



**CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC)  
HUMAN AND ECOLOGICAL RISK OFFICE (HERO)**

HERO is pleased to announce our fifth “Quarterly Updates from HERO” – July 2016

1. Revised Human Health Risk Assessment (HHRA) Note 3 – DTSC-Modified Screening Levels (DTSC-SLs), June 2016. The update to HHRA Note is described below with a link to the entire HHRA Note:

HHRA Note 3 – DTSC has developed modified screening levels based on the U.S. EPA Regional Screening Levels (RSLs) for use in the human health risk assessment process at hazardous waste sites and permitted facilities. This revision of HHRA Note 3 outlines the most recent HERO review of the soil, tap water, and ambient air RSLs released in May 2016. HHRA Note 3 presents recommended screening levels (derived using DTSC-modified exposure and toxicity factors) for constituents in soil and tap water for which the DTSC-SL is at least three-fold more protective than the corresponding RSL. For ambient air, HHRA Note 3 presents screening levels for airborne chemicals with a DTSC-SL that is more protective than the corresponding RSL, regardless of degree. For analytes that have at least one DTSC-SL for a specific medium, available RSLs are also included in the tables for completeness when the combination of receptor and endpoint doesn't warrant a DTSC-SL. A link is provided for download of the HHRA Note 3 narrative and screening-level document, as well as a link for the spreadsheet-based versions of the screening tables and supporting Appendices that provide computational details for the derivation of the screening levels for users' convenience.

An additional note for users: DTSC-SLs are derived strictly as risk-based values-mathematical constructs of the exposure calculation algorithms. The derivation of DTSC-SL values does not consider external practical criteria such as analytical detection limits, naturally occurring concentrations, or physical limitations. For tap water, risk-based concentrations occasionally exceed maximum contaminant level (MCL) regulatory criteria. Therefore, if chemical-specific or site-specific issues arise when DTSC-SLs are used for site characterization, in development of work plans, or other screening uses, please consult with the DTSC toxicologist to develop an agreeable resolution.

The updated HHRA Note 3 can be found at:

[http://www.dtsc.ca.gov/AssessingRisk/upload/HHRA\\_Note\\_3\\_-2016-06.pdf](http://www.dtsc.ca.gov/AssessingRisk/upload/HHRA_Note_3_-2016-06.pdf), and  
<http://www.dtsc.ca.gov/assessingrisk/humanrisk2.cfm>.

2. Revisions to Human Health Risk Assessment (HHRA) Note 4 – Conducting Screening Level Human Health Risk Assessments, July 2016. The update to this HHRA Note is described below with a link to the entire HHRA Note:

HHRA Note 4 - HHRA Note 4 outlines the current recommended methodology for conducting screening level human health risk assessments and how to apply the recommended screening levels discussed in HHRA Note 3 at DTSC hazardous waste sites and permitted facilities. This HHRA Note replaces our 1994 memorandum and is an update to our June 9, 2011 and October 2015 Note 4. In

response to comments and questions, this revision incorporates recommendations for use of groundwater data for vapor intrusion to indoor air assessments and calculation of benzo(a)pyrene (BaP)-equivalent concentrations. The updated HHRA Note 4 can be found at: [http://www.dtsc.ca.gov/AssessingRisk/upload/HERO\\_HHRA\\_Note\\_Number-4-2016-07-01.pdf](http://www.dtsc.ca.gov/AssessingRisk/upload/HERO_HHRA_Note_Number-4-2016-07-01.pdf), and <http://www.dtsc.ca.gov/assessingrisk/humanrisk2.cfm>.

### 3. May 2016 USEPA Regional Screening Levels (RSLs).

The USEPA released the latest version of the RSLs. The RSL tables can be found at: <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016>. Below is a list of *What's New* in the May 2016 version of the RSLs:

- Chemicals with toxicity value changes due to [Cal EPA](#) updates are:
  - Lead acetate,
  - Toluene-2,4-diisocyanate, and
  - Toluene-2,6-diisocyanate
- Chemicals with new toxicity values due to [PPRTV](#) updates are:
  - Chloronitrobenzene, p-,
  - Benzaldehyde,
  - Thallic oxide RfD was derived by MW adjustment, and
  - Thallium Selenite RfD was derived by MW adjustment
- The chemical name associated with CAS 114-26-1 was changed to Phenol, 2-(1-methylethoxy)-, methylcarbamate from Propanediol, 1,2-.
- The programming of the soil to groundwater scenario was changed to allow the calculation of the SSL when H' is missing.
- The programming of the diffusivity in air (Dia) equation was changed to use the dioxin-specific equation for furans and dioxin-like PCBs. See section 4.13.4 of the [User's Guide](#).
- The hierarchy of Koc sources was modified to use the SSL first for the nine ionizable organics identified. See section 2.4.2 of the [User's Guide](#).
- Various parameters have changed for Chlordane, Hydrogen cyanide, Cyanide (CN-) and White phosphorus.
- Freezing point values from Yaws were added to the 6th position of the hierarchy.
- Changes have been made to the User's Guide in sections 2.3, 2.4.2, 4.13.4, 4.13.8, and 5.2.
- Changes have been made to FAQs 5, 21, 28, 29, 41, and 42. FAQ 54 has been added concerning White phosphorus.

### 4. Coming Soon. Arsenic Bioavailability:

The US EPA Brownfields funded grant on Arsenic Bioavailability in Mining Soils wrapped up in late 2015. The study webpage ([http://www.dtsc.ca.gov/InformationResources/Arsenic\\_Relative\\_Study.cfm](http://www.dtsc.ca.gov/InformationResources/Arsenic_Relative_Study.cfm)) has been updated to include a copy of the Final Report ([http://www.dtsc.ca.gov/InformationResources/upload/Arsenic\\_Study.pdf](http://www.dtsc.ca.gov/InformationResources/upload/Arsenic_Study.pdf)) that was submitted to US EPA in December 2015.

Valerie Hanley of HERO is currently preparing an HHRA Note on the use of the newly developed California Arsenic Bioaccessibility (CAB) Method for estimating the relative bioavailability (RBA) of arsenic in site soils. This is an in vitro (benchtop) method that allows for accurate prediction of RBA without the need to do an animal feeding study. This HHRA note is expected to be released this summer. Please contact Valerie if you have any questions or would like to discuss this approach further [Valerie.Hanley@dtsc.ca.gov](mailto:Valerie.Hanley@dtsc.ca.gov).

Please contact your site toxicologist if you have any questions.

Thank you,

HERO