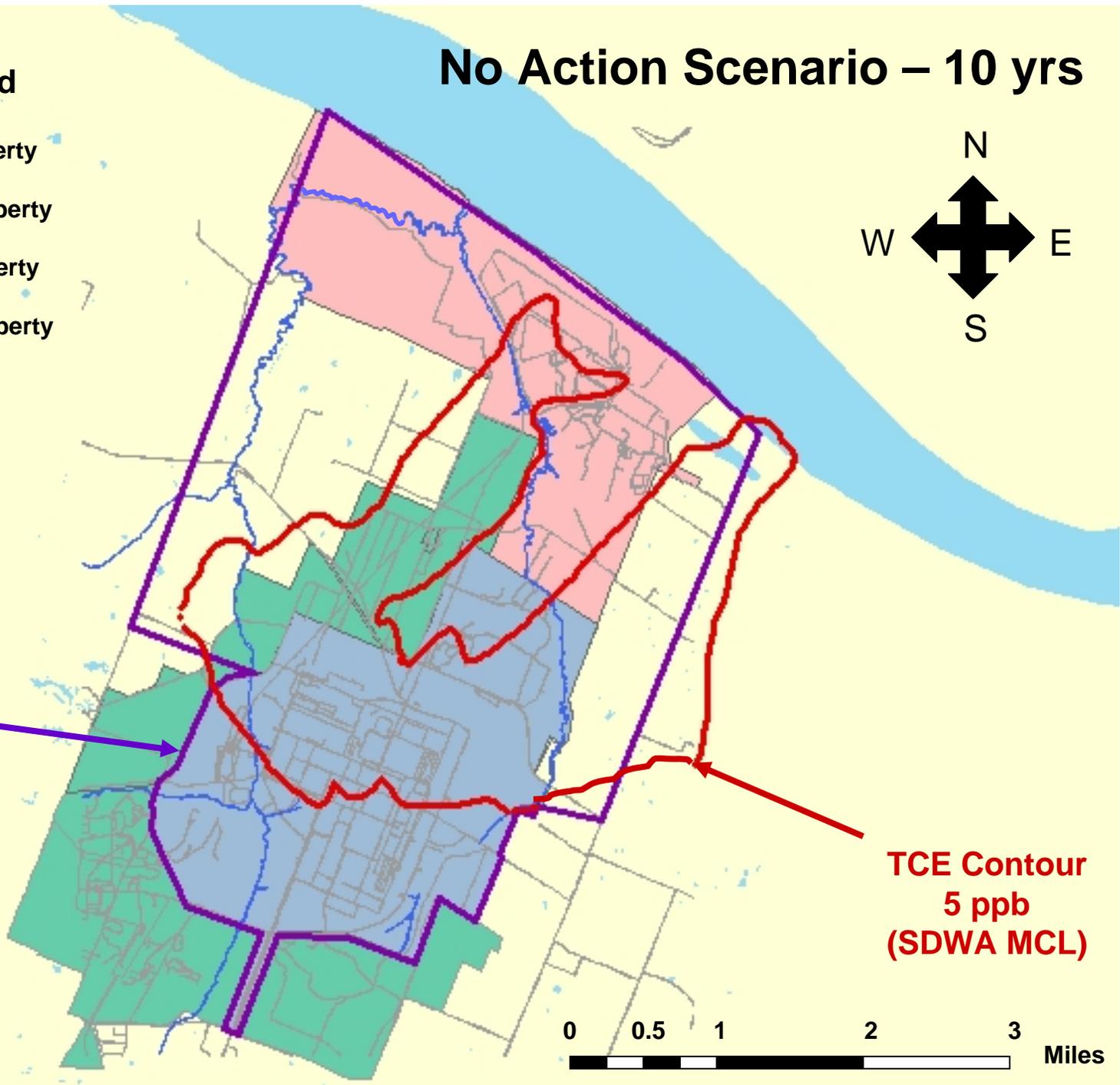
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Water Policy Boundary

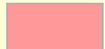


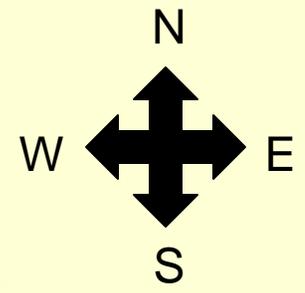
**TCE Contour
5 ppb
(SDWA MCL)**



No Action Scenario – 30 yrs

Legend

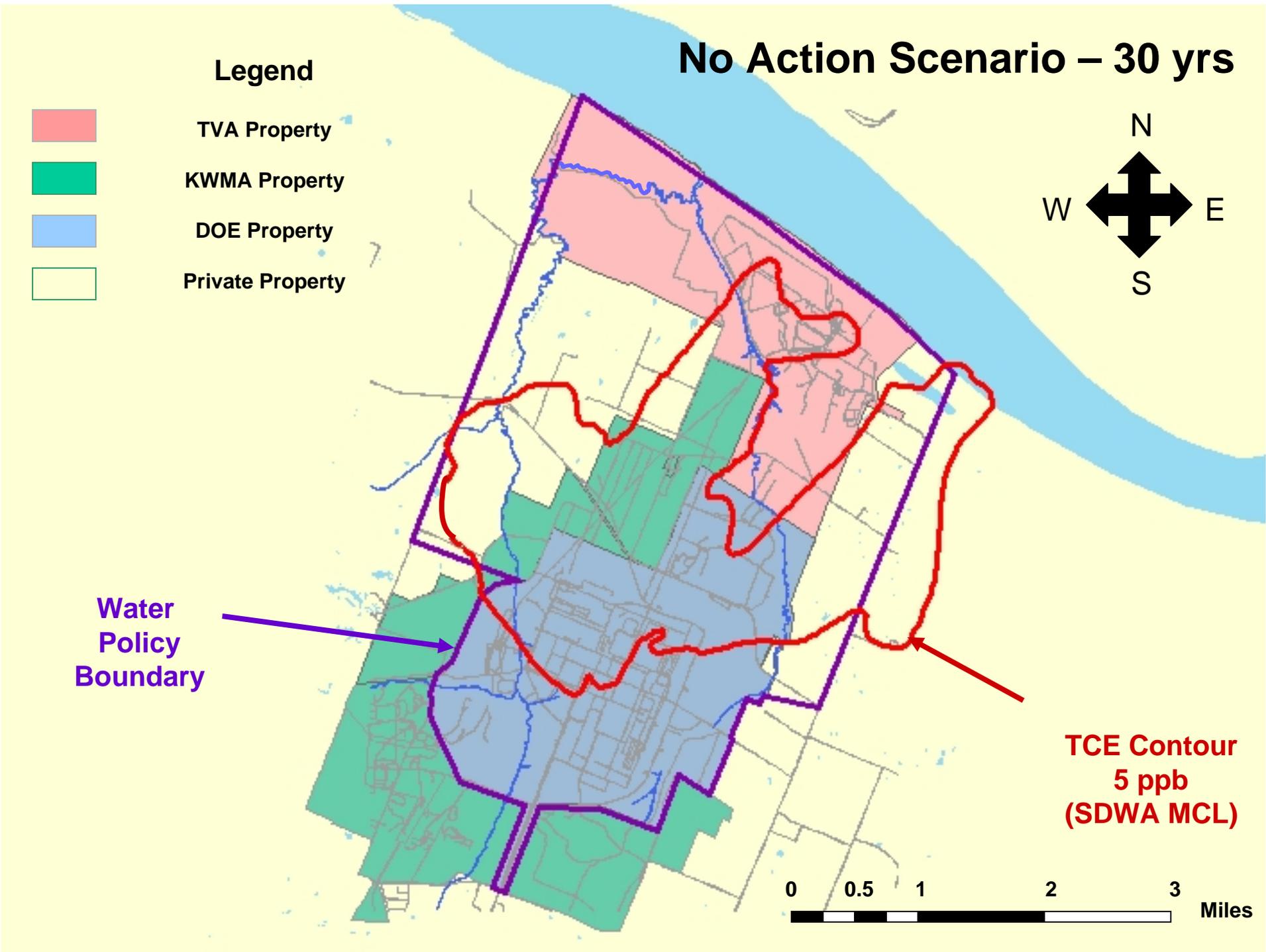
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Water Policy Boundary



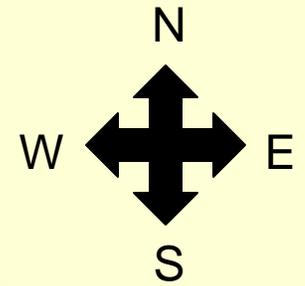
**TCE Contour
5 ppb
(SDWA MCL)**



No Action Scenario – 100 yrs

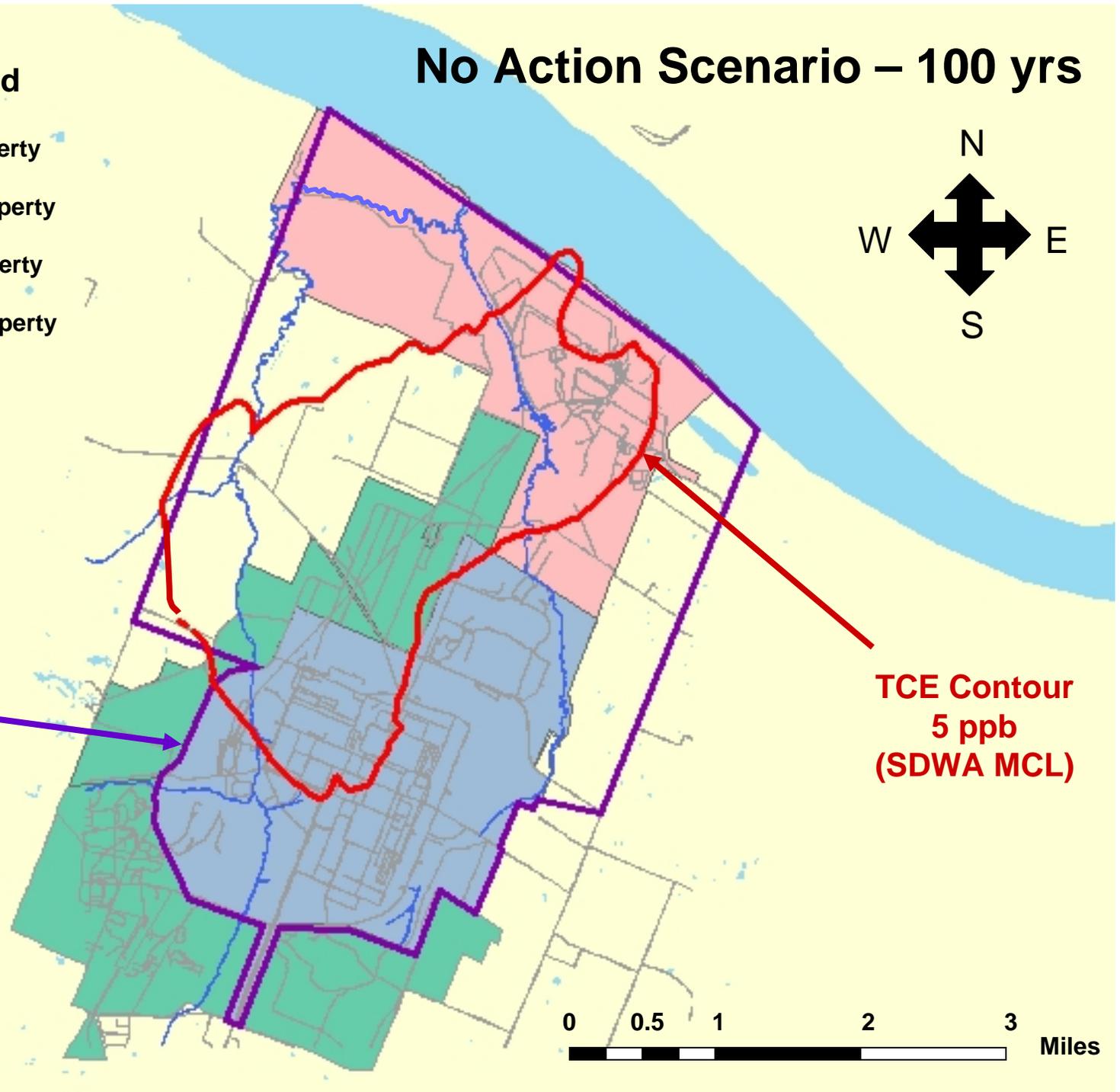
Legend

-  TVA Property
-  KWMA Property
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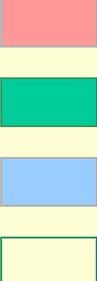
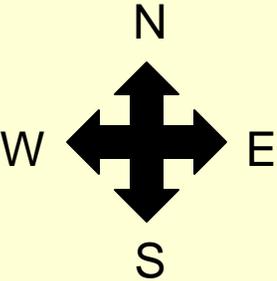


**Water
Policy
Boundary**

**TCE Contour
5 ppb
(SDWA MCL)**



No Action Scenario Maximum Extent

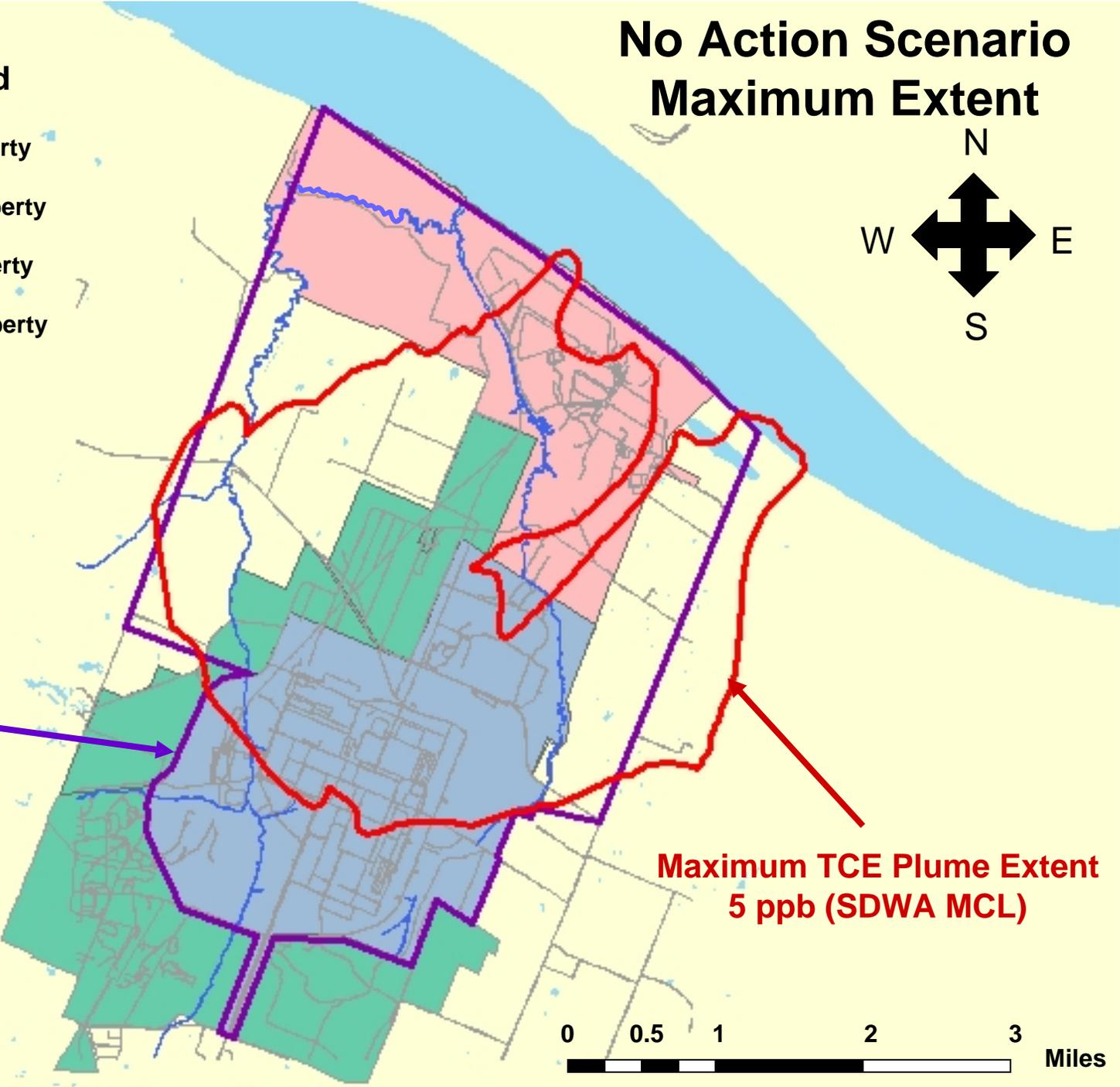


Legend
TVA Property
KWMA Property
DOE Property
Private Property

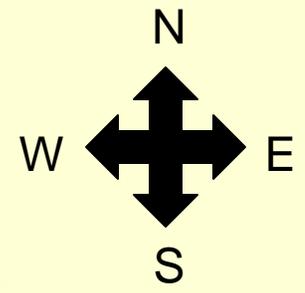
**Water
Policy
Boundary**



**Maximum TCE Plume Extent
5 ppb (SDWA MCL)**



No Action Scenario Maximum Extent

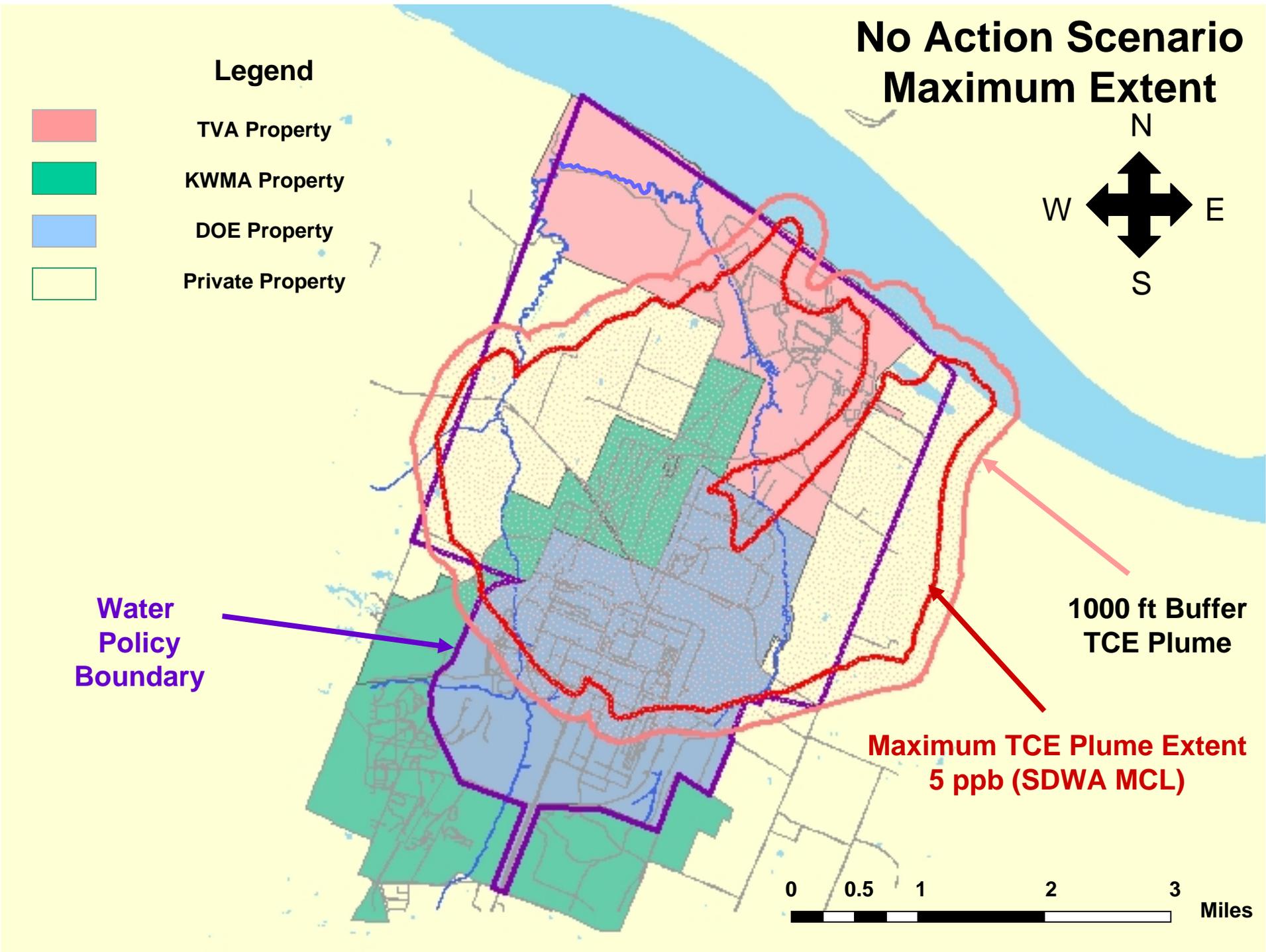


- Legend**
- TVA Property
 - KWMA Property
 - DOE Property
 - Private Property

Water Policy Boundary

1000 ft Buffer TCE Plume

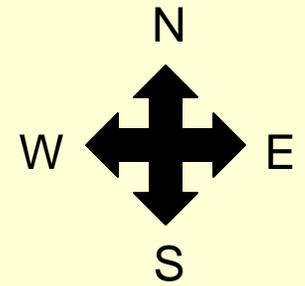
**Maximum TCE Plume Extent
5 ppb (SDWA MCL)**



TCE Plume - 2004

Legend

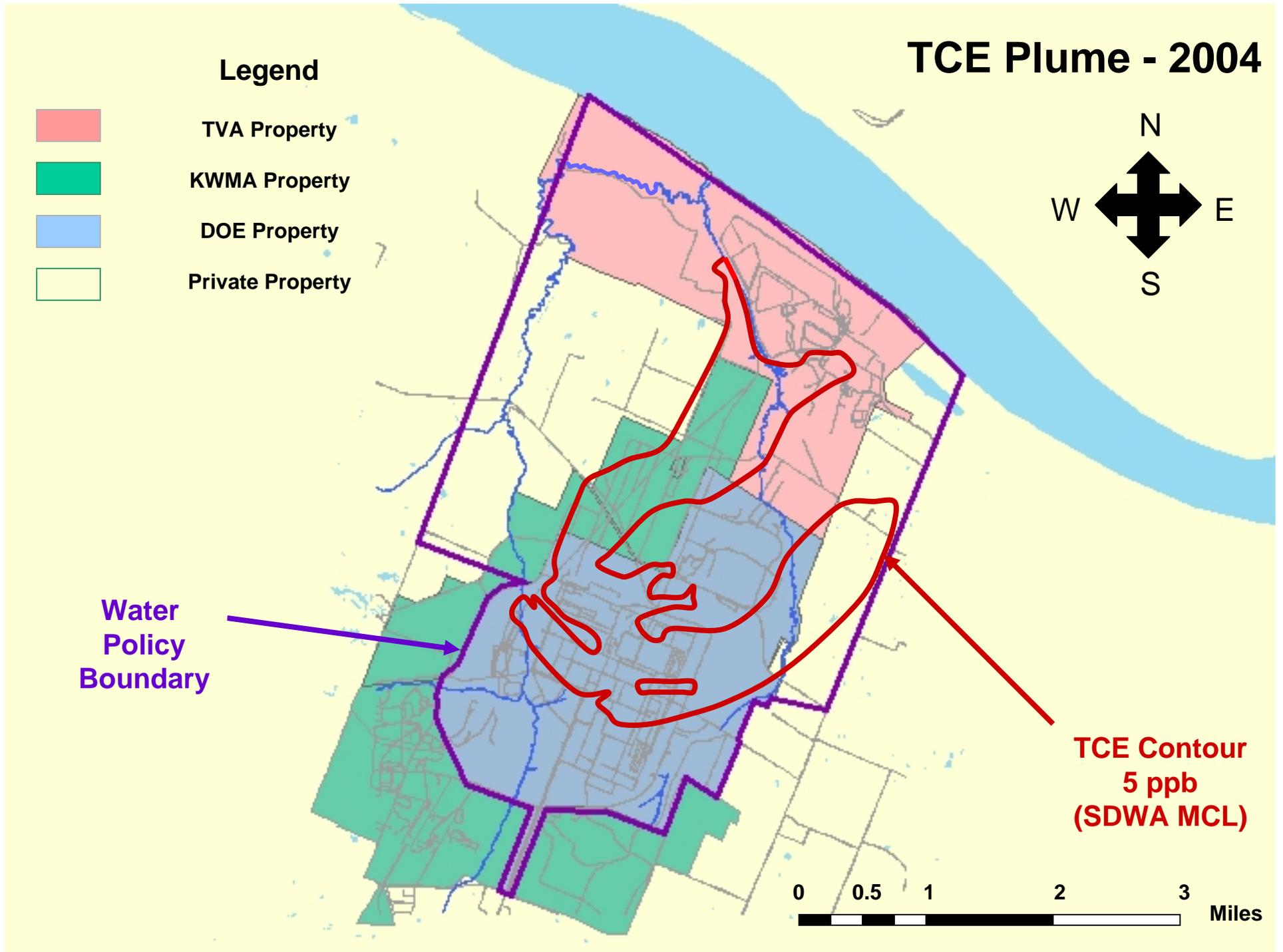
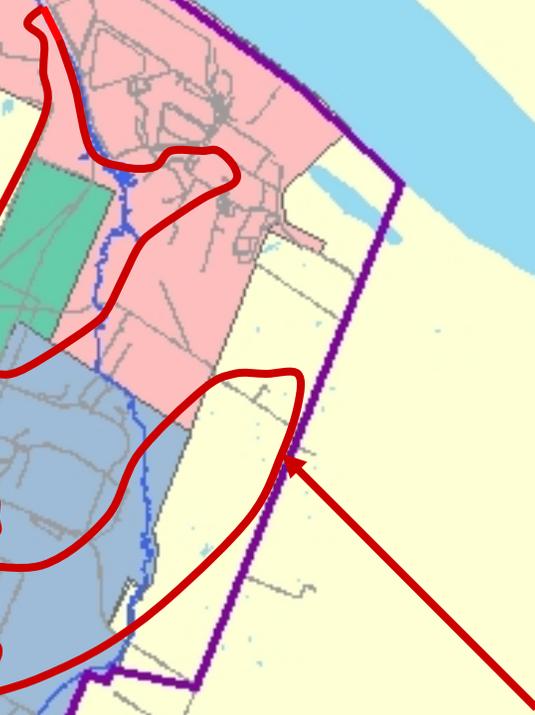
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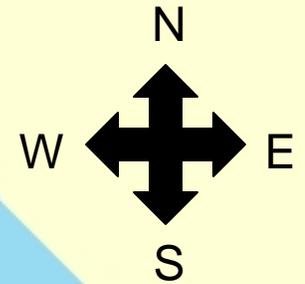
**Water
Policy
Boundary**



**TCE Contour
5 ppb
(SDWA MCL)**



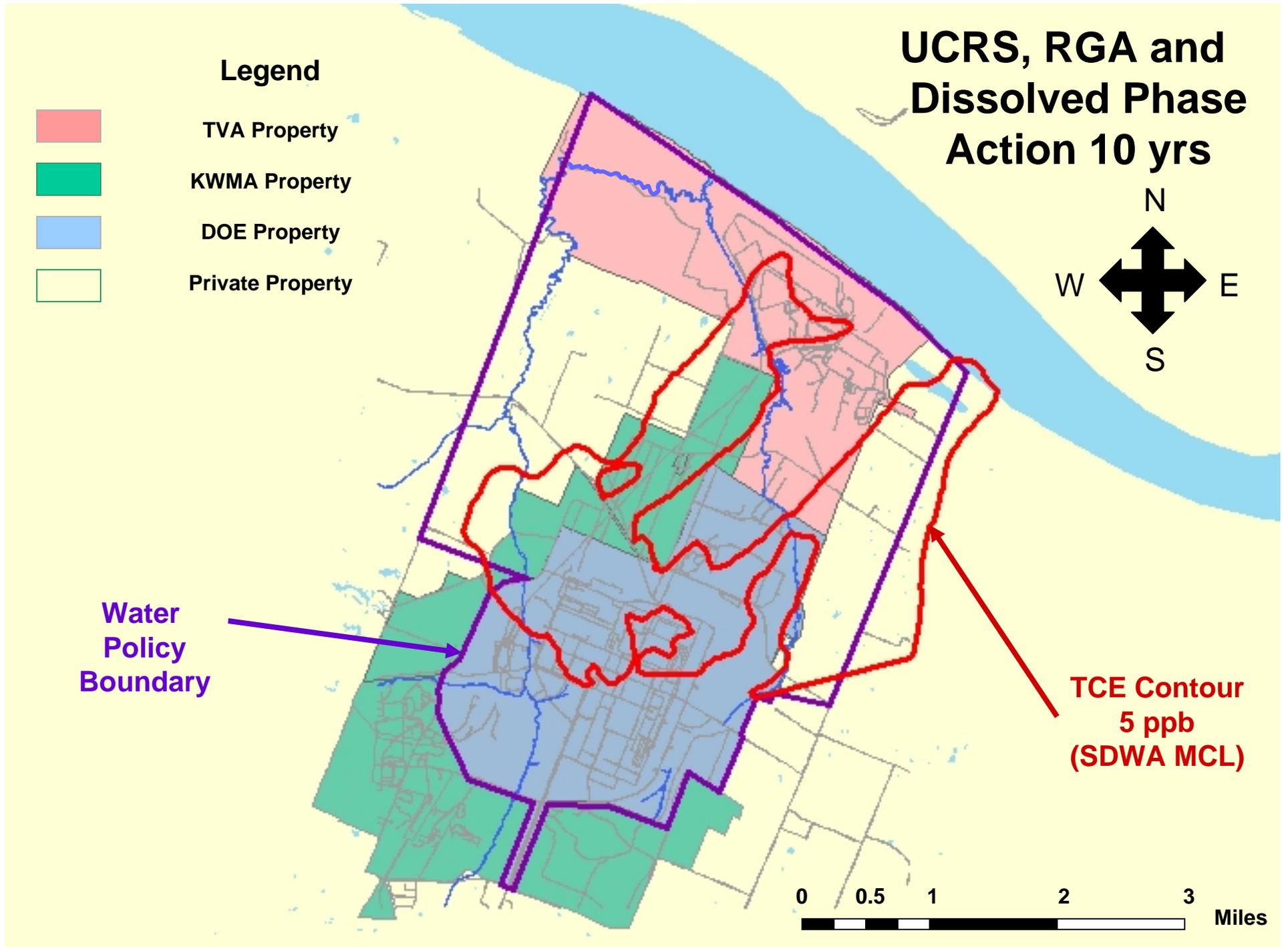
UCRS, RGA and Dissolved Phase Action 10 yrs



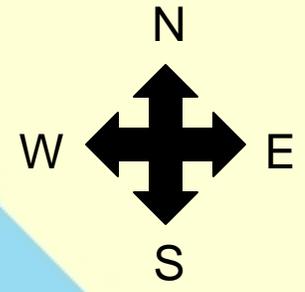
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Water Policy Boundary

TCE Contour 5 ppb (SDWA MCL)



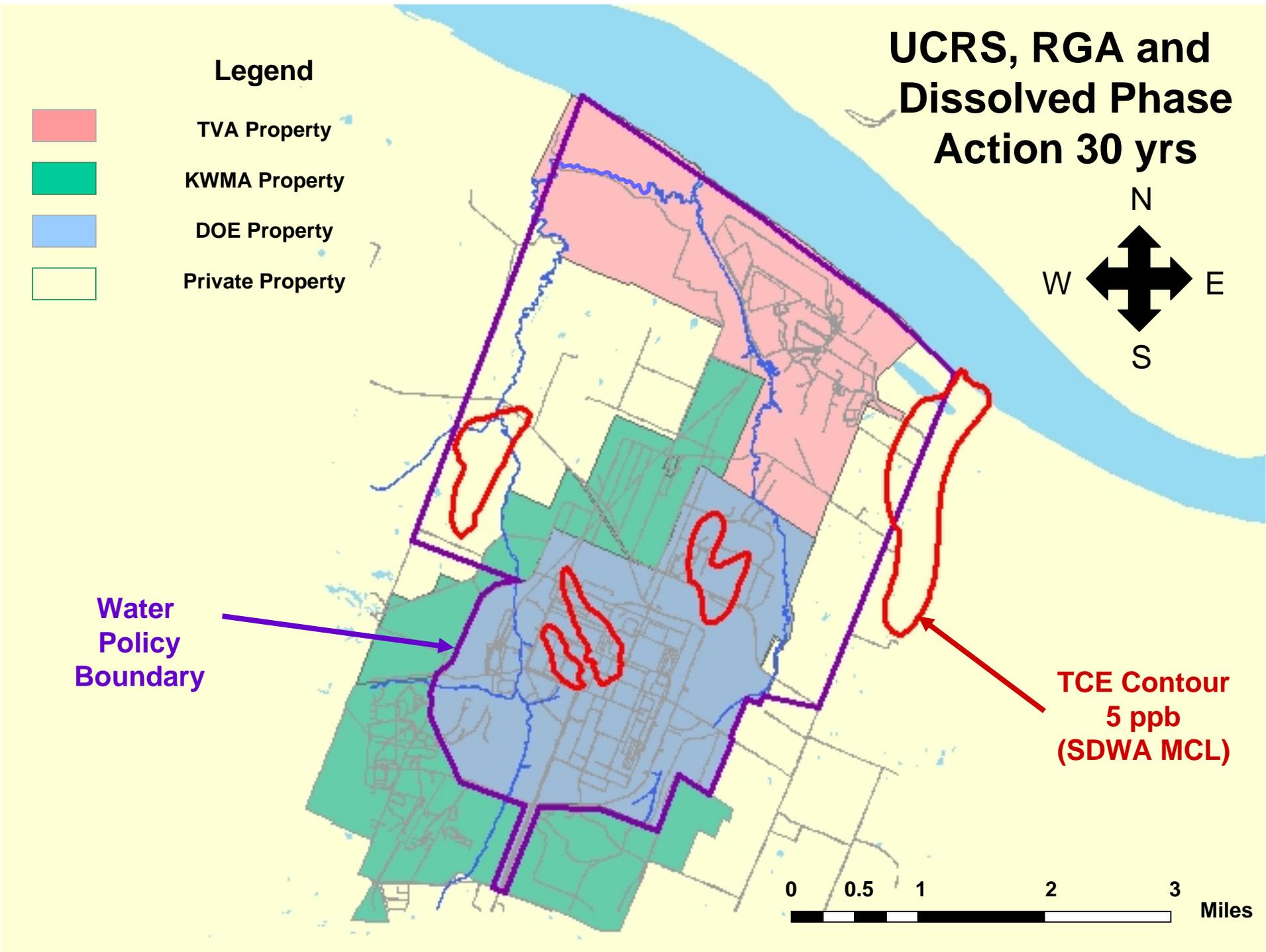
UCRS, RGA and Dissolved Phase Action 30 yrs



- Legend**
- TVA Property
 - KWMA Property
 - DOE Property
 - Private Property

Water Policy Boundary

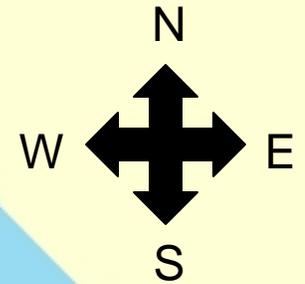
TCE Contour 5 ppb (SDWA MCL)



UCRS, RGA and Dissolved Phase Action 100 yrs

Legend

-  TVA Property
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-  Private Property



Water Policy Boundary

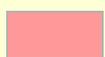


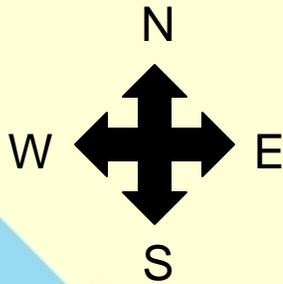
**TCE Contour
5 ppb
(SDWA MCL)**



UCRS, RGA and Dissolved Phase Action Maximum Extent

Legend

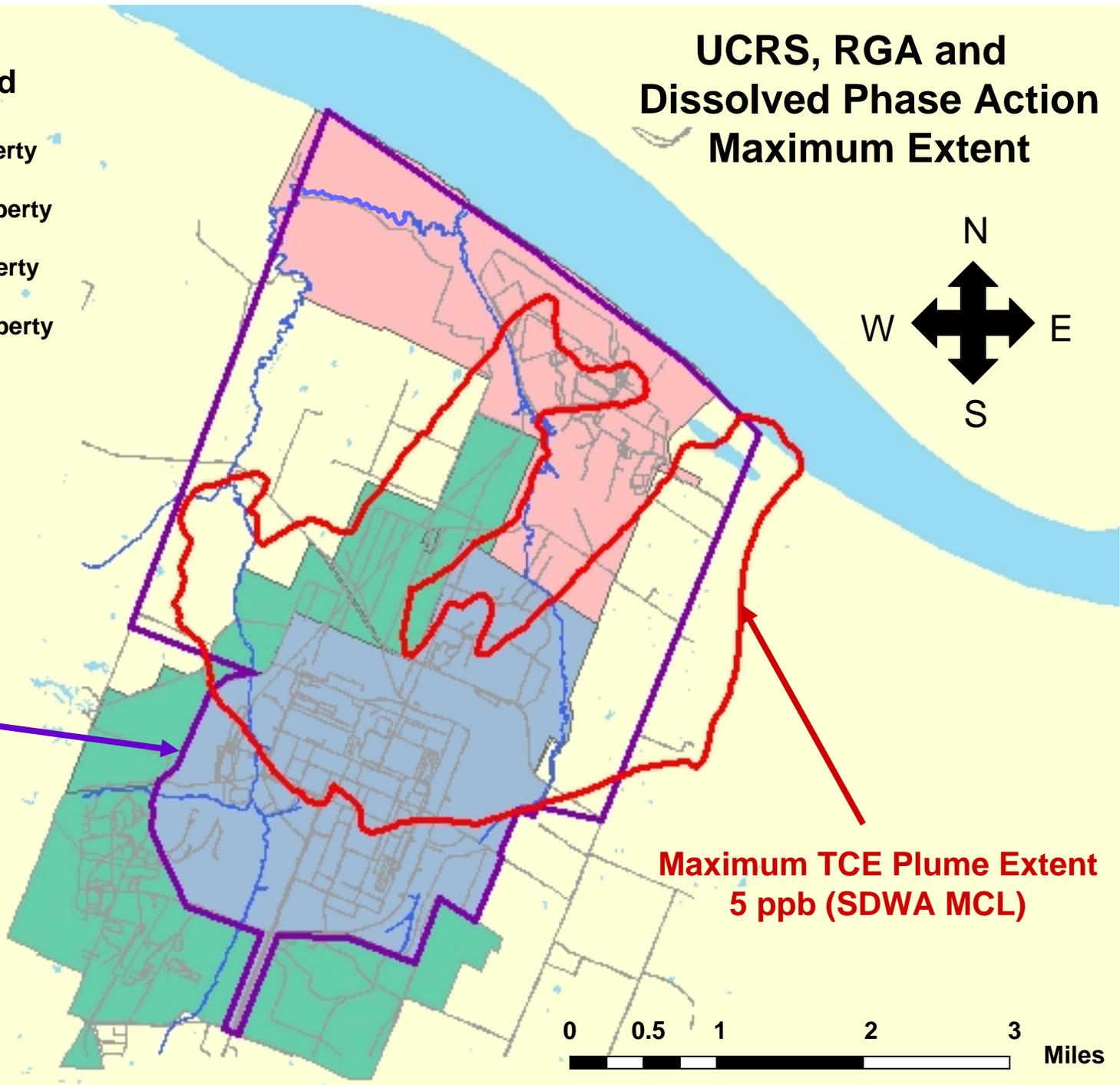
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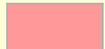


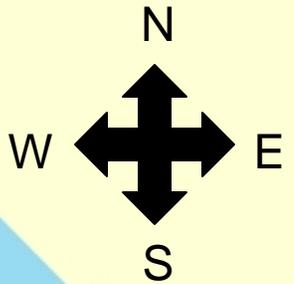
**Maximum TCE Plume Extent
5 ppb (SDWA MCL)**



UCRS, RGA and Dissolved Phase Action Maximum Extent

Legend

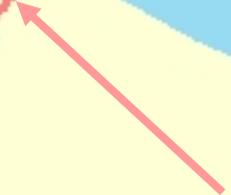
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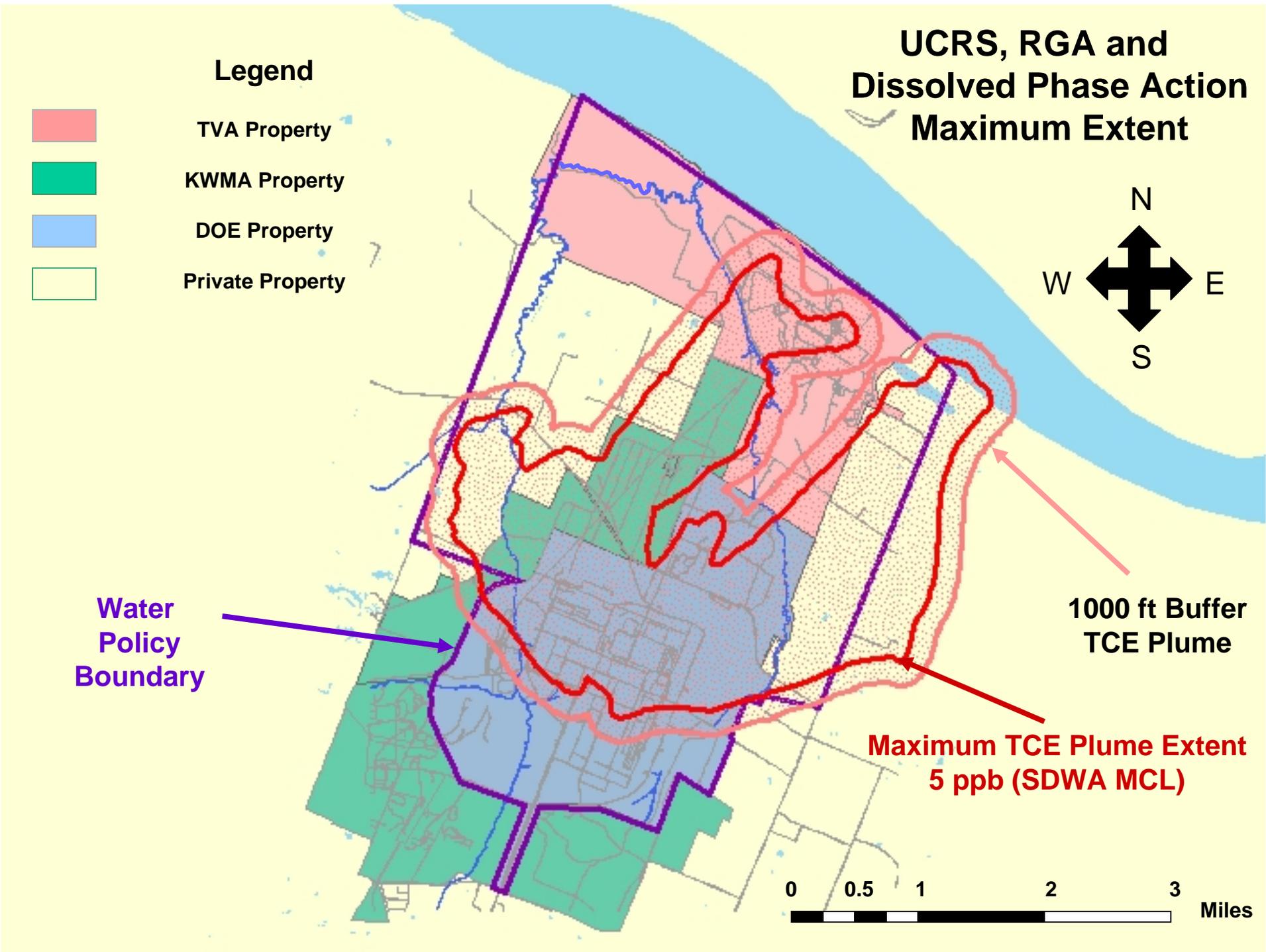
Water Policy Boundary



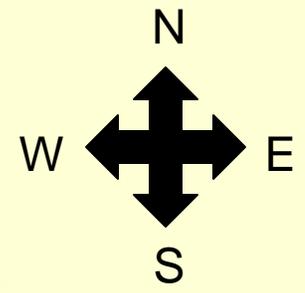
1000 ft Buffer TCE Plume



Maximum TCE Plume Extent 5 ppb (SDWA MCL)



No Action Scenario Maximum Extent

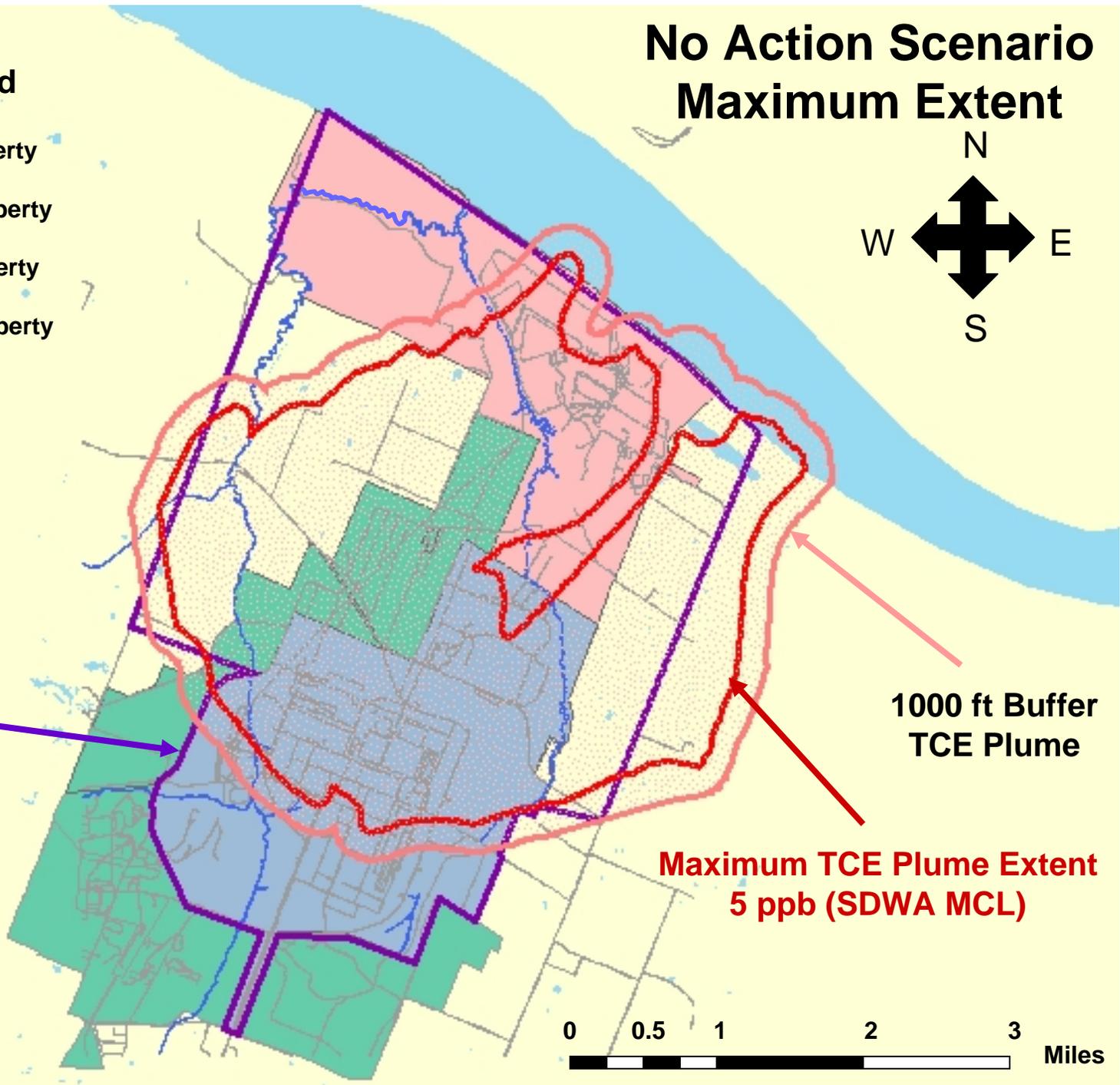


- Legend**
- TVA Property
 - KWMA Property
 - DOE Property
 - Private Property

**Water
Policy
Boundary**

**1000 ft Buffer
TCE Plume**

**Maximum TCE Plume Extent
5 ppb (SDWA MCL)**



Summary of Potentially Impacted Private Properties

- Based on conservative estimates of maximum plume extent
- Assumes if any portion of a property is impacted, then entire property is selected for purchase or easement
- Maximum Extent Without Buffer
 - Approximately 3300 acres for all options
- Maximum Extent With Buffer
 - Approximately 4400 acres for all options



Property Acquisition Potential Options

- **Goal is to identify different ways properties or interests in properties might be purchased in Kentucky**
- **Compiled by UK College of Law**
- **Identified ways include:**
 - **Fee simple ownership (Buy property outright)**
 - **Easements (Restrict use of the property) – several types**
 - **Limited scope easements**
 - **Restrict use of groundwater and/or surface water**
 - **Continuation of water policy**
 - **Expanded scope easements**
 - **Limit use of land, including use of groundwater and/or surface water**
 - **Continuation of water policy**



Property Acquisition Potential Costs

- Federal and state properties not considered
- Properties being evaluated as a group (mass appraisal)
- Fair market value estimates obtained using:
 - Assumes willing buyers and sellers
 - Sales of comparable properties in McCracken County
 - Easements based on similar state and federal programs
- Appropriate federal guidelines
 - *Uniform Appraisal Standards for Federal Land Acquisitions*
 - Provides standards for use in appraising properties taken for federal land use
 - Highest value and best use
 - *“The reasonably probable use that produces the highest property value”*

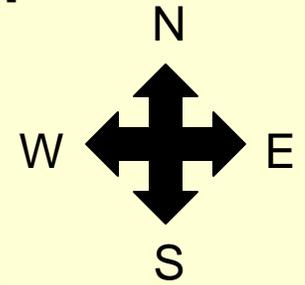


Property Acquisition Potential Costs

- Examined five remedial actions
- Properties impacted based on maximum potential plume extent
- Property costs determined based on:
 - Agricultural property
 - Rural residential property



Plumes Overlaid on Properties

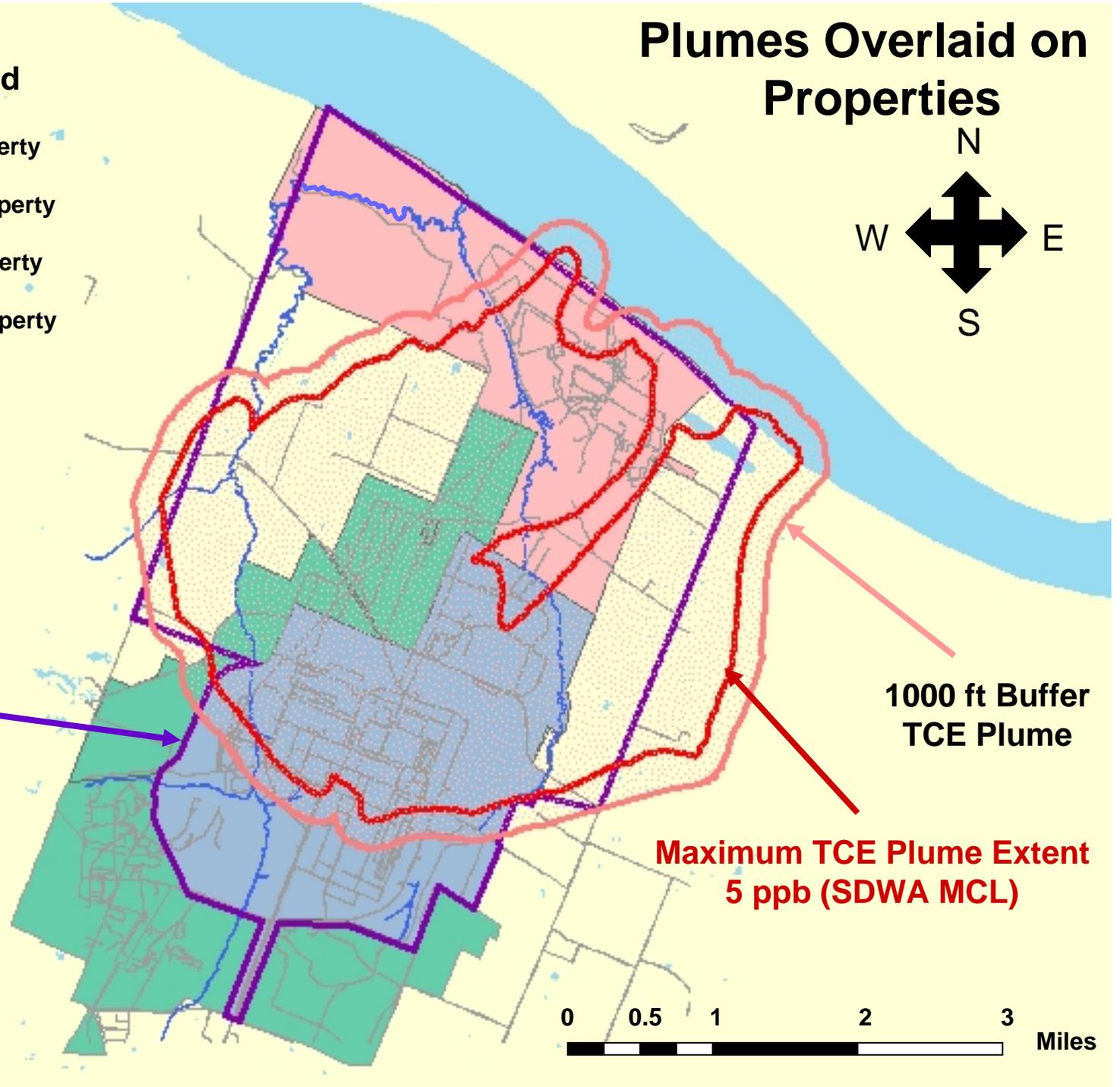


- Legend**
- TVA Property
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Water Policy Boundary

1000 ft Buffer TCE Plume

Maximum TCE Plume Extent 5 ppb (SDWA MCL)



Preliminary Cost Estimate Ranges

- Property acquisition costs
 - Fee Simple - \$19 M to \$47 M
 - Easements - \$2 M to \$16 M
- Remediation costs
 - No Action (without long-term stewardship cost) - \$0 M
 - Pump and Treat - \$68 M
 - Primary (UCRS) Source Action - \$28 M to \$380 M
 - Secondary (RGA) Source Action - \$15 M to \$175 M
 - Primary and Secondary Source and Dissolved Phase Action - \$208 M to \$853 M

**All remediation costs are based on a
30-year evaluation period**



Overview of Study

- Consistent with the Congressional Directive:
 - Identified purchase options
 - Identified maximum extent of the area overlying the plume
 - Developed costs of remedial action options
 - Developed costs of property acquisition options
- Draft report under review
- Any policy decisions would consider additional information:
 - No specific actions being taken
 - No specific policy decisions being made



Future Activities

- Review of draft report started September 15
- Future Briefings/Meetings
 - Public Presentation #2
 - CAB Briefing #3

