



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 2  
290 BROADWAY  
NEW YORK, NY 10007-1866

March 5, 2009

Mr. Frank Sorce  
Bureau of Environmental Measurements and Site Assessment  
Division of Remediation Support  
State of New Jersey Department of Environmental Protection  
PO Box 407  
Trenton, New Jersey 08625-0407

Dear Mr. Sorce:

Enclosed is a copy of the HRS Score for the EI Dupont site (EPA ID: NJD980771604) in Popmton Lakes, Passaic which you requested. Please feel free to contact me if you have any questions or concerns at (212) 637-4342.

Sincerely

A handwritten signature in cursive script that reads "James Desir".

James Desir  
Pre-Remedial Section

○ = HRS  
□ = PRO

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Air Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	HRS	Max. Score	PRO	
<b>1</b> Observed Release	(0)	45	1	○	45	○
Date and Location:						
Sampling Protocol:						
If line <b>1</b> is 0, the $S_a = 0$ . Enter on line <b>5</b>						
If line <b>1</b> is 45, then proceed to line <b>2</b>						
<b>2</b> Waste Characteristics						
Reactivity and Incompatibility	0 1 2 3		1		3	
Toxicity	0 1 2 3		3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8		1		8	
Total Waste Characteristics Score					20	
<b>3</b> Targets						
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30		1		30	
Distance to Sensitive Environment	0 1 2 3		2		6	
Land Use	0 1 2 3		1		3	
Total Targets Score					39	
<b>4</b> Multiply <b>1</b> x <b>2</b> x <b>3</b>					35,100	
<b>5</b> Divide line <b>4</b> by 35,100 and multiply by 100					$S_a =$	○

O = HRS  
 □ = PRO

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Surface Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	HRS	Max. Score	PRO	
<b>1</b> Observed Release	0 <b>(45)</b>	1	45	45	45	
If observed release is given a value of 45, proceed to line <b>4</b> . If observed release is given a value of 0, proceed to line <b>2</b> .						
<b>2</b> Route Characteristics						
Facility Slope and Intervening Terrain	<b>(0)</b> 1 2 3	1	0	3	0	
1-yr. 24-hr. Rainfall	0 1 <b>(2)</b> 3	1	2	3	2	
Distance to Nearest Surface Water	0 1 <b>(2)</b> 3	2	4	8	4	
Physical State	0 1 2 <b>(3)</b>	1	3	3	3	
<b>Total Route Characteristics Score</b>			<b>9</b>	15	<b>9</b>	
<b>3</b> Containment	0 1 2 <b>(3)</b>	1	3	3	3	
<b>4</b> Waste Characteristics						
Toxicity/Persistence	0 3 6 9 12 15 <b>(18)</b>	1	18	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 <b>(8)</b>	1	8	8	8	
<b>Total Waste Characteristics Score</b>			<b>26</b>	28	<b>26</b>	
<b>5</b> Targets						
Surface Water Use	0 1 2 <b>(3)</b>	3	9	9	9	
Distance to a Sensitive Environment	<b>(0)</b> 1 2 3	2	0	6	0	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 <b>(35)</b> 40	1	35	40	35	
<b>Total Targets Score</b>			<b>44</b>	55	<b>44</b>	
<b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b> If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b>			51,480	64,350	51,480	
<b>7</b> Divide line <b>6</b> by 64,350 and multiply by 100			$S_{sw} = 80.00$		80.00	

○ = HRS  
□ = PRO

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Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	HRS	Max. Score	PRO	
<b>1</b> Observed Release	0 <b>(45)</b>	1	45	45	45	
If observed release is given a score of 45, proceed to line <b>4</b> . If observed release is given a score of 0, proceed to line <b>2</b> .						
<b>2</b> Route Characteristics						
Depth to Aquifer of Concern	0 1 2 <b>(3)</b>	2	6	6	6	
Net Precipitation	0 1 2 <b>(3)</b>	1	3	3	3	
Permeability of the Unsaturated Zone	0 1 <b>(2)</b> 3	1	2	3	2	
Physical State	0 1 2 <b>(3)</b>	1	3	3	3	
<b>Total Route Characteristics Score</b>			<b>14</b>	15	<b>14</b>	
<b>3</b> Containment	0 1 2 <b>(3)</b>	1	3	3	3	
<b>4</b> Waste Characteristics						
Toxicity/Persistence	0 3 6 9 12 15 <b>(18)</b>	1	18	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 <b>(8)</b>	1	8	8	8	
<b>Total Waste Characteristics Score</b>			<b>26</b>	26	<b>26</b>	
<b>5</b> Targets						
Ground Water Use	0 1 <b>(2)</b> <b>(3)</b>	3	6	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 <b>(35)</b> 40	1	35	40	35	
<b>Total Targets Score</b>			<b>41</b>	49	<b>44</b>	
<b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b> If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b>			47,970	57,330	51,480	
<b>7</b> Divide line <b>6</b> by 57,330 and multiply by 100			S <sub>gw</sub> = 83.67		89.80	

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HRS	s	s <sup>2</sup>
Groundwater Route Score (S <sub>gw</sub> )	83.67	7000.67
Surface Water Route Score (S <sub>sw</sub> )	80.00	6400.00
Air Route Score (S <sub>a</sub> )	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		13400.67
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		115.76
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		66.91

WORKSHEET FOR COMPUTING S<sub>M</sub>

PRO	s	s <sup>2</sup>
Groundwater Route Score (S <sub>gw</sub> )	89.80	8064.04
Surface Water Route Score (S <sub>sw</sub> )	80.00	6400.00
Air Route Score (S <sub>a</sub> )	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		14464.04
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		120.27
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		69.52

WORKSHEET FOR COMPUTING S<sub>M</sub>



## GROUND WATER ROUTE WORK SHEET

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
<b>1</b> Observed Release	0 <b>45</b>	1	<b>45</b>	45	3.1
If observed release is given a score of 45, proceed to line <b>4</b> . If observed release is given a score of 0, proceed to line <b>2</b> .					
<b>2</b> Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 3	2		6	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score				15	
<b>3</b> Containment	0 1 2 3	1		3	3.3
<b>4</b> Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 <b>18</b>	1	<b>18</b>	18	
Hazardous Waste Quantity	0 1 2 <b>3</b> 4 5 6 7 8	1	<b>3</b>	8	
Total Waste Characteristics Score				<b>21</b>	26
<b>5</b> Targets					3.5
Ground Water Use	0 1 2 <b>3</b>	3	<b>9</b>	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 <b>30</b> 32 35 40	1	<b>30</b>	40	
Total Targets Score				<b>39</b>	49
<b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b> If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b>			<b>36855</b>	57,330	
<b>7</b> Divide line <b>6</b> by 57,330 and multiply by 100			$S_{gw} = 64.29$		

SURFACE WATER ROUTE WORK SHEET						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
<b>1</b> Observed Release	0 <u>45</u>	1	45	45	4.1	
If observed release is given a value of 45, proceed to line <b>4</b> . If observed release is given a value of 0, proceed to line <b>2</b> .						
<b>2</b> Route Characteristics					4.2	
Facility Slope and Intervening Terrain	0 1 2 3	1		3		
1-yr. 24-hr. Rainfall	0 1 2 3	1		3		
Distance to Nearest Surface Water	0 1 2 3	2		6		
Physical State	0 1 2 3	1		3		
Total Route Characteristics Score				15		
<b>3</b> Containment	0 1 2 3	1		3	4.3	
<b>4</b> Waste Characteristics					4.4	
Toxicity/Persistence	0 3 6 9 12 15 <u>18</u>	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8		
Total Waste Characteristics Score				26		
<b>5</b> Targets					4.5	
Surface Water Use	0 1 <u>2</u> 3	3	6	9		
Distance to a Sensitive Environment	<u>0</u> 1 2 3	2	0	6		
Population Served/Distance to Water Intake Downstream	$\left. \begin{array}{l} \textcircled{0} 4 6 8 10 \\ 12 16 18 20 \\ 24 30 32 35 40 \end{array} \right\}$	1	0	40		
Total Targets Score				6	55	
<b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b>						
If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b>				64,350		
<b>7</b> Divide line <b>6</b> by 64,350 and multiply by 100 $S_{sw} =$						

## AIR ROUTE WORK SHEET

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
<b>1</b> Observed Release	0	45	1	0	45	5.1
Date and Location:						
Sampling Protocol:						
If line <b>1</b> is 0, the S = 0. Enter on line <b>5</b> .						
If line <b>1</b> is 45, then proceed to line <b>2</b> .						
<b>2</b> Waste Characteristics					5.2	
Reactivity and Incompatibility	0 1 2 3		1		3	
Toxicity	0 1 2 3		3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8		1		8	
Total Waste Characteristics Score					20	
<b>3</b> Targets					5.3	
Population Within 4-Mile Radius	} 0 9 12 15 18 21 24 27 30		1		30	
Distance to Sensitive Environment	0 1 2 3		2		6	
Land Use	0 1 2 3		1		3	
Total Targets Score					39	
<b>4</b> Multiply <b>1</b> x <b>2</b> x <b>3</b>					35,100	
<b>5</b> Divide line <b>4</b> by 35,100 and multiply by 100 $S_a = 0$						

	S	S <sup>2</sup>
Groundwater Route Score (S <sub>gw</sub> )		
Surface Water Route Score (S <sub>sw</sub> )		
Air Route Score (S <sub>a</sub> )	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73$		S <sub>M</sub> =

WORKSHEET FOR COMPUTING S<sub>M</sub>