

2E

Fire Report

Workspace: CONSEQUENCE MODEL_16FEB2021

Study: U100 HTDC

Equipment Item: U100

CONSEQUENCE MODEL_16FEB2021\U100 HTDC\U100 HTDC\U100

Material	1,2-DICHLOROETHANE	
East	-13662.3	m
North	4367.57	m

Scenario (Leak) : GROTE LEKKAGE

CONSEQUENCE MODEL_16FEB2021\U100 HTDC\U100 HTDC\U100\GROTE LEKKAGE

Weather: Category 5/D

Wind speed [m/s]	5
Pasquill stability	D neutral - little sun and high wind or overcast/windy night
Atmospheric temperature [degC]	9.85
Relative humidity [fraction]	0.7
Solar radiation flux [kW/m2]	0.5

Pool fire model results

Late pool fires are assumed to occur because of delayed ignition; the pool-fire centre is located at the rainout point, with the flame diameter taken as the maximum PVAP pool diameter.

INPUT DATA

Correlation Type: Thomas / Johnson

Surface type	Land
Pool fire elevation	0 m
Maximum exposure duration	20 s
Downwind distance of liquid rainout	0 m
Use two zone pool fire model	Yes

OUTPUT DATA



Pool fire diameter	51.0909	m
Downwind distance of pool fire centre	0	m
Pool fire flame length	39.5983	m
Angle between pool fire axis and vertical	41.7885	deg
Luminous flame emissive power	130	kW/m ²
Smoky flame emissive power	15.0349	kW/m ²
Ratio of luminous flame length to the total flame length	0.0571186	fraction
Total burn rate	82.0043	kg/s
Radiative fraction	0.183599	fraction

Radiation Intensity Ellipse Results

INPUT DATA

For ellipses 'observer direction' refers to whether inclination is 'fixed' or 'variable'. Orientation is always variable.

Observer direction	Variable	
Exposure duration	20	s
Height of interest	1	m

OUTPUT DATA

Radiation intensity

Incident radiation [kW/m ²]	Lethality [%]	View factor	Probit	Dose [(W/m ²) [^] Probit N.s]	Hazard information	Ellipse half-length [m]	Ellipse half-width [m]	Ellipse centre downwind distance [m]	Effect downwind distance [m]	Ellipse area [m ²]
3	0	0.0230769	-1.38321	865,119	-	64.1001	66.042	10.7412	74.8413	13299.3
15	18.6788	0.115385	4.1102	7,396,265	-	32.8984	35.2906	1.40058	35.5022	3647.4
35	97.7371	0.269231	7.00224	22,889,480	-	28.3173	29.5905	0.629002	29.6698	2632.42

Radiation v Distance Results



INPUT DATA

Maximum distance	74.8413	m
Angle from wind direction	0	deg
Observer direction	Variable	
Height of interest	1	m

OUTPUT DATA

Downwind distance [m]	Maximum incident radiation [kW/m2]	Lethality level [fraction]
0	130	1
1.52737	130	1
3.05475	130	1
4.58212	130	1
6.10949	130	1
7.63687	130	1
9.16424	130	1
10.6916	130	1
12.219	130	1
13.7464	130	1
15.2737	130	1
16.8011	130	1
18.3285	130	1
19.8559	130	1
21.3832	130	1
22.9106	130	1
24.438	130	1
25.9653	130	1
27.4927	77.7696	0.999999
29.0201	34.1581	0.972516
30.5475	23.6206	0.745391
32.0748	18.7436	0.44855

33.6022	15.98	0.250225
35.1296	14.0675	0.133743
36.657	12.7084	0.0727416
38.1843	11.5979	0.0385494
39.7117	10.7553	0.0214224
41.2391	10.0234	0.0117329
42.7665	9.42841	0.00666847
44.2938	8.90258	0.00378673
45.8212	8.4673	0.00224429
47.3486	8.0511	0.00129065
48.8759	7.71077	0.00078599
50.4033	7.37103	0.000458464
51.9307	7.09377	0.000284788
53.4581	6.78158	0.000159531
54.9854	6.44516	8.06618E-05
56.5128	6.10866	3.81141E-05
58.0402	5.77822	1.69355E-05
59.5676	5.45727	7.0991E-06
61.0949	5.14797	2.81424E-06
62.6223	4.85177	1.05754E-06
64.1497	4.56962	3.77677E-07
65.6771	4.30204	1.28542E-07
67.2044	4.04928	4.18215E-08
68.7318	3.81129	1.30493E-08
70.2592	3.58783	0
71.7865	3.3785	0
73.3139	3.18278	0
74.8413	3.00004	0

