

DOCUMENT TITLE: Draft Remediation Goals for Acid Area 2 and 3 at the Former Plum Brook Ordnance Works Sandusky, Ohio					
SITE: US NASA PLUM BROOK, TAYLOR & COLUMBUS Rds., SANDUSKY, OH 44870; ERIE Cnt.; OHID# 322-0552.			DOCUMENT/DATE: received/May 19, 2008		
Ohio EPA – Division of Emergency and Remedial Response					
COMMENTS					
REVIEWER: Dr. Janusz Z. Byczkowski, DERR, CO; Tel: 614-644-3070; e-mail: jbyczkowski@epa.state.oh.us .					
Review/DATE: 06/03/2008					
Comment Number	Sect. Page/Line#	Cross Ref.	Comment	Recommendation	PRP Response
1.			<p>General Remark: It is unclear just how this Document fits into the RI/FS process. It seems to be a sort of addendum to Baseline Risk Assessments, aimed at establishing remediation goals for soil and ground water. However, in order to be useful to risk managers in selecting remediation goals, this Document should be revised.</p> <p>The current Document, instead of providing risk managers with scientifically defensible, qualitative and quantitative information, criticizes the EPA risk assessment methodology, dismisses the results of ecological risk assessment and recommends arbitrary remediation levels which may or may not be protective to all ecological receptors.</p> <p>Typically, instead of preparing a "stand-alone" document, there should be a section at the end of the RI or at the beginning of the FS, which provides objective, "balanced discussion" of risk characterization ("TCCR"; U.S. EPA, 2000) and back-calculates site-specific risk-based preliminary remediation goals (PRGs), developed following the completion of the baseline risk assessments</p>	I suggest a revision of the Document, to present it in the form of APPENDIX to BRA , so it will fit into the formal RI/FS process and to resolve the specific issues listed below.	

		(OEPA-DERR, 2004). The results of both human health and ecological risk assessments (OEPA-DERR, 2003) should be considered.		
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			<p>If you have any questions or need further technical support, please give me a call at: 614-644-3070 or e-mail at jbyczkowski@epa.state.oh.us.</p> <p>References: U.S. EPA (2000) Risk Characterization Handbook. EPA 100-B-00-002, December 2000. Available on-line at: http://www.epa.gov/OSA/spc/pdfs/rchandbk.pdf OEPA-DERR (2004) Use of Risk-Based Numbers in the Remedial Response Process Overview (revised June 28, 2005). Available on-line: http://www.epa.state.oh.us/derr/rules/RR-038.pdf OEPA-DERR (2003) Ecological Risk Assessment Guidance Document (revised April 2008). Available on-line: http://www.epa.state.oh.us/derr/rules/RR-031.pdf</p>		
2.	P 1 L# 9		<p>Specific Issues:</p> <p>This Document states: <i>"... This document utilizes information contained in the baseline human health and screening level ecological risk assessments [...] and site specific conditions to establish remediation goals for both soil and groundwater. This will be accomplished by performing further analysis to examine the uncertainties associated with the calculated incremental lifetime cancer risk (ILCR) and non-cancer hazard index (HI) ..."</i></p> <p>Comment:</p>	Please remove this statement from the text and follow the U.S. EPA (1991) and OEPA-DERR (2004) prescribed process and documentation.	

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			<p>This is beyond the reviewer's comprehension, just how "performing further analysis to examine the uncertainties" can yield remediation goals. Does it also mean that the "uncertainties associated with" the ILCR and HI were inadequately examined in BHHRA and SLERA documents and need "further" analysis?</p> <p>This statement is inappropriate and does not reflect either the U.S. EPA (1991) or the OEPA-DERR (2004) recommended methodology of deriving site-specific PRGs for soil or ground water.</p> <p>References: U.S. EPA (1991) Risk Assessment Guidance for Superfund. Vol. 1 – Human Health Evaluation manual (Part B, Development of Risk-based Preliminary Remediation Goals). EPA/540/R-92/003, December 1991. Available on-line: http://www.epa.gov/oswer/riskassessment/ragsb/index.htm OEPA-DERR (2004) Use of Risk-Based Numbers in the Remedial Response Process Overview (revised June 28, 2005). Available on-line: http://www.epa.state.oh.us/derr/rules/RR-038.pdf</p>		
3.	P 2 L# 19 -23		<p>This Document states: <i>"...Use of TRVs based on lowest observed adverse effect levels (LOAELs) would reduce the hazard quotients by approximately a factor of 10. Estimated hazards were above 1,000 for some receptors exposed to PCB-1260 using the NOAEL-based approach. However, estimated HQs that were above 1,000 are considered unrealistic and toxicologically impossible..."</i></p> <p><u>Comment:</u> The results of appropriately performed ecological risk</p>	Please remove this statement from the text. Since the predicted HQs are highly uncertain, to confirm or refute the findings, please consider performing a bioassay for PCBs . If necessary, please perform the Level IV Field Baseline Ecological Risk Assessment (please follow the OEPA-DERR, 2003	

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			<p>assessment (ERA) should realistically reflect the possible Site-related hazards and should be of such a quality that the ERA could be used directly for risk management decisions (OEPA-DERR, 2003). If the screening level predictions did not provide realistic hazard quantification, the next level – a descriptive assessment should be performed, including a bioassay of tissue from sentinel species.</p> <p>Reference: OEPA-DERR (2003) Ecological Risk Assessment Guidance Document (revised April 2008). Available on-line: http://www.epa.state.oh.us/derr/rules/RR-031.pdf</p>	<p>updated Guidance and contact the OEPA prior to the development of a work plan).</p>	
4.	P 2 L#24 -33 and P 5 L# 14 - 23		<p>This Document states: <i>"...The uncertainties associated with the SLERA likely resulting in an overestimation of the potential for adverse ecological effects include: assuming that COPECs are 100 percent bioavailable; use of laboratory-derived TRVs; and use of the HQ method to estimate risk to populations or communities. [...] many conservative assumptions and modeling approaches were used in the predictive assessment, and that actual hazards to wildlife may be orders of magnitude lower than predicted..."</i></p> <p><u>Comment:</u> The hazard quotients predicted by SLERA, exceeding unity - no matter whether a few times or a few orders of magnitude - mean that there is a potential for affecting adversely the ecological receptors. If after performing the baseline ERA, there are still significant doubts regarding its finding, the bioassays and perhaps, the next level of ecological risk assessment (Level IV ERA, according to OEPA-</p>	<p>Please remove this statement from the text. If the decision will be made to conduct bioassays and perform a descriptive ecological assessment (please contact OEPA-DERR prior to the development of a work plan and/or the Level IV ERA).</p>	

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			DERR, 2003) need to be performed to confirm or refute the findings. The Level IV ERA requires actual field and biological measurements. According to OEPA-DERR (2003): "... <i>Direct sampling of [...] tissues is recommended when a greater level of certainty is required for the risk assessment...</i> " (see above, comment #3)		
5.	P 3 L# 39		This Document states: " <i>...Based on the previous discussion it is recommended that no further action be performed for groundwater...</i> " <u>Comment:</u> According to U.S. EPA Superfund paradigm and OEPA-DERR RI/FS program, recommendations about " <i>no further action</i> ", or any other remedial decision, should be made following the Feasibility Study (FS), which was not yet performed. "No further action" is just one of the feasible alternatives that should be evaluated along with other possibilities under the FS phase of the project. Since FS was not accomplished, the quoted statement is premature.	Please remove this statement from the text.	
6.	P 6 L# 16		This Document states: " <i>...BHHRA represent an upper bound of the risk and hazards associated with the site and do not represent risks or hazards that may actually be present or, in the case of groundwater, managed. Based on the previous discussion it is recommended that no further action be performed for groundwater and that remedial action is warranted to address potential human health impacts from PCBs in soil...</i> " <u>Comment:</u> If the baseline risk assessment did not represent	Please remove this statement from the text.	

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			<p>"risks or hazards that may actually be present [...] or managed", then it cannot be used as a base for sound, scientifically defensible, recommendations. In such a case, the generic "screening values" may need to be used to establish goals for remediation (e.g., Region 5 RCRA ESLs or Region 4 ESVs). Moreover, according to U.S. EPA Superfund paradigm and OEPA-DERR RI/FS program, remedial risk management/mitigation decisions should be made following the FS phase of the project (see above, comment #5).</p>		
7.	P 6 L # 45		<p>This Document states: <i>"...with the exception of PCBs, these constituents are not related to historical process activities at the Acid Areas. Therefore, it is appropriate to develop cleanup goals only for PCBs that are suspected to be site-related..."</i></p> <p><u>Comment:</u> Based on this argument, perhaps, all constituents could have been excluded from remedial action, because, releasing of chemicals into environment is not a part of typical "historical process activities" – however, if not for the release, all chemicals would be present in the environment at background levels.</p>	Please remove this statement from the text.	
8.	P 8 L # 26		<p>This Document states: <i>"...A remediation goal for total PCBs of 1 mg/kg is recommended for Acid Areas 2 and 3 because it is protective for cancer and non-cancer health effects for all current and future receptors and is consistent with 40 CFR 761.61(a)..."</i></p> <p><u>Comment:</u> The quoted statement is premature (see above,</p>	Please remove this statement from the text.	

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			<p>comment #3). This remediation goal does not address ecological receptors (e.g., Region 5 RCRA ESL for total PCBs is as low as 0.000332 mg/kg soil; or Region 4 ESV is 0.02 mg/kg soil). Moreover, this premature recommendation does not consider any "post-cleanup land use limitations" mandated by 40 CFR 761.61(a).</p> <p>References: Region 5 RCRA: Ecological Screening levels, U.S. EPA Region 5, Available on-line: http://www.epa.gov/reg5rcra/ca/edql.htm Region 4 ESV: Recommended Ecological Screening Values (mg/kg) for Soil, U.S. EPA Region 4, WSRC-TR-98-00110. Available on-line: http://www.epa.gov/Region4/waste/ots/epatab4.pdf 40 CFR Ch. I (7-1-03 Edition) § 761.61. Available on-line: http://edocket.access.gpo.gov/cfr_2003/julqtr/pdf/40cfr761.61.pdf</p>		