**Coakley Landfill Update**

Governor's Taskforce to Investigate Seacoast Pediatric Cancer Cluster

US Environmental Protection Agency (EPA)
NH Department of Environmental Services (NHDES)
February 16, 2017

**1. Status of water supply and surface water sampling programs**

NHDES sampling of an additional thirty-nine (39) private wells in areas around the Coakley Landfill (Landfill) and five (5) surface water locations along Berry's Brook has been completed. To date, a total of 77 private wells have been sampled around the Coakley Landfill. Below is a summary from the most recent sampling of private wells and surface waters:

- Thirty four (34) private wells have been sampled northwest of the landfill off of Falls Way, Ridgecrest Drive, Skyview Drive, Sunnyside Drive, Windsor Green, September Drive, Balsam Circle and Pinewood Circle in Greenland.
- Three private water supply samples were collected north/northeast of the Landfill off of Lafayette Road in Rye and Eastwood Drive in Portsmouth.
- Two private water supply samples were collected south of the Landfill off of Woodknoll Drive in North Hampton.
- Five surface water samples were collected along Berry's Brook north of the Landfill.

All data sets have been received and reported to property owners and are summarized on the attached Figure 1. Surface water test results are summarized on Figure 2.

The Coakley Landfill Group (CLG) has completed sampling of nineteen private drinking water wells previously tested along Breakfast Hill Road and within the Falls Way, Ridgecrest Drive, Stone Meadow Way, Red Oak Drive and Berry Farm Lane neighborhoods. Validated sample results are expected by mid-March 2017. All the wells were tested for arsenic, manganese, 1,4-dioxane, PFCs, and field parameters. The sampling/testing will be repeated in August 2017, February 2018, and August 2018.

Of all private well samples collected and results received to date, there has been no exceedance of any drinking water quality standard. The two locations with the highest combined concentrations of PFOA/PFOS occurred off of Random Road in Rye and September Drive in Greenland at 33.7 and 30.4 parts per trillion, respectively.

There have been requests for in-home water treatment options for the removal of PFOA/PFOS. The NHDES website link for more information:

http://www.des.nh.gov/organization/commissioner/documents/pfoa-inhome-treatment-20160518.pdf

SEMS Doc ID 596740

**2. Surface Water and Sediment Screening Levels (SLs)**

EPA has developed screening levels for the incidental ingestion of surface water or sediments by children and adults who may wade in Berry's Brook. SLs are not cleanup standards and should not be applied as such. The SL's role in site "screening" is to help identify areas, contaminants, and conditions that require further federal attention at a particular site. Generally, at sites where contaminant concentrations fall below SLs, no further action or study is warranted under the Superfund program, so long as the exposure assumptions at a site match those taken into account by the SL calculations. Chemical concentrations above the SL would not automatically designate a site as "dirty" or trigger a response action; however, exceeding a SL suggests that further evaluation of the potential risks by site contaminants is appropriate. It is important to note that an exceedance to a screening level does not necessarily mean that there is an unacceptable risk at the Site.

EPA Region 1 in consultation with EPA Headquarters has developed site-specific screening levels (SLs) for Perfluorooctanoic acid (PFOA), Perfluorooctane sulfonate (PFOS) and Perfluorobutane sulfonate (PFBS) in surface water and sediments associated with the Coakley Landfill Superfund Site. These screening levels are strictly for the incidental ingestion of surface water or sediments by children and adults who may wade in Berry's Brook. Berry's Brook headwaters are near the landfill and flow through a residential area north/northeast of the landfill. The SLs will be compared against the results of surface water samples collected so far by the Conservation Law Foundation and the NHDES and will help EPA to determine whether additional sampling and/or further risk evaluations are necessary. The SLs will also be used for any future surface water and sediment sampling that will be done in relation to the Coakley site. The SLs developed by EPA Region 1 include two exposure frequencies, an extremely conservative (protective) assumption of 120 days/year and a more realistic one of 45 days/year. The surface water SLs for the most vulnerable receptor (child) under the most conservative assumption are 760 ppt for PFOA, 760 ppt for PFOS, and 760,000 ppt for PFBS. The same SLs under the most realistic exposure frequency are 2,030 ppt for PFOA, 2,030 ppt for PFOS, and 2,030,000 ppt for PFBS. *(Please see the supporting documents in the following pages of this update regarding EPA's development of site-specific Screening Levels for Coakley Landfill).*

None of the results obtained so far exceed the SLs under the more realistic exposure frequency. Under the less realistic but most protective exposure scenario, all results were below the Screening Level, except the PFOA level for one sample approximately midway between the landfill and the culvert at the intersection of Breakfast Hill Road and the former railroad tracks. This sample showed 850 ppt of PFOA. Given these results, in order to ensure maximum protection, EPA has decided that further sampling of surface water and sediments are necessary.

EPA would need additional information about fish consumption at Berry's Brook in order to determine if it is necessary to develop fish and shellfish screening levels for human consumption.

The Coakley Landfill Group is expected to submit a work plan that includes the collection of surface water and sediment samples by 2/15/2017. EPA and NHDES will be reviewing that work plan while considering the aforementioned results and previous sampling locations.

**3. Coakley Landfill Group Activities**

On January 5, 2017 the CLG responded to EPA's request to perform the following tasks:

a. Preparation of a revised sampling and analysis plan and quality assurance project plan to be submitted to EPA and NHDES in February 2017.

b. Perform spring site-wide sampling round, including surface water, sediment and leachate seep sampling in April 2017.

c. Prepare work plan for the installation of two well couplets near the northwest GMZ boundary and submit to the agencies by the end of January.

d. Install GMZ compliance well couplets in NW GMZ in late February.

e. Prepare work plan for background arsenic and manganese study. Begin investigation summer 2017.

f. On February 10 the CLG submitted to the agencies a report with the results from the sampling of on-site monitoring wells in the southern area of the GMZ (FPC-3 well cluster, as noted on Figure 1). The agencies had identified the FPC-3 well cluster (a group of three closely spaced wells with different sampling depths), which had not been sampled in recent years, to be appropriately located to assist in verifying compliance in the southern area of the GMZ. Results showed VOCs, 1,4-dioxane and PFOA/PFOS below laboratory reporting limits in all samples collected. This report can be found on the NHDES OneStop data site using site number 198712001. http://www4.des.state.nh.us/DESOnestop/BasicSearch.aspx The agencies are reviewing the report and the results of private well sampling further south to determine next steps.

**4. NHDES/EPA plan moving forward**

EPA and NHDES plan to continue provided email updates on a regular as-needed basis.

The agencies will review planning documents submitted by the Coakley Landfill Group and provide comments prior to approving work items listed above.

For further information, please contact:

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NHDES: Andrew Hoffman; 603-271-6778; *Andrew.Hoffman@des.nh.gov*

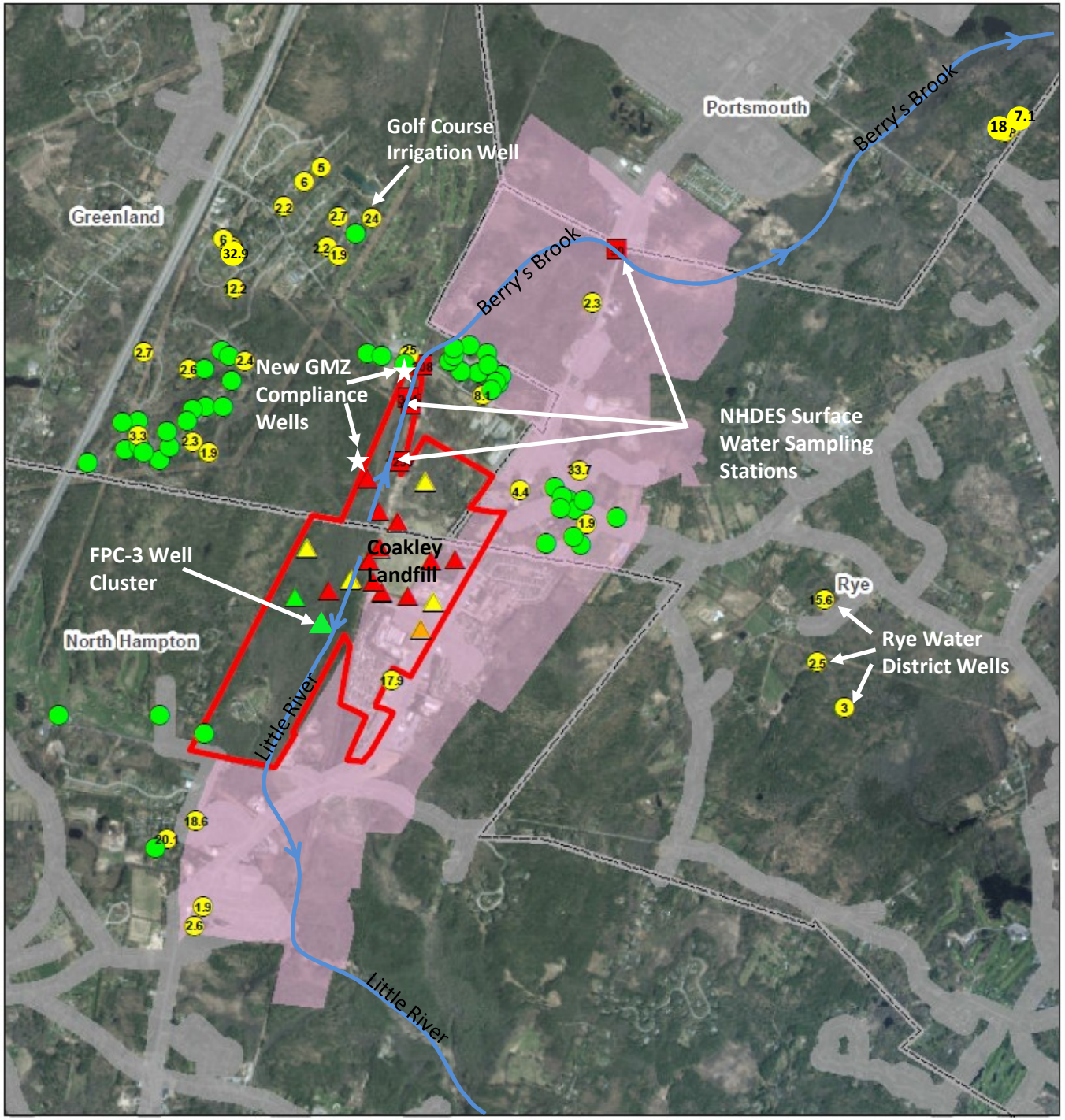


**FIGURE 1**

# COAKLEY AREA PFC INVESTIGATION February 15, 2017

GMZ (Approximate)

**PFOA + PFOS (PPT)**

| Supply Well | Monitoring Well | Surface Water | Other Sample | |
|---|---|---|---|---|
| ● | ▲ | ■ | ⬟ | ≥70 |
| ● | ▲ | ■ | ⬟ | 40 - <70 |
| ● | ▲ | ■ | ⬟ | <40 |
| ● | ▲ | ■ | ⬟ | ND |
| ● | | | | Analytical Result Pending |

Postcards Mailed

Water Distribution

Political Boundary

1 inch equals 2,600 feet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

**FIGURE 2**
**SUMMARY OF NHDES SURFACE WATER SAMPLE RESULTS**

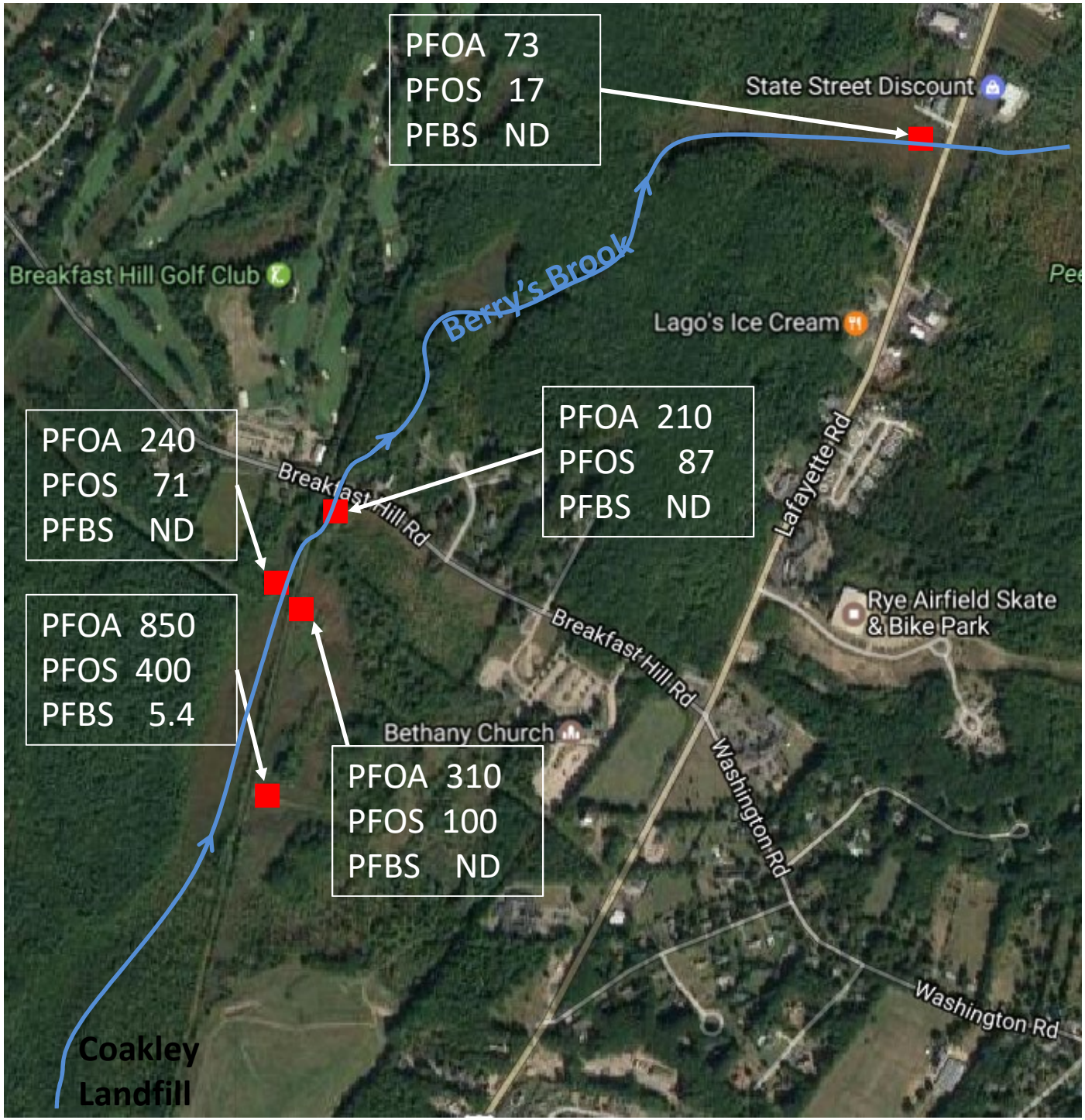


FIGURE 3
Berry's Brook Reach
F&G stocking at Brackett Rd.
Approximately 2,000 yearling brown trout 8-10 inches long in April & October
Approximate upstream limit of tidal water
No fishing activity documented upstream of Sagamore Road
NHDES Surface Water Sampling Stations
Berry's Brook
Portsmouth Land
Peverly Hill Rd
Elwyn Rd
Banfield Rd
Water Country Water Park
Sagamore Rd
Odiorne Point State Park
Ocean Rd
Lang Rd
Wallis Rd
Ocean Blvd
Acorn Acres
Breakfast Hill Golf Club
Washington Rd
Rye
Coakley Landfill
1A
1
95

MEMORANDUM

To: Gerardo Millan-Ramos
From: Courtney Carroll, Richard Sugatt
Date: January 31, 2017
RE: Site-specific Screening Levels for sediment and surface for child and adult recreators for PFOS, PFOA, and PFBS at the Coakley Landfill NPL Site

The purpose of this memorandum is to provide surface water/sediment screening levels (SLs) developed by EPA Region I for Perfluorooctane sulfonate (PFOS), Perfluorooctanoic acid (PFOA), and Perfluorobutane sulfonate (PFBS) for the Coakley Landfill NPL site. The SLs will be used to compare the results of samples collected by Conservation Law Foundation in a small stream associated with the Coakley Landfill (CL) NPL site. This stream flows by the landfill and then flows through a residential area. The stream is too shallow for swimming; therefore, only wading is realistic. The SLs were developed for the sediment and surface water exposure routes for child and adult recreators who might wade in the stream. The SLs will also be used for any future surface water sampling that may be done in relation to the Coakley site, assuming the exposure assumptions used herein are consistent with such future exposure scenarios.

EPA issued final Drinking Water Health Advisories (HAs) for PFOA and PFOS on May 19, 2016. The oral Reference Dose (RfD) from the HA was used to develop SLs for potential risks from exposure to surface water and sediment to recreational receptors wading in surface water near the CL. The final HAs established a chronic oral Reference Dose (RfD) of (2E-05 mg/kg/day) for both PFOS and PFOA. PFBS has a chronic oral RfD of 2E-02 mg/kg/day based on an EPA Provisional Peer Reviewed Toxicity Value (PPRTV).

Screening Levels were developed as the concentration associated with a Hazard Index (HI) of 0.1. Screening Levels are used to identify chemicals of potential concern in a human health risk assessment. They are set at a HI of 0.1 at sites that have multiple chemicals to ensure that multiple chemicals contributing to non-cancer risks are included in the risk assessment. If there is only one non-carcinogenic chemical at a site, it would be appropriate to set the screening level at HI = 1. Since there are multiple chemicals at the CL, including PFOS, PFOA, and PFBS, the SLs should be set at HI = 0.1 for each chemical.

The SLs were calculated using the EPA Regional Screening Level (RSL) calculator using the recreator scenario, which calculates SLs for soil/sediment and surface water in a site-specific mode. This scenario uses default exposure assumptions for all exposure parameters except exposure frequency (days/year), exposure events per day, and exposure time per event (hour/event). The calculator requires that values for these three exposure parameters be entered as "site-specific" values. PFOS, PFOA, and PFBS are included in the chemical selection list in the calculator; therefore, all other default exposure parameters were included in the calculations. The exposure frequency was set at either 45 days per year or 120 days per year to reflect a mid-range and maximum reasonable exposure frequency, respectively about 3 or 7 days/week from May through August. The other two exposure parameters were set at 1 event per day and 1 hour per event for both exposure frequencies.

The SLs for each chemical are summarized in Table 1. The exposure assumptions are summarized in Table 2. A copy of the calculator output is attached.

Table 1. Screening Levels for PFOS, PFOA, PFBS in sediment and surface water for child and adult recreator - Coakley Landfill

| | | | Screening Level (HQ = 0.1) | |
|---|---|---|---|---|
| Chemicals | Medium | Receptor | EF =45 days/year | EF = 120 days/year |
| PFOA | Surface Water | Child Recreator | 2.03 ug/L | 0.76 ug/L |
| PFOA | Sediment | Child Recreator | 0.98 mg/kg | 0.369 mg/kg |
| PFOA | Surface Water | Adult Recreator | 18.3 ug/L | 6.85 ug/L |
| PFOA | Sediment | Adult Recreator | 9.12 mg/kg | 3.42 mg/kg |
| PFOS | Surface Water | Child Recreator | 2.03 ug/L | 0.760 ug/L |
| PFOS | Sediment | Child Recreator | 0.98 mg/kg | 0.369 mg/kg |
| PFOS | Surface Water | Adult Recreator | 18.3 ug/L | 6.85 ug/L |
| PFOS | Sediment | Adult Recreator | 9.12 mg/kg | 3.42 mg/kg |
| PFBS | Surface Water | Child Recreator | 2030 ug/L | 760 ug/L |
| PFBS | Sediment | Child Recreator | 983 mg/kg | 369 mg/kg |
| PFBS | Surface Water | Adult Recreator | 18300 ug/L | 6850 ug/L |
| PFBS | Sediment | Adult Recreator | 9120 mg/kg | 3420 mg/kg |

Screening levels calculated with EPA Regional Screening Level calculator

HQ = Hazard Quotient

EF = Exposure Frequency

PFBS = Perfluorobutane Sulfonate

PFOA = Perfluorooctanoic Acid

PFOS = Perfluorooctane Sulfonate

Table 2. Exposure Assumptions for adult and child recreator for PFOS, PFOA, PFBS in surface water and sediment - Coakley Landfill

| Exposure Parameter | Applicable Media | Units | Value | |
|---|---|---|---|---|
| | | | Child | Adult |
| Exposure Frequency | sw, sed | days/yr | 45 or 120 | 45 or 120 |
| Exposure Duration | sw, sed | years | 6 | 20 |
| Body Weight | sw,sed | kg | 15 | 80 |
| Exposure Time (surface water) | sw | hr/event | 1 | 1 |
| Exposure Time (sediment) | sed | hr/day | 1 | 1 |
| Skin Adherence Factor | sed | $mg/cm^2$ | 0.2 | 0.07 |
| Exposure Events | sw | ev/day | 1 | 1 |
| Skin Surface Area | sw | $cm^2$ | 2373 | 6032 |
| Sediment Intake Rate | sed | mg/day | 200 | 100 |
| Water Intake Rate | sw | L/hr | 0.12 | 0.071 |

sw = surface water
sed = sediment
PFBS = Perfluorobutane Sulfonate
PFOA = Perfluorooctanoic Acid
PFOS = Perfluorooctane Sulfonate

# Site-specific



**Recreator Equation Inputs for Soil**

45 day per year Recreator

| Variable | Value |
|---|---|
| TR (target cancer risk) unitless | 1.0E-6 |
| THQ (target hazard quotient) unitless | 1 |
| $SA_{rec-c}$ (skin surface area - child) $cm^2$/day | 2373 |
| $SA_{rec-a}$ (skin surface area - adult) $cm^2$/day | 6032 |
| $SA_{0-2}$ (skin surface area - mutagenic) $cm^2$/day | 2373 |
| $SA_{2-6}$ (skin surface area - mutagenic) $cm^2$/day | 2373 |
| $SA_{6-16}$ (skin surface area - mutagenic) $cm^2$/day | 6032 |
| $SA_{16-30}$ (skin surface area - mutagenic) $cm^2$/day | 6032 |
| LT (lifetime - recreator) year | 70 |
| $IFS_{rec-adj}$ (age-adjusted soil ingestion factor) mg/kg | 4725 |
| $DFS_{rec-adj}$ (age-adjusted soil dermal factor) mg/kg | 13293 |
| $IFSM_{rec-adj}$ (mutagenic age-adjusted soil ingestion factor) mg/kg | 21450 |
| $DFSM_{rec-adj}$ (mutagenic age-adjusted soil dermal factor) mg/kg | 55062 |
| $EF_{0-2}$ (exposure frequency) day/year | 45 |
| $EF_{2-6}$ (exposure frequency) day/year | 45 |
| $EF_{6-16}$ (exposure frequency) day/year | 45 |
| $EF_{16-30}$ (exposure frequency) day/year | 45 |
| $EF_{rec-c}$ (exposure frequency - child) day/year | 45 |
| $EF_{rec-a}$ (exposure frequency - adult) day/year | 45 |
| $EF_{rec}$ (exposure frequency - recreator) day/year | 45 |
| $IRS_{0-2}$ (soil intake rate) mg/day | 200 |
| $IRS_{2-6}$ (soil intake rate) mg/day | 200 |
| $IRS_{6-16}$ (soil intake rate) mg/day | 100 |
| $IRS_{16-30}$ (soil intake rate) mg/day | 100 |
| $IRS_{rec-c}$ (soil intake rate - child) mg/day | 200 |
| $IRS_{rec-a}$ (soil intake rate - adult) mg/day | 100 |
| $ED_{0-2}$ (exposure duration) year | 2 |
| $ED_{2-6}$ (exposure duration) year | 4 |
| $ED_{6-16}$ (exposure duration) year | 10 |
| $ED_{16-30}$ (exposure duration) year | 10 |
| $ED_{rec-c}$ (exposure duration - child) year | 6 |
| $ED_{rec-a}$ (exposure duration - adult) year | 20 |
| $ED_{rec}$ (exposure duration - recreator) year | 26 |

# Site-specific



**Recreator Equation Inputs for Soil**

| Variable | Value |
|---|---|
| $ET_{0-2}$ (exposure time) hr/day | 1 |
| $ET_{2-6}$ (exposure time) hr/day | 1 |
| $ET_{6-16}$ (exposure time) hr/day | 1 |
| $ET_{16-30}$ (exposure time) hr/day | 1 |
| $ET_{rec-c}$ (exposure time - child) hr/day | 1 |
| $ET_{rec-a}$ (exposure time - adult) hr/day | 1 |
| $ET_{rec}$ (exposure time - recreator) hr/day | 1 |
| $BW_{0-2}$ (body weight) kg | 15 |
| $BW_{2-6}$ (body weight) kg | 15 |
| $BW_{6-16}$ (body weight) kg | 80 |
| $BW_{16-30}$ (body weight) kg | 80 |
| $BW_{rec-c}$ (body weight - child) kg | 15 |
| $BW_{rec-a}$ (body weight - adult) kg | 80 |
| $AF_{0-2}$ (skin adherence factor) mg/cm $^2$ | 0.2 |
| $AF_{2-6}$ (skin adherence factor) mg/cm $^2$ | 0.2 |
| $AF_{6-16}$ (skin adherence factor) mg/cm $^2$ | 0.07 |
| $AF_{16-30}$ (skin adherence factor) mg/cm $^2$ | 0.07 |
| $AF_{rec-c}$ (skin adherence factor - child) mg/cm $^2$ | 0.2 |
| $AF_{rec-a}$ (skin adherence factor - adult) mg/cm $^2$ | 0.07 |
| $City_{PEF}$ (Climate Zone) Selection | |
| $A_s$ (acres) | .5 |
| $Q/C_{wp}$ (inverse of the ratio of the geometric mean air concentration to the emission flu | 93.77 |
| PEF (particulate emission factor) m $^3$/kg | 1359344438 |
| A (PEF Dispersion Constant) | 16.2302 |
| B (PEF Dispersion Constant) | 18.7762 |
| C (PEF Dispersion Constant) | 216.108 |
| V (fraction of vegetative cover) unitless | 0.5 |
| $U_m$ (mean annual wind speed) m/s | 4.69 |
| $U_t$ (equivalent threshold value) | 11.32 |
| F(x) (function dependant on $U_m/U_t$) unitless | 0.194 |
| $City_{VF}$ (Climate Zone) Selection | |
| $A_s$ (acres) | .5 |
| $Q/C_{vol}$ (inverse of the ratio of the geometric mean air concentration to the emission flu | 68.18 |

Output generated 30JAN2017:10:11:05

# Site-specific



**Recreator Equation Inputs for Soil**

| Variable | Value |
|---|---|
| foc (fraction organic carbon in soil) g/g | 0.006 |
| $p_b$ (dry soil bulk density) g/cm $^3$ | 1.5 |
| $p_s$ (soil particle density) g/cm $^3$ | 2.65 |
| n (total soil porosity) $L_{pore}/L_{soil}$ | 0.43396 |
| $_a$ (air-filled soil porosity) $L_{air}/L_{soil}$ | 0.28396 |
| $_w$ (water-filled soil porosity) $L_{water}/L_{soil}$ | 0.15 |
| T (exposure interval) s | 819936000 |
| A (VF Dispersion Constant) | 11.911 |
| B (VF Dispersion Constant) | 18.4385 |
| C (VF Dispersion Constant) | 209.7845 |
| $City_{VF\ mass\text{-}loading}$ (Climate Zone) Selection | |
| $VF_{ml}$ (volitization factor - mass-limit) m $^3$/kg | . |
| $Q/C_{vol}$ (inverse of the ratio of the geometric mean air concentration to the emission fl | 68.18365 |
| $A_c$ (acres) | .5 |
| T (exposure interval) yr | 26 |
| $d_c$ (depth of source) m | . |
| $p_b$ (dry soil bulk density) g/cm $^3$ | 1.5 |
| A (VF Dispersion Constant - Mass Limit) | 11.911 |
| B (VF Dispersion Constant - Mass Limit) | 18.4385 |
| C (VF Dispersion Constant - Mass Limit) | 209.7845 |

# Site-specific



**Recreator Screening Levels (RSL) for Soil**

Key: I = IRIS; P = PPRTV; D = DWSHA; O = OPP; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; F = See FAQ; J = New Jersey; E = see user guide Section 2.3.5; L = see user guide on lead; M = mutagen; S = see user guide Section 5; V = volatile; R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide)

| Chemical | CAS Number | Mutagen? | VOC? | Ingestion SF (mg/kg-day) $^{-1}$ | SFO Ref | Inhalation Unit Risk (ug/m $^3$) $^{-1}$ | IUR Ref | Chronic RfD (mg/kg-day) | Chronic RfD Ref | Chronic RfC (mg/m $^3$) | Chronic RfC Ref | GIABS | ABS | RBA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutane Sulfonate (PFBS) | 375-73-5 | No | No | - | | - | | 2.00E-02 | U | - | | 1 | 0.1 | 1 |
| Perfluorooctane Sulfonate (PFOS) | 1763-23-1 | No | No | - | | - | | 2.00E-05 | U | - | | 1 | 0.1 | 1 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | No | No | 7.00E-02 | U | - | | 2.00E-05 | U | - | | 1 | 0.1 | 1 |

| Chemical | Volatilization Factor (m $^3$/kg) | Henry's Law Constant (atm-m $^3$/mol) | wsol | K<sub>oc</sub> (cm3/g) | Soil Saturation Concentration (mg/kg) | Particulate Emission Factor (m $^3$/kg) | Ingestion SL TR=1.0E-6 (mg/kg) | Dermal SL TR=1.0E-6 (mg/kg) | Inhalation SL TR=1.0E-6 (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutane Sulfonate (PFBS) | - | - | 5.66E+04 | 6.17E+01 | - | 1.36E+09 | - | - | - |
| Perfluorooctane Sulfonate (PFOS) | - | - | 6.80E+02 | 3.72E+02 | - | 1.36E+09 | - | - | - |
| Perfluorooctanoic acid (PFOA) | - | - | 9.50E+03 | 1.15E+02 | - | 1.36E+09 | 7.72E+01 | 2.75E+02 | - |

| Chemical | Carcinogenic SL TR=1.0E-6 (mg/kg) | Ingestion SL Child THQ=1 (mg/kg) | Dermal SL Child THQ=1 (mg/kg) | Inhalation SL Child THQ=1 (mg/kg) | Noncarcinogenic SL Child THI=1 (mg/kg) | Ingestion SL Adult THQ=1 (mg/kg) | Dermal SL Adult THQ=1 (mg/kg) | Inhalation SL Adult THQ=1 (mg/kg) | Noncarcinogenic SL Adult THI=1 (mg/kg) | Screening Level (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutane Sulfonate (PFBS) | - | 1.22E+04 | 5.13E+04 | - | 9.83E+03 | 1.30E+05 | 3.07E+05 | - | 9.12E+04 | 9.83E+03 nc |
| Perfluorooctane Sulfonate (PFOS) | - | 1.22E+01 | 5.13E+01 | - | 9.83E+00 | 1.30E+02 | 3.07E+02 | - | 9.12E+01 | 9.83E+00 nc |
| Perfluorooctanoic acid (PFOA) | 6.03E+01 | 1.22E+01 | 5.13E+01 | - | 9.83E+00 | 1.30E+02 | 3.07E+02 | - | 9.12E+01 | 9.83E+00 nc |

# Site-specific



**Recreator Equation Inputs for Surface Water**

| Variable | Value |
|---|---|
| TR (target cancer risk) unitless | 1.0E-6 |
| THQ (target hazard quotient) unitless | 1 |
| $ED_{rec}$ (exposure duration - recreator) year | 26 |
| $ED_{rec-c}$ (exposure duration - child) year | 6 |
| $ED_{rec-a}$ (exposure duration - adult) year | 20 |
| $ED_{0-2}$ (mutagenic exposure duration) year | 2 |
| $ED_{2-6}$ (mutagenic exposure duration) year | 4 |
| $ED_{6-16}$ (mutagenic exposure duration) year | 10 |
| $ED_{16-30}$ (mutagenic exposure duration) year | 10 |
| THQ (target hazard quotient) unitless | 1 |
| LT (lifetime - recreator) year | 70 |
| EF (exposure frequency) day/year | 45 |
| $EF_{rec-c}$ (exposure frequency - child) day/year | 45 |
| $EF_{rec-a}$ (exposure frequency - adult) day/year | 45 |
| $EF_{0-2}$ (mutagenic exposure frequency) day/year | 45 |
| $EF_{2-6}$ (mutagenic exposure frequency) day/year | 45 |
| $EF_{6-16}$ (mutagenic exposure frequency) day/year | 45 |
| $EF_{16-30}$ (mutagenic exposure frequency) day/year | 45 |
| $ET_{rec-adj}$ (age-adjusted exposure time) hour/event | 1 |
| $ET_{rec-madj}$ (mutagenic age-adjusted exposure time) hour/event | 1 |
| $ET_{rec-a}$ (exposure time - adult) hour/event | 1 |
| $ET_{rec-c}$ (exposure time - child) hour/event | 1 |
| $ET_{0-2}$ (mutagenic exposure time) hour/event | 1 |
| $ET_{2-6}$ (mutagenic exposure time) hour/event | 1 |
| $ET_{6-16}$ (mutagenic exposure time) hour/event | 1 |
| $ET_{16-30}$ (mutagenic exposure time) hour/event | 1 |
| $EV_{rec-c}$ (child) events/day | 1 |
| $EV_{rec-a}$ (adult) events/day | 1 |
| $EV_{0-2}$ (mutagenic) events/day | 1 |
| $EV_{2-6}$ (mutagenic) events/day | 1 |
| $EV_{6-16}$ (mutagenic) events/day | 1 |
| $EV_{16-30}$ (mutagenic) events/day | 1 |
| $BW_{rec-c}$ (body weight - child) kg | 15 |
| $BW_{rec-a}$ (body weight - adult) kg | 80 |

# Site-specific



**Recreator Equation Inputs for Surface Water**

| Variable | Value |
|---|---|
| $BW_{0-2}$ (mutagenic body weight) kg | 15 |
| $BW_{2-6}$ (mutagenic body weight) kg | 15 |
| $BW_{6-16}$ (mutagenic body weight) kg | 80 |
| $BW_{16-30}$ (mutagenic body weight) kg | 80 |
| $SA_{rec-c}$ (skin surface area - child) $cm^2$ | 6365 |
| $SA_{rec-a}$ (skin surface area - adult) $cm^2$ | 6365 |
| $SA_{0-2}$ (mutagenic skin surface area) $cm^2$ | 6365 |
| $SA_{2-6}$ (mutagenic skin surface area) $cm^2$ | 6365 |
| $SA_{6-16}$ (mutagenic skin surface area) $cm^2$ | 19652 |
| $SA_{16-30}$ (mutagenic skin surface area) $cm^2$ | 19652 |
| $IFW_{rec-adj}$ (age-adjusted water intake rate) L/kg | 2.959 |
| $IFWM_{rec-adj}$ (mutagenic age-adjusted water intake rate) L/kg | 13.117 |
| $DFW_{rec-adj}$ (age-adjusted dermal factor) $cm^2$-event/kg | 335655 |
| $DFWM_{rec-adj}$ (mutagenic age-adjusted dermal factor) $cm^2$-event/kg | 1053210 |
| $IRW_{rec-c}$ (water intake rate - child) L/hr | 0.12 |
| $IRW_{rec-a}$ (water intake rate - adult) L/hr | 0.071 |
| $IRW_{0-2}$ (mutagenic water intake rate) L/hr | 0.12 |
| $IRW_{2-6}$ (mutagenic water intake rate) L/hr | 0.12 |
| $IRW_{6-16}$ (mutagenic water intake rate) L/hr | 0.071 |
| $IRW_{16-30}$ (mutagenic water intake rate) L/hr | 0.071 |
| $l_{sc}$ (apparent thickness of stratum corneum) cm | 0.001 |

# Site-specific



**Recreator Screening Levels (RSL) for Surface Water**

Key: I = IRIS; P = PPRTV; D = DWSHA; O = OPP; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; F = See FAQ; J = New Jersey; E = see user guide Section 2.3.5; L = see user guide on lead; M = mutagen; S = see user guide Section 5; V = volatile; R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide)

| Chemical | CAS Number | Mutagen? | VOC? | Chemical Type | Ingestion SF (mg/kg-day) $^{-1}$ | SFO Ref | Chronic RfD (mg/kg-day) | Chronic RfD Ref | Chronic RfC (mg/m $^3$) | Chronic RfC Ref | RAGSe GIABS (unitless) | $K_p$ (cm/hr) | MW | FA (unitless) | In EPD? | $DA_{event(ca)}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutane Sulfonate (PFBS) | 375-73-5 | No | No | Organics | - | | 2.00E-02 | U | - | | 1 | - | 300 | 0 | Yes | - |
| Perfluorooctane Sulfonate (PFOS) | 1763-23-1 | No | No | Organics | - | | 2.00E-05 | U | - | | 1 | - | 500 | 0 | No | - |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | No | No | Organics | 7.00E-02 | U | 2.00E-05 | U | - | | 1 | - | 414 | 0 | No | - |

| Chemical | $DA_{event(nc\ child)}$ | $DA_{event(nc\ adult)}$ | Ingestion SL TR=1.0E-6 (ug/L) | Dermal SL TR=1.0E-6 (ug/L) | Carcinogenic SL TR=1.0E-6 (ug/L) | Ingestion SL (Child) THQ=1 (ug/L) | Dermal SL (Child) THQ=1 (ug/L) | Noncarcinogenic SL (Child) THQ=1 (ug/L) | Ingestion SL (Adult) THQ=1 (ug/L) | Dermal SL (Adult) THQ=1 (ug/L) | Noncarcinogenic SL (Adult) THQ=1 (ug/L) | Screening Level (ug/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutane Sulfonate (PFBS) | 0.382299 | 0.6603795 | - | - | - | 2.03E+04 | - | 2.03E+04 | 1.83E+05 | - | 1.83E+05 | 2.03E+04 nc |
| Perfluorooctane Sulfonate (PFOS) | - | - | - | - | - | 2.03E+01 | - | 2.03E+01 | 1.83E+02 | - | 1.83E+02 | 2.03E+01 nc |
| Perfluorooctanoic acid (PFOA) | - | - | 1.23E+02 | - | 1.23E+02 | 2.03E+01 | - | 2.03E+01 | 1.83E+02 | - | 1.83E+02 | 2.03E+01 nc |

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# Site-specific



**Recreator Equation Inputs for Soil**

120 day per year Recreator

| Variable | Value |
|---|---|
| TR (target cancer risk) unitless | 1.0E-6 |
| THQ (target hazard quotient) unitless | 1 |
| $SA_{rec-c}$ (skin surface area - child) $cm^2$/day | 2373 |
| $SA_{rec-a}$ (skin surface area - adult) $cm^2$/day | 6032 |
| $SA_{0-2}$ (skin surface area - mutagenic) $cm^2$/day | 2373 |
| $SA_{2-6}$ (skin surface area - mutagenic) $cm^2$/day | 2373 |
| $SA_{6-16}$ (skin surface area - mutagenic) $cm^2$/day | 6032 |
| $SA_{16-30}$ (skin surface area - mutagenic) $cm^2$/day | 6032 |
| LT (lifetime - recreator) year | 70 |
| $IFS_{rec-adj}$ (age-adjusted soil ingestion factor) mg/kg | 12600 |
| $DFS_{rec-adj}$ (age-adjusted soil dermal factor) mg/kg | 35448 |
| $IFSM_{rec-adj}$ (mutagenic age-adjusted soil ingestion factor) mg/kg | 57200 |
| $DFSM_{rec-adj}$ (mutagenic age-adjusted soil dermal factor) mg/kg | 146832 |
| $EF_{0-2}$ (exposure frequency) day/year | 120 |
| $EF_{2-6}$ (exposure frequency) day/year | 120 |
| $EF_{6-16}$ (exposure frequency) day/year | 120 |
| $EF_{16-30}$ (exposure frequency) day/year | 120 |
| $EF_{rec-c}$ (exposure frequency - child) day/year | 120 |
| $EF_{rec-a}$ (exposure frequency - adult) day/year | 120 |
| $EF_{rec}$ (exposure frequency - recreator) day/year | 120 |
| $IRS_{0-2}$ (soil intake rate) mg/day | 200 |
| $IRS_{2-6}$ (soil intake rate) mg/day | 200 |
| $IRS_{6-16}$ (soil intake rate) mg/day | 100 |
| $IRS_{16-30}$ (soil intake rate) mg/day | 100 |
| $IRS_{rec-c}$ (soil intake rate - child) mg/day | 200 |
| $IRS_{rec-a}$ (soil intake rate - adult) mg/day | 100 |
| $ED_{0-2}$ (exposure duration) year | 2 |
| $ED_{2-6}$ (exposure duration) year | 4 |
| $ED_{6-16}$ (exposure duration) year | 10 |
| $ED_{16-30}$ (exposure duration) year | 10 |
| $ED_{rec-c}$ (exposure duration - child) year | 6 |
| $ED_{rec-a}$ (exposure duration - adult) year | 20 |
| $ED_{rec}$ (exposure duration - recreator) year | 26 |

# Site-specific



**Recreator Equation Inputs for Soil**

| Variable | Value |
|---|---|
| $ET_{0-2}$ (exposure time) hr/day | 1 |
| $ET_{2-6}$ (exposure time) hr/day | 1 |
| $ET_{6-16}$ (exposure time) hr/day | 1 |
| $ET_{16-30}$ (exposure time) hr/day | 1 |
| $ET_{rec-c}$ (exposure time - child) hr/day | 1 |
| $ET_{rec-a}$ (exposure time - adult) hr/day | 1 |
| $ET_{rec}$ (exposure time - recreator) hr/day | 1 |
| $BW_{0-2}$ (body weight) kg | 15 |
| $BW_{2-6}$ (body weight) kg | 15 |
| $BW_{6-16}$ (body weight) kg | 80 |
| $BW_{16-30}$ (body weight) kg | 80 |
| $BW_{rec-c}$ (body weight - child) kg | 15 |
| $BW_{rec-a}$ (body weight - adult) kg | 80 |
| $AF_{0-2}$ (skin adherence factor) mg/cm $^2$ | 0.2 |
| $AF_{2-6}$ (skin adherence factor) mg/cm $^2$ | 0.2 |
| $AF_{6-16}$ (skin adherence factor) mg/cm $^2$ | 0.07 |
| $AF_{16-30}$ (skin adherence factor) mg/cm $^2$ | 0.07 |
| $AF_{rec-c}$ (skin adherence factor - child) mg/cm $^2$ | 0.2 |
| $AF_{rec-a}$ (skin adherence factor - adult) mg/cm $^2$ | 0.07 |
| $City_{PEF}$ (Climate Zone) Selection | |
| $A_s$ (acres) | .5 |
| $Q/C_{wp}$ (inverse of the ratio of the geometric mean air concentration to the emission flu | 93.77 |
| PEF (particulate emission factor) m $^3$/kg | 1359344438 |
| A (PEF Dispersion Constant) | 16.2302 |
| B (PEF Dispersion Constant) | 18.7762 |
| C (PEF Dispersion Constant) | 216.108 |
| V (fraction of vegetative cover) unitless | 0.5 |
| $U_m$ (mean annual wind speed) m/s | 4.69 |
| $U_t$ (equivalent threshold value) | 11.32 |
| F(x) (function dependant on $U_m/U_t$) unitless | 0.194 |
| $City_{VF}$ (Climate Zone) Selection | |
| $A_s$ (acres) | .5 |
| $Q/C_{vol}$ (inverse of the ratio of the geometric mean air concentration to the emission flu | 68.18 |

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# Site-specific



**Recreator Equation Inputs for Soil**

| Variable | Value |
|---|---|
| foc (fraction organic carbon in soil) g/g | 0.006 |
| $p_b$ (dry soil bulk density) g/cm $^3$ | 1.5 |
| $p_s$ (soil particle density) g/cm $^3$ | 2.65 |
| n (total soil porosity) $L_{pore}/L_{soil}$ | 0.43396 |
| $_a$ (air-filled soil porosity) $L_{air}/L_{soil}$ | 0.28396 |
| $_w$ (water-filled soil porosity) $L_{water}/L_{soil}$ | 0.15 |
| T (exposure interval) s | 819936000 |
| A (VF Dispersion Constant) | 11.911 |
| B (VF Dispersion Constant) | 18.4385 |
| C (VF Dispersion Constant) | 209.7845 |
| $City_{VF\ mass\text{-}loading}$ (Climate Zone) Selection | |
| $VF_{ml}$ (volitization factor - mass-limit) m $^3$/kg | . |
| $Q/C_{vol}$ (inverse of the ratio of the geometric mean air concentration to the emission fl | 68.18365 |
| $A_c$ (acres) | .5 |
| T (exposure interval) yr | 26 |
| $d_c$ (depth of source) m | . |
| $p_b$ (dry soil bulk density) g/cm $^3$ | 1.5 |
| A (VF Dispersion Constant - Mass Limit) | 11.911 |
| B (VF Dispersion Constant - Mass Limit) | 18.4385 |
| C (VF Dispersion Constant - Mass Limit) | 209.7845 |

# Site-specific



**Recreator Screening Levels (RSL) for Soil**

Key: I = IRIS; P = PPRTV; D = DWSHA; O = OPP; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; F = See FAQ; J = New Jersey; E = see user guide Section 2.3.5; L = see user guide on lead; M = mutagen; S = see user guide Section 5; V = volatile; R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide)

| Chemical | CAS Number | Mutagen? | VOC? | Ingestion SF (mg/kg-day) $^{-1}$ | SFO Ref | Inhalation Unit Risk (ug/m $^3$) $^{-1}$ | IUR Ref | Chronic RfD (mg/kg-day) | Chronic RfD Ref | Chronic RfC (mg/m $^3$) | Chronic RfC Ref | GIABS | ABS | RBA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutane Sulfonate (PFBS) | 375-73-5 | No | No | - | | - | | 2.00E-02 | U | - | | 1 | 0.1 | 1 |
| Perfluorooctane Sulfonate (PFOS) | 1763-23-1 | No | No | - | | - | | 2.00E-05 | U | - | | 1 | 0.1 | 1 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | No | No | 7.00E-02 | U | - | | 2.00E-05 | U | - | | 1 | 0.1 | 1 |

| Chemical | Volatilization Factor (m $^3$/kg) | Henry's Law Constant (atm-m $^3$/mol) | wsol | K<sub>oc</sub> (cm3/g) | Soil Saturation Concentration (mg/kg) | Particulate Emission Factor (m $^3$/kg) | Ingestion SL TR=1.0E-6 (mg/kg) | Dermal SL TR=1.0E-6 (mg/kg) | Inhalation SL TR=1.0E-6 (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutane Sulfonate (PFBS) | - | - | 5.66E+04 | 6.17E+01 | - | 1.36E+09 | - | - | - |
| Perfluorooctane Sulfonate (PFOS) | - | - | 6.80E+02 | 3.72E+02 | - | 1.36E+09 | - | - | - |
| Perfluorooctanoic acid (PFOA) | - | - | 9.50E+03 | 1.15E+02 | - | 1.36E+09 | 2.90E+01 | 1.03E+02 | - |

| Chemical | Carcinogenic SL TR=1.0E-6 (mg/kg) | Ingestion SL Child THQ=1 (mg/kg) | Dermal SL Child THQ=1 (mg/kg) | Inhalation SL Child THQ=1 (mg/kg) | Noncarcinogenic SL Child THI=1 (mg/kg) | Ingestion SL Adult THQ=1 (mg/kg) | Dermal SL Adult THQ=1 (mg/kg) | Inhalation SL Adult THQ=1 (mg/kg) | Noncarcinogenic SL Adult THI=1 (mg/kg) | Screening Level (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutane Sulfonate (PFBS) | - | 4.56E+03 | 1.92E+04 | - | 3.69E+03 | 4.87E+04 | 1.15E+05 | - | 3.42E+04 | 3.69E+03 nc |
| Perfluorooctane Sulfonate (PFOS) | - | 4.56E+00 | 1.92E+01 | - | 3.69E+00 | 4.87E+01 | 1.15E+02 | - | 3.42E+01 | 3.69E+00 nc |
| Perfluorooctanoic acid (PFOA) | 2.26E+01 | 4.56E+00 | 1.92E+01 | - | 3.69E+00 | 4.87E+01 | 1.15E+02 | - | 3.42E+01 | 3.69E+00 nc |

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# Site-specific



**Recreator Equation Inputs for Surface Water**

| Variable | Value |
|---|---|
| TR (target cancer risk) unitless | 1.0E-6 |
| THQ (target hazard quotient) unitless | 1 |
| $ED_{rec}$ (exposure duration - recreator) year | 26 |
| $ED_{rec-c}$ (exposure duration - child) year | 6 |
| $ED_{rec-a}$ (exposure duration - adult) year | 20 |
| $ED_{0-2}$ (mutagenic exposure duration) year | 2 |
| $ED_{2-6}$ (mutagenic exposure duration) year | 4 |
| $ED_{6-16}$ (mutagenic exposure duration) year | 10 |
| $ED_{16-30}$ (mutagenic exposure duration) year | 10 |
| THQ (target hazard quotient) unitless | 1 |
| LT (lifetime - recreator) year | 70 |
| EF (exposure frequency) day/year | 120 |
| $EF_{rec-c}$ (exposure frequency - child) day/year | 120 |
| $EF_{rec-a}$ (exposure frequency - adult) day/year | 120 |
| $EF_{0-2}$ (mutagenic exposure frequency) day/year | 120 |
| $EF_{2-6}$ (mutagenic exposure frequency) day/year | 120 |
| $EF_{6-16}$ (mutagenic exposure frequency) day/year | 120 |
| $EF_{16-30}$ (mutagenic exposure frequency) day/year | 120 |
| $ET_{rec-adj}$ (age-adjusted exposure time) hour/event | 1 |
| $ET_{rec-madj}$ (mutagenic age-adjusted exposure time) hour/event | 1 |
| $ET_{rec-a}$ (exposure time - adult) hour/event | 1 |
| $ET_{rec-c}$ (exposure time - child) hour/event | 1 |
| $ET_{0-2}$ (mutagenic exposure time) hour/event | 1 |
| $ET_{2-6}$ (mutagenic exposure time) hour/event | 1 |
| $ET_{6-16}$ (mutagenic exposure time) hour/event | 1 |
| $ET_{16-30}$ (mutagenic exposure time) hour/event | 1 |
| $EV_{rec-c}$ (child) events/day | 1 |
| $EV_{rec-a}$ (adult) events/day | 1 |
| $EV_{0-2}$ (mutagenic) events/day | 1 |
| $EV_{2-6}$ (mutagenic) events/day | 1 |
| $EV_{6-16}$ (mutagenic) events/day | 1 |
| $EV_{16-30}$ (mutagenic) events/day | 1 |
| $BW_{rec-c}$ (body weight - child) kg | 15 |
| $BW_{rec-a}$ (body weight - adult) kg | 80 |

# Site-specific



**Recreator Equation Inputs for Surface Water**

| Variable | Value |
|---|---|
| $BW_{0-2}$ (mutagenic body weight) kg | 15 |
| $BW_{2-6}$ (mutagenic body weight) kg | 15 |
| $BW_{6-16}$ (mutagenic body weight) kg | 80 |
| $BW_{16-30}$ (mutagenic body weight) kg | 80 |
| $SA_{rec-c}$ (skin surface area - child) $cm^2$ | 6365 |
| $SA_{rec-a}$ (skin surface area - adult) $cm^2$ | 6365 |
| $SA_{0-2}$ (mutagenic skin surface area) $cm^2$ | 6365 |
| $SA_{2-6}$ (mutagenic skin surface area) $cm^2$ | 6365 |
| $SA_{6-16}$ (mutagenic skin surface area) $cm^2$ | 19652 |
| $SA_{16-30}$ (mutagenic skin surface area) $cm^2$ | 19652 |
| $IFW_{rec-adj}$ (age-adjusted water intake rate) L/kg | 7.89 |
| $IFWM_{rec-adj}$ (mutagenic age-adjusted water intake rate) L/kg | 34.98 |
| $DFW_{rec-adj}$ (age-adjusted dermal factor) $cm^2$-event/kg | 895080 |
| $DFWM_{rec-adj}$ (mutagenic age-adjusted dermal factor) $cm^2$-event/kg | 2808560 |
| $IRW_{rec-c}$ (water intake rate - child) L/hr | 0.12 |
| $IRW_{rec-a}$ (water intake rate - adult) L/hr | 0.071 |
| $IRW_{0-2}$ (mutagenic water intake rate) L/hr | 0.12 |
| $IRW_{2-6}$ (mutagenic water intake rate) L/hr | 0.12 |
| $IRW_{6-16}$ (mutagenic water intake rate) L/hr | 0.071 |
| $IRW_{16-30}$ (mutagenic water intake rate) L/hr | 0.071 |
| $l_{sc}$ (apparent thickness of stratum corneum) cm | 0.001 |

# Site-specific



**Recreator Screening Levels (RSL) for Surface Water**

Key: I = IRIS; P = PPRTV; D = DWSHA; O = OPP; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; F = See FAQ; J = New Jersey; E = see user guide Section 2.3.5; L = see user guide on lead; M = mutagen; S = see user guide Section 5; V = volatile; R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide)

| Chemical | CAS Number | Mutagen? | VOC? | Chemical Type | Ingestion SF (mg/kg-day)$^{-1}$ | SFO Ref | Chronic RfD (mg/kg-day) | Chronic RfD Ref | Chronic RfC (mg/m$^3$) | Chronic RfC Ref | RAGSe GIABS (unitless) | $K_p$ (cm/hr) | MW | FA (unitless) | In EPD? | $DA_{event(ca)}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutane Sulfonate (PFBS) | 375-73-5 | No | No | Organics | - | | 2.00E-02 | U | - | | 1 | - | 300 | 0 | Yes | - |
| Perfluorooctane Sulfonate (PFOS) | 1763-23-1 | No | No | Organics | - | | 2.00E-05 | U | - | | 1 | - | 500 | 0 | No | - |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | No | No | Organics | 7.00E-02 | U | 2.00E-05 | U | - | | 1 | - | 414 | 0 | No | - |

| Chemical | $DA_{event(nc\ child)}$ | $DA_{event(nc\ adult)}$ | Ingestion SL TR=1.0E-6 (ug/L) | Dermal SL TR=1.0E-6 (ug/L) | Carcinogenic SL TR=1.0E-6 (ug/L) | Ingestion SL (Child) THQ=1 (ug/L) | Dermal SL (Child) THQ=1 (ug/L) | Noncarcinogenic SL (Child) THQ=1 (ug/L) | Ingestion SL (Adult) THQ=1 (ug/L) | Dermal SL (Adult) THQ=1 (ug/L) | Noncarcinogenic SL (Adult) THQ=1 (ug/L) | Screening Level (ug/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutane Sulfonate (PFBS) | 0.1433621 | 0.2476423 | - | - | - | 7.60E+03 | - | 7.60E+03 | 6.85E+04 | - | 6.85E+04 | 7.60E+03 nc |
| Perfluorooctane Sulfonate (PFOS) | - | - | - | - | - | 7.60E+00 | - | 7.60E+00 | 6.85E+01 | - | 6.85E+01 | 7.60E+00 nc |
| Perfluorooctanoic acid (PFOA) | - | - | 4.63E+01 | - | 4.63E+01 | 7.60E+00 | - | 7.60E+00 | 6.85E+01 | - | 6.85E+01 | 7.60E+00 nc |

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