Nowell, Keith, Env. Health

From: Nowell, Keith, Env. Health
Sent: Wednesday, November 25, 2015 9:47 AM
To: 'Douglas Herman'
Cc: 'Diane Heinze'; Roe, Dilan, Env. Health
Subject: benzo(a)pyrene toxicity equivalent, ACEH Case File No. RO2917 and GeoTracker Global ID T06019782925,MOIA, TERMINAL 2 UTILITIES CORRIDOR, 0 AIRPORT DRIVE

Hi Doug,

Re the benzo(a)pyrene toxicity equivalent (BaPe) values for carcinogenic polycyclic aromatic hydrocarbon compounds (PAHs)-

To summarize, the seven carcinogenic PAHs are: benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. These compounds and their associated potency equivalent factors (PEFs) are presented in the table below.

Compound	PEF
Benz(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.1
Chrysene	0.01
Dibenz(a,h)anthracene	0.34
Indeno(1,2,3-cd)pyrene	0.1

The California State Water Resources Control Board (SWRCB) Low Threat Underground Storage Tank Case Closure Policy (LTCP) *Technical Justification for Soil Screening Levels for Direct Contact and Outdoor Air Exposure Pathways*, Final March 15, 2012 (Technical Justification paper), footnote 4 states "The Office of Environmental Health Hazard Assessment (OEHHA) of Cal/EPA has developed potency equivalency factors (PEFs) for carcinogenic PAHs based on their potential toxicity when compared to benzo(a)pyrene [B(a)P]. To estimate B(a)P toxicity equivalents (TEQs; referred to as BaPe), the concentration of each carcinogenic PAH detected in soil is multiplied by the appropriate PEF developed by OEHHA [benz[a]anthracene (0.1), benzo[a]pyrene (1.0), benzo[b]fluoranthene (0.1), benzo[k]fluoranthene (0.1), chrysene (0.01), dibenz(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). The sum of BaPe concentrations for a mixture of PAH results in a total BaPe for each sample; the total BaPe concentrations should be compared to the soil screening level for PAHs. "

Here is a link to the LTCP Technical Justification paper:

http://www.waterboards.ca.gov/ust/docs/dc_tecjust.pdf

Here is a link to the Department of Toxic Substances Control (DTSC) webpage regarding BaPe:

https://www.dtsc.ca.gov/AssessingRisk/upload/HERD_Poster_Benzo-a-pyrene-pdf.pdf

The directive letter for the subject case requesting a LTCP evaluation, including a determination of sensitive receptors, has been submitted for review. ACEH looks forward to working with you and your consultants to advance the case toward closure. Should you have any questions regarding this correspondence or your case, please call me at (510) 567-6764 or send an electronic mail message at keith.nowell@acgov.org.

Have a great Thanksgiving.

Respectfully,
Keith Nowell

From: Douglas Herman [mailto:dherman@portoakland.com]
Sent: Wednesday, November 18, 2015 1:33 PM
To: Nowell, Keith, Env. Health <Keith.Nowell@acgov.org>
Cc: Douglas Herman <dherman@portoakland.com>; Diane Heinze <dheinze@portoakland.com>
Subject: Terminal 2 Investigation

Hi Keith,

Just a reminder, In our meeting of November 3, 2015, you indicated you would send a Directive for the Terminal 2 Site, RO 2917, stating we needed to evaluate direct contact by summing benzo (a) pyrene equivalents for relevant PAHs….thanks

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