

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: FHR North Pole Refinery - On-Site Only

Completed By: R. Andresen
 Date Completed: updated May 21, 2012

Instructions: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.

| (1) Media | (2) Transport Mechanisms |
|---|--|
| <input checked="" type="checkbox"/> Surface Soil (0-2 ft bgs) | <input checked="" type="checkbox"/> Direct release to surface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to subsurface <i>check soil</i> <input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Runoff or erosion <i>check surface water</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____ |
| <input checked="" type="checkbox"/> Subsurface Soil (2-15 ft bgs) | <input checked="" type="checkbox"/> Direct release to subsurface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____ |
| <input checked="" type="checkbox"/> Ground-water | <input checked="" type="checkbox"/> Direct release to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Flow to surface water body <i>check surface water</i> <input checked="" type="checkbox"/> Flow to sediment <i>check sediment</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____ |
| <input checked="" type="checkbox"/> Surface Water | <input checked="" type="checkbox"/> Direct release to surface water <i>check surface water</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Sedimentation <i>check sediment</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____ |
| <input type="checkbox"/> Sediment | <input type="checkbox"/> Direct release to sediment <i>check sediment</i> <input type="checkbox"/> Resuspension, runoff, or erosion <i>check surface water</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____ |

| (3) Exposure Media | (4) Exposure Pathway/Route | (5) Current & Future Receptors | | | | | | | |
|---|--|-----------------------------------|----------------------------------|--|----------------------|-----------------------------------|-----------------------|-------|--|
| <input checked="" type="checkbox"/> soil | <input checked="" type="checkbox"/> Incidental Soil Ingestion <input checked="" type="checkbox"/> Dermal Absorption of Contaminants from Soil <input checked="" type="checkbox"/> Inhalation of Fugitive Dust | Residents (adults or children) | Commercial or Industrial workers | Site visitors, trespassers or recreational users | Construction workers | Farmers or subsistence harvesters | Subsistence consumers | Other | |
| <input checked="" type="checkbox"/> groundwater | <input checked="" type="checkbox"/> Ingestion of Groundwater <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Groundwater <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water | | | | I | C/F | | | |
| <input checked="" type="checkbox"/> air | <input checked="" type="checkbox"/> Inhalation of Outdoor Air <input checked="" type="checkbox"/> Inhalation of Indoor Air <input checked="" type="checkbox"/> Inhalation of Fugitive Dust | C/F | I | C/F | | | | | |
| <input checked="" type="checkbox"/> surface water | <input type="checkbox"/> Ingestion of Surface Water <input type="checkbox"/> Dermal Absorption of Contaminants in Surface Water <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water | | | | | | | | |
| <input checked="" type="checkbox"/> sediment | <input type="checkbox"/> Direct Contact with Sediment | | | | | | | | |
| <input checked="" type="checkbox"/> biota | <input type="checkbox"/> Ingestion of Wild or Farmed Foods | | | | | | | | |

FLINT HILLS RESOURCES ALASKA, LLC
 NORTH POLE REFINERY, NORTH POLE, ALASKA
HUMAN HEALTH RISK ASSESSMENT

**HUMAN HEALTH CONCEPTUAL
 SITE MODEL GRAPHIC FORM -
 ON SITE ONLY**

