

**Appendix – 4.4****Wet season Baseline Air Quality of Project Area**Monitoring Dates: 29 & 30<sup>th</sup> September' 2017

Location / Parameter		SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (µg/m <sup>3</sup> )	H <sub>2</sub> S (µg/m <sup>3</sup> )	THC (µg/m <sup>3</sup> )	VOCs (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	TSP (µg/m <sup>3</sup> )	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )
<b>X1</b>	Aleto Community	0.00	0.00	0.00	0.00	0.00	15.00	0.32	11.00	10.00	1.00
<b>X2</b>	Flare Area	0.00	0.00	0.00	0.00	20.00	9.00	0.20	27.00	18.00	9.00
<b>X3</b>	NG Receipt facility Area	0.00	2.00	1.30	0.00	0.00	25.00	0.30	15.00	10.00	5.00
<b>X4</b>	Urea bagging Plant	0.00	0.00	0.00	0.00	10.00	15.00	0.01	8.00	5.00	3.00
<b>X5</b>	Weigh Bridge	2.60	2.00	0.00	0.00	20.00	3.50	0.04	59.00	39.00	20.00
<b>X6</b>	Main Gate	0.00	0.00	2.60	0.00	10.00	10.00	0.03	47.00	31.00	16.00
<b>X7</b>	Akpajo Community	5.40	0.00	3.80	0.00	0.00	5.00	0.00	30.00	19.00	11.00
<b>Control 1</b>	Agbonchia Njuru	0.00	0.00	1.30	0.00	0.00	10.00	0.18	20.30	13.80	6.50
<b>Control 2</b>	Rumukrushu Town	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.00	15.00	8.00
	<b>Range</b>	<b>0.0-5.4</b>	<b>0.0-2.0</b>	<b>0.0-3.8</b>	<b>0.0</b>	<b>0.0-20.0</b>	<b>0.0-25.0</b>	<b>0.0-0.32</b>	<b>8.0-59.0</b>	<b>5.0-39.0</b>	<b>1.0-20.0</b>
	<b>Mean</b>	<b>0.9</b>	<b>0.4</b>	<b>1.0</b>	<b>0.0</b>	<b>6.7</b>	<b>10.3</b>	<b>0.1</b>	<b>26.7</b>	<b>17.9</b>	<b>8.8</b>
	<b>Std. dev.</b>	<b>1.90</b>	<b>0.88</b>	<b>1.40</b>	<b>0.00</b>	<b>8.66</b>	<b>7.44</b>	<b>0.13</b>	<b>16.79</b>	<b>10.81</b>	<b>6.09</b>
	<b>FMEnv limit</b>	<b>26</b>	<b>75-113</b>	<b>22.8</b>	<b>N/A</b>	<b>160</b>	<b>6000</b>	<b>0.5-1.0</b>	<b>250</b>	<b>N/A</b>	<b>N/A</b>
	<b>IFC limit</b>	<b>20</b>	<b>200</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>50</b>	<b>25</b>

**Dry season Baseline Air Quality of Project Area**

Location / Parameter		SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (µg/m <sup>3</sup> )	H <sub>2</sub> S (µg/m <sup>3</sup> )	THC (µg/m <sup>3</sup> )	VOCs (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	TSP (µg/m <sup>3</sup> )	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )
<b>X1</b>	Aleto Community	5.58	2.89	3.51	1.17	13.98	0.19	10.83	74.9	39.3	18.9
<b>X2</b>	Flare Area	8.32	4.70	4.40	0.63	14.57	0.45	7.92	90.5	44.0	19.8
<b>X3</b>	NG Receipt facility Area	8.55	4.76	4.46	3.47	18.74	0.38	11.04	98.0	43.4	21.1
<b>X4</b>	Urea bagging Plant	7.49	6.18	4.15	2.33	16.96	0.44	10.83	90.7	37.9	18.4
<b>X5</b>	Weigh Bridge	7.95	5.17	5.42	2.30	18.75	0.19	8.54	106.6	43.5	19.5
<b>X6</b>	Main Gate	7.83	7.59	5.89	2.09	15.77	0.32	11.67	93.3	45.3	19.5
<b>X7</b>	Akpajo Community	4.37	4.28	4.04	0.70	13.68	0.35	4.80	78.2	41.8	16.5
<b>Control 1</b>	Agbonchia Njuru	6.30	4.08	5.24	0.48	10.70	0.16	7.94	61.5	33.7	13.5
	<b>Range</b>	<b>4.37- 8.55</b>	<b>2.89- 7.59</b>	<b>3.51- 5.89</b>	<b>0.48- 3.47</b>	<b>10.70- 18.75</b>	<b>0.16- 0.45</b>	<b>4.80- 11.67</b>	<b>61.5- 106.6</b>	<b>33.7- 45.3</b>	<b>13.5- 21.1</b>
	<b>Mean</b>	<b>7.0</b>	<b>5.0</b>	<b>4.6</b>	<b>1.6</b>	<b>15.4</b>	<b>0.3</b>	<b>9.2</b>	<b>86.7</b>	<b>41.1</b>	<b>18.4</b>
	<b>Std. dev.</b>	<b>1.48</b>	<b>1.42</b>	<b>0.80</b>	<b>1.06</b>	<b>2.74</b>	<b>0.12</b>	<b>2.33</b>	<b>14.37</b>	<b>3.88</b>	<b>2.39</b>
	<b>FMEnv limit</b>	<b>26</b>	<b>75-113</b>	<b>22.8</b>	<b>N/A</b>	<b>160</b>	<b>6000</b>	<b>0.5-1.0</b>	<b>250</b>	<b>N/A</b>	<b>N/A</b>
	<b>IFC limit</b>	<b>20</b>	<b>200</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>50</b>	<b>25</b>

Monitoring Reports: January'17 (21-30<sup>th</sup>); February'17 (19-28<sup>th</sup>) & March'17 (15-24<sup>th</sup>).

## Dry Session data monitored during Month of January, February &amp; March' 2017

	Location	SO <sub>2</sub> (µg/m <sup>3</sup> )				NO <sub>2</sub> (µg/m <sup>3</sup> )				CO (µg/m <sup>3</sup> )			
		Jan	Feb	Mar	Ave	Jan	Feb	Mar	Ave	Jan	Feb	Mar	Ave
X1	Aleto Community	6.06	4.98	5.70	5.58	3.10	3.58	2.00	2.89	1.56	5.33	3.65	3.51
X2	Flare Area	10.70	8.91	5.36	8.32	6.40	4.56	3.15	4.70	4.69	4.56	3.94	4.40
X3	NG Receipt facility Area	8.90	7.13	9.63	8.55	6.40	5.13	2.75	4.76	5.46	5.13	2.79	4.46
X4	Urea bagging Plant	3.58	8.19	10.69	7.49	4.10	4.20	10.25	6.18	2.16	5.60	4.69	4.15
X5	Weigh Bridge	9.63	7.11	7.11	7.95	4.86	7.68	2.98	5.17	4.68	7.68	3.90	5.42
X6	Main Gate	6.05	6.76	10.68	7.83	4.86	6.40	11.51	7.59	6.72	6.25	4.69	5.89
X7	Akpajo Community	5.08	4.98	3.05	4.37	2.73	4.98	5.13	4.28	3.89	5.11	3.13	4.04
Control 1	Agbonchia Njuru	6.41	6.06	6.43	6.30	3.59	6.06	2.60	4.08	3.78	7.68	4.26	5.24
	Range				4.37- 8.55				2.89- 7.59				3.51- 5.89
	Mean				7.0				5.0				4.6
	Std. dev.				1.48				1.42				0.80

Continue.....

	Location	H <sub>2</sub> S (µg/m <sup>3</sup> )				THC (µg/m <sup>3</sup> )				TSPM (µg/m <sup>3</sup> )			
		Jan	Feb	Mar	Ave	Jan	Feb	Mar	Ave	Jan	Feb	Mar	Ave
X1	Aleto Community	1.60	1.90	0.00	1.17	14.28	16.96	10.69	13.98	83.4	80.3	61.0	74.9
X2	Flare Area	1.90	0.00	0.00	0.63	13.38	18.74	11.6	14.57	85.4	120.1	66.0	90.5
X3	NG Receipt facility Area	3.80	3.80	2.80	3.47	18.74	21.42	16.07	18.74	65.1	101.6	127.4	98.0
X4	Urea bagging Plant	0.00	2.53	4.45	2.33	16.07	16.07	18.74	16.96	65.5	94.3	112.4	90.7
X5	Weigh Bridge	2.48	1.90	2.53	2.30	16.07	20.53	19.64	18.75	81.0	121.3	117.5	106.6
X6	Main Gate	6.28	0.00	0.00	2.09	15.17	19.64	12.50	15.77	80.4	95.1	104.4	93.3
X7	Akpajo Community	2.10	0.00	0.00	0.70	15.17	10.70	15.17	13.68	93.8	65.5	75.4	78.2
Control 1	Agbonchia Njuru	1.43	0.00	0.00	0.48	9.82	10.68	11.60	10.70	72.6	49.0	62.9	61.5
	Range				0.48-3.47				10.70-18.75				61.5-106.6
	Mean				1.6				15.4				86.7
	Std. dev.				1.06				2.74				14.37

Continue.....

	Location	VOC ( $\mu\text{g}/\text{m}^3$ )				NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )				PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )				PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )			
		Jan	Feb	Mar	Ave	Jan	Feb	Mar	Ave	Jan	Feb	Mar	Ave	Jan	Feb	Mar	Ave
X1	Aleto Community	13.75	18.75	0.00	10.83	0.29	0.29	0	0.19	42.3	40.5	35.2	39.33	21.1	19.8	15.8	18.90
X2	Flare Area	7.50	11.25	5.00	7.92	0.19	0.48	0.67	0.45	46.0	47.5	38.5	44.00	19.4	22.6	17.5	19.83
X3	NG Receipt facility Area	10.00	12.50	10.63	11.04	0.29	0.29	0.57	0.38	38.2	44.2	47.9	43.43	16.9	22.4	23.9	21.07
X4	Urea bagging Plant	13.75	10.00	8.75	10.83	0.57	0.57	0.19	0.44	30.7	36.4	46.5	37.87	14.8	17.9	22.6	18.43
X5	Weigh Bridge	7.50	10.63	7.50	8.54	0.10	0.08	0.38	0.19	37.9	47.3	45.2	43.47	16.5	22.4	19.6	19.50
X6	Main Gate	16.25	8.75	10.00	11.67	0.48	0.29	0.19	0.32	41.7	45.9	48.2	45.27	18.7	19.2	20.7	19.53
X7	Akpajo Community	3.13	5.63	5.63	4.80	0.00	0.85	0.19	0.35	44.3	42.3	38.7	41.77	19.5	13.2	16.7	16.47
Control 1	Agbonchia Njuru	11.25	3.81	8.75	7.94	0.19	0.00	0.29	0.16	36.7	27.6	36.8	33.70	15.9	11.4	13.1	13.47
	Range				4.80-11.67				0.16-0.45				33.7-45.3				13.5-21.1
	Mean				9.2				0.3				41.1				18.4
	Std. dev.				2.33				0.12				3.88				2.39

### MODELLING OUTPUT RESULTS AMMONIA REFORMER NOX

## SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = 12.3000  
 STACK HEIGHT (M) = 35.0000  
 STACK INSIDE DIAM (M) = 4.3500  
 STACK EXIT VELOCITY (M/S) = 11.9400  
 STACK GAS EXIT TEMP (K) = 413.0000  
 AMBIENT AIR TEMP (K) = 303.0000  
 RECEPTOR HEIGHT (M) = 0.0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 0.0000  
 MIN HORIZ BLDG DIM (M) = 0.0000  
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 147.525 M\*\*4/S\*\*3; MOM. FLUX = 494.789 M\*\*4/S\*\*2.

## \*\*\* FULL METEOROLOGY \*\*\*

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## \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

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## Atmospheric condition category:

1 = Very unstable; 2 = Unstable; 3 = Slightly unstable; 4 = Neutral; 5 = Slightly stable; 6 = Stable

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.4870E-02	5	1.0	1.6	10000.0	172.22	34.12	33.75 NO
200.	0.1274	5	1.0	1.6	10000.0	172.22	40.89	39.70 NO
300.	0.1495	5	1.0	1.6	10000.0	172.22	42.69	40.16 NO
400.	0.6852	3	10.0	11.3	3200.0	99.46	46.12	28.87 NO
500.	5.131	1	3.0	3.3	960.0	271.56	122.21	114.50 NO
600.	12.76	1	3.0	3.3	960.0	271.56	142.86	162.63 NO
700.	15.60	1	3.0	3.3	960.0	271.56	163.03	221.11 NO
800.	18.79	1	1.5	1.6	509.1	508.11	213.39	310.24 NO
900.	22.33	1	1.5	1.6	509.1	508.11	233.33	387.47 NO
1000.	23.01	1	1.5	1.6	509.1	508.11	248.66	473.55 NO
1100.	22.19	1	1.5	1.6	509.1	508.11	264.19	571.51 NO
1200.	21.03	1	1.5	1.6	509.1	508.11	279.87	681.13 NO
1300.	19.91	1	1.5	1.6	509.1	508.11	295.65	802.30 NO
1400.	18.90	1	1.5	1.6	509.1	508.11	311.49	934.96 NO
1500.	17.98	1	1.5	1.6	509.1	508.11	327.36	1079.10 NO
1600.	17.15	1	1.5	1.6	509.1	508.11	343.26	1234.73 NO
1700.	16.39	1	1.5	1.6	509.1	508.11	359.15	1401.87 NO
1800.	15.69	1	1.5	1.6	509.1	508.11	375.04	1580.58 NO
1900.	15.06	1	1.5	1.6	509.1	508.11	390.90	1770.89 NO

2000.	14.47	1	1.5	1.6	509.1	508.11	406.74	1972.85	NO
2100.	13.93	1	1.5	1.6	509.1	508.11	422.54	2186.52	NO
2200.	13.43	1	1.5	1.6	509.1	508.11	438.31	2411.94	NO
2300.	12.96	1	1.5	1.6	509.1	508.11	454.03	2649.18	NO
2400.	12.53	1	1.5	1.6	509.1	508.11	469.72	2898.28	NO
2500.	12.13	1	1.5	1.6	509.1	508.11	485.36	3159.29	NO
2600.	11.90	2	1.5	1.6	509.1	508.11	385.10	339.85	NO
2700.	12.04	2	1.5	1.6	509.1	508.11	396.59	351.98	NO
2800.	12.12	2	1.5	1.6	509.1	508.11	408.06	364.23	NO
2900.	12.15	2	1.5	1.6	509.1	508.11	419.52	376.59	NO
3000.	12.13	2	1.5	1.6	509.1	508.11	430.97	389.05	NO
3500.	11.58	2	1.5	1.6	509.1	508.11	487.92	452.69	NO
4000.	10.68	2	1.5	1.6	509.1	508.11	544.36	518.14	NO
4500.	9.777	2	1.5	1.6	509.1	508.11	600.24	585.02	NO
5000.	8.973	2	1.5	1.6	509.1	508.11	655.56	653.08	NO
5500.	8.818	3	1.5	1.7	491.7	490.66	498.32	318.56	NO
6000.	8.904	3	1.5	1.7	491.7	490.66	536.03	340.68	NO
6500.	8.844	3	1.5	1.7	491.7	490.66	573.54	362.89	NO
7000.	8.910	5	1.0	1.6	10000.0	172.22	298.52	76.79	NO
7500.	9.281	5	1.0	1.6	10000.0	172.22	317.21	78.82	NO
8000.	9.598	5	1.0	1.6	10000.0	172.22	335.76	80.79	NO
8500.	9.467	5	1.0	1.6	10000.0	172.22	354.20	82.72	NO
9000.	9.409	5	1.0	1.6	10000.0	172.22	372.51	84.60	NO
9500.	9.385	5	1.0	1.6	10000.0	172.22	390.71	86.45	NO
10000.	8.879	5	1.0	1.6	10000.0	172.22	408.81	88.26	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

980.	23.04	1	1.5	1.6	509.1	508.11	245.73	456.27	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\* INVERSION BREAK-UP FUMIGATION CALC. \*\*\*

CONC (UG/M\*\*3) = 25.91

DIST TO MAX (M) = 10943.74

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

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CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	23.04	980.	0.
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INV BREAKUP FUMI	25.91	10944.	--
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\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

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**AMMONIA REFORMER PM**

## SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = 4.10000  
 STACK HEIGHT (M) = 35.0000  
 STACK INSIDE DIAM (M) = 4.3500  
 STACK EXIT VELOCITY (M/S) = 11.9400  
 STACK GAS EXIT TEMP (K) = 413.0000  
 AMBIENT AIR TEMP (K) = 303.0000  
 RECEPTOR HEIGHT (M) = 0.0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 0.0000  
 MIN HORIZ BLDG DIM (M) = 0.0000  
 MAX HORIZ BLDG DIM (M) = 0.0000

THE NON-REGULATORY BUT CONSERVATIVE BRODE 2 MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX =  $147.525 \text{ M}^{**4}/\text{S}^{**3}$ ; MOM. FLUX =  $494.789 \text{ M}^{**4}/\text{S}^{**2}$ .

## \*\*\* FULL METEOROLOGY \*\*\*

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## \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

\*\*\*\*\*

Atmospheric condition category:

1 = Very unstable; 2 = Unstable; 3 = Slightly unstable; 4 = Neutral; 5 = Slightly stable; 6 = Stable

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.1623E-02	5	1.0	1.6	10000.0	172.22	34.12	33.75 NO
200.	0.4248E-01	5	1.0	1.6	10000.0	172.22	40.89	39.70 NO
300.	0.4984E-01	5	1.0	1.6	10000.0	172.22	42.69	40.16 NO
400.	0.2284	3	10.0	11.3	129.3	99.46	46.12	28.87 NO
500.	2.176	1	3.0	3.3	300.0	271.56	122.21	114.50 NO
600.	6.487	1	3.0	3.3	300.0	271.56	142.86	162.63 NO
700.	8.874	1	3.0	3.3	300.0	271.56	163.03	221.11 NO
800.	9.406	1	2.5	2.7	326.8	318.87	187.60	293.10 NO
900.	8.840	1	2.5	2.7	326.8	318.87	206.76	372.08 NO
1000.	8.189	1	2.5	2.7	326.8	318.87	223.91	461.04 NO
1100.	7.607	1	2.5	2.7	326.8	318.87	241.05	561.19 NO
1200.	7.104	1	2.0	2.2	397.6	389.84	265.20	675.24 NO
1300.	6.985	2	5.0	5.5	194.6	176.93	198.99	151.29 NO
1400.	6.828	2	5.0	5.5	194.6	176.93	212.03	163.22 NO
1500.	6.604	2	5.0	5.5	194.6	176.93	224.99	175.29 NO
1600.	6.400	2	4.5	4.9	210.0	192.70	238.68	188.51 NO
1700.	6.193	2	4.0	4.4	229.4	212.42	252.52	202.10 NO
1800.	6.075	3	8.0	9.1	147.4	118.84	177.53	107.48 NO
1900.	5.968	3	8.0	9.1	147.4	118.84	186.28	112.65 NO



2000.	5.838	3	8.0	9.1	147.4	118.84	194.98	117.81	NO
2100.	5.693	3	8.0	9.1	147.4	118.84	203.64	122.96	NO
2200.	5.539	3	8.0	9.1	147.4	118.84	212.27	128.10	NO
2300.	5.426	3	5.0	5.7	197.5	171.70	222.96	136.67	NO
2400.	5.402	3	5.0	5.7	197.5	171.70	231.43	141.66	NO
2500.	5.359	3	5.0	5.7	197.5	171.70	239.88	146.65	NO
2600.	5.299	3	5.0	5.7	197.5	171.70	248.30	151.63	NO
2700.	5.226	3	5.0	5.7	197.5	171.70	256.70	156.61	NO
2800.	5.143	3	5.0	5.7	197.5	171.70	265.07	161.58	NO
2900.	5.053	3	5.0	5.7	197.5	171.70	273.41	166.55	NO
3000.	4.974	3	4.5	5.1	212.1	186.89	282.36	172.55	NO
3500.	4.589	3	4.0	4.5	230.6	205.87	324.26	198.39	NO
4000.	4.247	3	3.5	4.0	254.5	230.28	365.75	224.32	NO
4500.	3.942	3	3.0	3.4	286.5	262.83	407.04	250.59	NO
5000.	3.682	3	3.0	3.4	286.5	262.83	446.41	274.30	NO
5500.	3.454	3	2.5	2.8	331.5	308.40	487.32	301.05	NO
6000.	3.254	3	2.5	2.8	331.5	308.40	525.82	324.37	NO
6500.	3.061	3	2.5	2.8	331.5	308.40	564.00	347.63	NO
7000.	2.970	5	1.0	1.6	10000.0	172.22	298.52	76.79	NO
7500.	3.094	5	1.0	1.6	10000.0	172.22	317.21	78.82	NO
8000.	3.199	5	1.0	1.6	10000.0	172.22	335.76	80.79	NO
8500.	3.289	5	1.0	1.6	10000.0	172.22	354.20	82.72	NO
9000.	3.364	5	1.0	1.6	10000.0	172.22	372.51	84.60	NO
9500.	3.426	5	1.0	1.6	10000.0	172.22	390.71	86.45	NO
10000.	3.476	5	1.0	1.6	10000.0	172.22	408.81	88.26	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

780.	9.434	1	2.5	2.7	326.8	318.87	183.82	279.24	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\* INVERSION BREAK-UP FUMIGATION CALC. \*\*\*

CONC (UG/M\*\*3) = 8.638

DIST TO MAX (M) = 10943.74

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	9.434	780.	0.
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INV BREAKUP FUMI	8.638	10944.	--
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\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

**AMMONIA REFORMER SOX**

## SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = 0.238000  
 STACK HEIGHT (M) = 35.0000  
 STACK INSIDE DIAM (M) = 4.3500  
 STACK EXIT VELOCITY (M/S) = 11.9400  
 STACK GAS EXIT TEMP (K) = 413.0000  
 AMBIENT AIR TEMP (K) = 303.0000  
 RECEPTOR HEIGHT (M) = 0.0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 0.0000  
 MIN HORIZ BLDG DIM (M) = 0.0000  
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.

THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX =  $147.525 \text{ M}^{**4}/\text{S}^{**3}$ ; MOM. FLUX =  $494.789 \text{ M}^{**4}/\text{S}^{**2}$ .

\*\*\* FULL METEOROLOGY \*\*\*

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\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

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Atmospheric condition category:

1 = Very unstable; 2 = Unstable; 3 = Slightly unstable; 4 = Neutral; 5 = Slightly stable; 6 = Stable

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.9424E-04	5	1.0	1.6	10000.0	172.22	34.12	33.75 NO
200.	0.2466E-02	5	1.0	1.6	10000.0	172.22	40.89	39.70 NO
300.	0.2893E-02	5	1.0	1.6	10000.0	172.22	42.69	40.16 NO
400.	0.1326E-01	3	10.0	11.3	3200.0	99.46	46.12	28.87 NO
500.	0.9929E-01	1	3.0	3.3	960.0	271.56	122.21	114.50 NO
600.	0.2470	1	3.0	3.3	960.0	271.56	142.86	162.63 NO
700.	0.3019	1	3.0	3.3	960.0	271.56	163.03	221.11 NO
800.	0.3636	1	1.5	1.6	509.1	508.11	213.39	310.24 NO
900.	0.4321	1	1.5	1.6	509.1	508.11	233.33	387.47 NO
1000.	0.4452	1	1.5	1.6	509.1	508.11	248.66	473.55 NO
1100.	0.4294	1	1.5	1.6	509.1	508.11	264.19	571.51 NO
1200.	0.4068	1	1.5	1.6	509.1	508.11	279.87	681.13 NO
1300.	0.3852	1	1.5	1.6	509.1	508.11	295.65	802.30 NO
1400.	0.3656	1	1.5	1.6	509.1	508.11	311.49	934.96 NO
1500.	0.3479	1	1.5	1.6	509.1	508.11	327.36	1079.10 NO
1600.	0.3318	1	1.5	1.6	509.1	508.11	343.26	1234.73 NO
1700.	0.3171	1	1.5	1.6	509.1	508.11	359.15	1401.87 NO
1800.	0.3037	1	1.5	1.6	509.1	508.11	375.04	1580.58 NO
1900.	0.2914	1	1.5	1.6	509.1	508.11	390.90	1770.89 NO
2000.	0.2800	1	1.5	1.6	509.1	508.11	406.74	1972.85 NO

2100.	0.2695	1	1.5	1.6	509.1	508.11	422.54	2186.52	NO
2200.	0.2598	1	1.5	1.6	509.1	508.11	438.31	2411.94	NO
2300.	0.2508	1	1.5	1.6	509.1	508.11	454.03	2649.18	NO
2400.	0.2425	1	1.5	1.6	509.1	508.11	469.72	2898.28	NO
2500.	0.2347	1	1.5	1.6	509.1	508.11	485.36	3159.29	NO
2600.	0.2302	2	1.5	1.6	509.1	508.11	385.10	339.85	NO
2700.	0.2329	2	1.5	1.6	509.1	508.11	396.59	351.98	NO
2800.	0.2345	2	1.5	1.6	509.1	508.11	408.06	364.23	NO
2900.	0.2350	2	1.5	1.6	509.1	508.11	419.52	376.59	NO
3000.	0.2347	2	1.5	1.6	509.1	508.11	430.97	389.05	NO
3500.	0.2240	2	1.5	1.6	509.1	508.11	487.92	452.69	NO
4000.	0.2067	2	1.5	1.6	509.1	508.11	544.36	518.14	NO
4500.	0.1892	2	1.5	1.6	509.1	508.11	600.24	585.02	NO
5000.	0.1736	2	1.5	1.6	509.1	508.11	655.56	653.08	NO
5500.	0.1706	3	1.5	1.7	491.7	490.66	498.32	318.56	NO
6000.	0.1723	3	1.5	1.7	491.7	490.66	536.03	340.68	NO
6500.	0.1711	3	1.5	1.7	491.7	490.66	573.54	362.89	NO
7000.	0.1724	5	1.0	1.6	10000.0	172.22	298.52	76.79	NO
7500.	0.1796	5	1.0	1.6	10000.0	172.22	317.21	78.82	NO
8000.	0.1857	5	1.0	1.6	10000.0	172.22	335.76	80.79	NO
8500.	0.1909	5	1.0	1.6	10000.0	172.22	354.20	82.72	NO
9000.	0.1953	5	1.0	1.6	10000.0	172.22	372.51	84.60	NO
9500.	0.1989	5	1.0	1.6	10000.0	172.22	390.71	86.45	NO
10000.	0.2018	5	1.0	1.6	10000.0	172.22	408.81	88.26	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

980.	0.4459	1	1.5	1.6	509.1	508.11	245.73	456.27	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\* INVERSION BREAK-UP FUMIGATION CALC. \*\*\*

CONC (UG/M\*\*3) = 0.5014

DIST TO MAX (M) = 10943.74

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

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CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	0.4459	980.	0.
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INV BREAKUP FUMI	0.5014	10944.	--
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\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

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**BOILER STACK NOX**

## SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	5.20000
STACK HEIGHT (M)	=	40.0000
STACK INSIDE DIAM (M)	=	2.9000
STACK EXIT VELOCITY (M/S)	=	13.0600
STACK GAS EXIT TEMP (K)	=	448.0000
AMBIENT AIR TEMP (K)	=	303.0000
RECEPTOR HEIGHT (M)	=	0.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	0.0000
MIN HORIZ BLDG DIM (M)	=	0.0000
MAX HORIZ BLDG DIM (M)	=	0.0000

THE NON-REGULATORY BUT CONSERVATIVE BRODE 2 MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX =  $87.150 \text{ M}^{**4}/\text{S}^{**3}$ ; MOM. FLUX =  $242.542 \text{ M}^{**4}/\text{S}^{**2}$ .

\*\*\* FULL METEOROLOGY \*\*\*

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\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

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Atmospheric condition category:

1 = Very unstable; 2 = Unstable; 3 = Slightly unstable; 4 = Neutral; 5 = Slightly stable; 6 = Stable

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.1535E-03	5	1.0	1.6	10000.0	153.36	27.57	27.11 NO
200.	0.1815E-01	5	1.0	1.6	10000.0	153.36	34.41	32.98 NO
300.	0.7274E-01	1	3.0	3.3	300.0	210.89	76.84	54.82 NO
400.	1.763	1	3.0	3.3	300.0	210.89	98.50	78.56 NO
500.	6.378	1	3.0	3.3	300.0	210.89	119.45	111.55 NO
600.	11.86	1	2.0	2.2	302.3	296.34	148.11	167.26 NO
700.	16.09	1	2.0	2.2	302.3	296.34	168.68	225.31 NO
800.	16.38	1	2.0	2.2	302.3	296.34	186.39	292.33 NO
900.	15.26	1	2.0	2.2	302.3	296.34	203.80	370.44 NO
1000.	14.08	1	2.0	2.2	302.3	296.34	221.18	459.72 NO
1100.	13.11	1	1.5	1.7	387.5	381.78	247.11	563.82 NO
1200.	12.58	2	4.5	5.0	167.8	153.93	184.28	137.41 NO
1300.	12.21	2	4.0	4.4	181.6	168.17	198.22	150.29 NO
1400.	11.80	2	4.0	4.4	181.6	168.17	211.31	162.29 NO
1500.	11.46	2	3.5	3.9	199.5	186.48	225.23	175.59 NO
1600.	11.06	2	3.0	3.3	223.5	210.89	239.42	189.45 NO
1700.	10.74	2	3.0	3.3	223.5	210.89	252.15	201.64 NO
1800.	10.38	3	5.0	5.7	159.1	138.36	178.08	108.38 NO
1900.	10.34	3	5.0	5.7	159.1	138.36	186.80	113.51 NO
2000.	10.24	3	5.0	5.7	159.1	138.36	195.48	118.63 NO

2100.	10.09	3	5.0	5.7	159.1	138.36	204.12	123.75	NO
2200.	9.957	3	4.5	5.2	169.4	149.29	213.16	129.57	NO
2300.	9.801	3	4.5	5.2	169.4	149.29	221.72	134.65	NO
2400.	9.639	3	4.0	4.6	182.5	162.95	230.80	140.63	NO
2500.	9.497	3	4.0	4.6	182.5	162.95	239.27	145.65	NO
2600.	9.334	3	4.0	4.6	182.5	162.95	247.72	150.67	NO
2700.	9.162	3	3.5	4.0	199.5	180.51	256.87	156.89	NO
2800.	9.030	3	3.5	4.0	199.5	180.51	265.23	161.85	NO
2900.	8.883	3	3.5	4.0	199.5	180.51	273.56	166.81	NO
3000.	8.726	3	3.5	4.0	199.5	180.51	281.88	171.76	NO
3500.	8.036	3	3.0	3.4	222.3	203.93	323.96	197.92	NO
4000.	7.434	3	2.5	2.9	254.5	236.72	365.81	224.43	NO
4500.	6.873	3	2.5	2.9	254.5	236.72	405.72	248.43	NO
5000.	6.441	3	2.0	2.3	303.0	285.89	447.19	275.57	NO
5500.	6.031	3	2.0	2.3	303.0	285.89	486.12	299.11	NO
6000.	5.637	3	2.0	2.3	303.0	285.89	524.71	322.57	NO
6500.	5.353	3	1.5	1.7	384.4	367.86	566.37	351.45	NO
7000.	5.292	5	1.0	1.6	10000.0	153.36	297.70	73.55	NO
7500.	5.455	5	1.0	1.6	10000.0	153.36	316.44	75.66	NO
8000.	5.583	5	1.0	1.6	10000.0	153.36	335.04	77.71	NO
8500.	5.682	5	1.0	1.6	10000.0	153.36	353.51	79.71	NO
9000.	5.654	5	1.0	1.6	10000.0	153.36	371.86	81.67	NO
9500.	5.623	5	1.0	1.6	10000.0	153.36	390.09	83.58	NO
10000.	5.578	5	1.0	1.6	10000.0	153.36	408.21	85.45	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

758.	16.56	1	2.0	2.2	302.3	296.34	179.25	263.56	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\* INVERSION BREAK-UP FUMIGATION CALC. \*\*\*

CONC (UG/M\*\*3) = 14.28

DIST TO MAX (M) = 8974.19

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

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CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	16.56	758.	0.
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INV BREAKUP FUMI	14.28	8974.	--
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\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

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**BOILER STACK PM**

## SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = 1.73500  
 STACK HEIGHT (M) = 40.0000  
 STACK INSIDE DIAM (M) = 2.9000  
 STACK EXIT VELOCITY (M/S) = 13.0600  
 STACK GAS EXIT TEMP (K) = 448.0000  
 AMBIENT AIR TEMP (K) = 303.0000  
 RECEPTOR HEIGHT (M) = 0.0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 0.0000  
 MIN HORIZ BLDG DIM (M) = 0.0000  
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX =  $87.150 \text{ M}^{**4}/\text{S}^{**3}$ ; MOM. FLUX =  $242.542 \text{ M}^{**4}/\text{S}^{**2}$ .

## \*\*\* FULL METEOROLOGY \*\*\*

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## \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

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Atmospheric condition category:

1 = Very unstable; 2 = Unstable; 3 = Slightly unstable; 4 = Neutral; 5 = Slightly stable; 6 = Stable

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.5120E-04	5	1.0	1.6	10000.0	153.36	27.57	27.11 NO
200.	0.6055E-02	5	1.0	1.6	10000.0	153.36	34.41	32.98 NO
300.	0.2427E-01	1	3.0	3.3	960.0	210.89	76.84	54.82 NO
400.	0.5882	1	3.0	3.3	960.0	210.89	98.50	78.56 NO
500.	2.099	1	3.0	3.3	960.0	210.89	119.45	111.55 NO
600.	3.132	1	3.0	3.3	960.0	210.89	139.85	160.00 NO
700.	3.010	1	2.5	2.8	800.0	245.07	162.98	221.07 NO
800.	3.386	1	1.5	1.7	480.0	381.78	197.26	299.38 NO
900.	3.926	1	1.0	1.1	553.7	552.67	240.05	391.56 NO
1000.	4.221	1	1.0	1.1	553.7	552.67	254.98	476.90 NO
1100.	4.158	1	1.0	1.1	553.7	552.67	270.15	574.29 NO
1200.	3.969	1	1.0	1.1	553.7	552.67	285.50	683.47 NO
1300.	3.769	1	1.0	1.1	553.7	552.67	300.98	804.28 NO
1400.	3.584	1	1.0	1.1	553.7	552.67	316.56	936.66 NO
1500.	3.415	1	1.0	1.1	553.7	552.67	332.19	1080.57 NO
1600.	3.261	1	1.0	1.1	553.7	552.67	347.86	1236.02 NO
1700.	3.121	1	1.0	1.1	553.7	552.67	363.56	1403.01 NO
1800.	2.991	1	1.0	1.1	553.7	552.67	379.26	1581.59 NO
1900.	2.873	1	1.0	1.1	553.7	552.67	394.95	1771.79 NO

2000.	2.763	1	1.0	1.1	553.7	552.67	410.63	1973.66	NO
2100.	2.661	1	1.0	1.1	553.7	552.67	426.29	2187.25	NO
2200.	2.567	1	1.0	1.1	553.7	552.67	441.92	2412.60	NO
2300.	2.480	1	1.0	1.1	553.7	552.67	457.53	2649.78	NO
2400.	2.398	1	1.0	1.1	553.7	552.67	473.09	2898.83	NO
2500.	2.322	1	1.0	1.1	553.7	552.67	488.62	3159.80	NO
2600.	2.251	1	1.0	1.1	553.7	552.67	504.11	3432.74	NO
2700.	2.184	1	1.0	1.1	553.7	552.67	519.57	3717.70	NO
2800.	2.137	2	1.0	1.1	553.7	552.67	411.94	368.57	NO
2900.	2.161	2	1.0	1.1	553.7	552.67	423.30	380.79	NO
3000.	2.177	2	1.0	1.1	553.7	552.67	434.64	393.12	NO
3500.	2.148	2	1.0	1.1	553.7	552.67	491.17	456.19	NO
4000.	2.021	2	1.0	1.1	553.7	552.67	547.28	521.20	NO
4500.	1.867	2	1.0	1.1	553.7	552.67	602.89	587.74	NO
5000.	1.721	2	1.0	1.1	553.7	552.67	657.98	655.52	NO
5500.	1.592	2	1.0	1.1	553.7	552.67	712.56	724.33	NO
6000.	1.617	5	1.0	1.6	10000.0	153.36	259.80	69.14	NO
6500.	1.699	5	1.0	1.6	10000.0	153.36	278.83	71.38	NO
7000.	1.766	5	1.0	1.6	10000.0	153.36	297.70	73.55	NO
7500.	1.820	5	1.0	1.6	10000.0	153.36	316.44	75.66	NO
8000.	1.813	5	1.0	1.6	10000.0	153.36	335.04	77.71	NO
8500.	1.796	5	1.0	1.6	10000.0	153.36	353.51	79.71	NO
9000.	1.792	5	1.0	1.6	10000.0	153.36	371.86	81.67	NO
9500.	1.799	5	1.0	1.6	10000.0	153.36	390.09	83.58	NO
10000.	1.747	5	1.0	1.6	10000.0	153.36	408.21	85.45	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

1022.	4.228	1	1.0	1.1	553.7	552.67	258.45	498.25	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\* INVERSION BREAK-UP FUMIGATION CALC. \*\*\*

CONC (UG/M\*\*3) = 4.763

DIST TO MAX (M) = 8974.19

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

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CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	4.228	1022.	0.
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INV BREAKUP FUMI	4.763	8974.	--
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\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

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**BOILER STACK SOX**

## SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = 1.04000  
 STACK HEIGHT (M) = 40.0000  
 STACK INSIDE DIAM (M) = 2.9000  
 STACK EXIT VELOCITY (M/S) = 13.0600  
 STACK GAS EXIT TEMP (K) = 448.0000  
 AMBIENT AIR TEMP (K) = 303.0000  
 RECEPTOR HEIGHT (M) = 0.0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 0.0000  
 MIN HORIZ BLDG DIM (M) = 0.0000  
 MAX HORIZ BLDG DIM (M) = 0.0000

THE NON-REGULATORY BUT CONSERVATIVE BRODE 2 MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX =  $87.150 \text{ M}^{**4}/\text{S}^{**3}$ ; MOM. FLUX =  $242.542 \text{ M}^{**4}/\text{S}^{**2}$ .

## \*\*\* FULL METEOROLOGY \*\*\*

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## \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

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## Atmospheric condition category:

1 = Very unstable; 2 = Unstable; 3 = Slightly unstable; 4 = Neutral; 5 = Slightly stable; 6 = Stable

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.3069E-04	5	1.0	1.6	10000.0	153.36	27.57	27.11 NO
200.	0.3629E-02	5	1.0	1.6	10000.0	153.36	34.41	32.98 NO
300.	0.1455E-01	1	3.0	3.3	300.0	210.89	76.84	54.82 NO
400.	0.3526	1	3.0	3.3	300.0	210.89	98.50	78.56 NO
500.	1.276	1	3.0	3.3	300.0	210.89	119.45	111.55 NO
600.	2.373	1	2.0	2.2	302.3	296.34	148.11	167.26 NO
700.	3.218	1	2.0	2.2	302.3	296.34	168.68	225.31 NO
800.	3.276	1	2.0	2.2	302.3	296.34	186.39	292.33 NO
900.	3.053	1	2.0	2.2	302.3	296.34	203.80	370.44 NO
1000.	2.816	1	2.0	2.2	302.3	296.34	221.18	459.72 NO
1100.	2.621	1	1.5	1.7	387.5	381.78	247.11	563.82 NO
1200.	2.515	2	4.5	5.0	167.8	153.93	184.28	137.41 NO
1300.	2.441	2	4.0	4.4	181.6	168.17	198.22	150.29 NO
1400.	2.360	2	4.0	4.4	181.6	168.17	211.31	162.29 NO
1500.	2.291	2	3.5	3.9	199.5	186.48	225.23	175.59 NO
1600.	2.212	2	3.0	3.3	223.5	210.89	239.42	189.45 NO
1700.	2.148	2	3.0	3.3	223.5	210.89	252.15	201.64 NO
1800.	2.076	3	5.0	5.7	159.1	138.36	178.08	108.38 NO



1900.	2.069	3	5.0	5.7	159.1	138.36	186.80	113.51	NO
2000.	2.048	3	5.0	5.7	159.1	138.36	195.48	118.63	NO
2100.	2.018	3	5.0	5.7	159.1	138.36	204.12	123.75	NO
2200.	1.991	3	4.5	5.2	169.4	149.29	213.16	129.57	NO
2300.	1.960	3	4.5	5.2	169.4	149.29	221.72	134.65	NO
2400.	1.928	3	4.0	4.6	182.5	162.95	230.80	140.63	NO
2500.	1.899	3	4.0	4.6	182.5	162.95	239.27	145.65	NO
2600.	1.867	3	4.0	4.6	182.5	162.95	247.72	150.67	NO
2700.	1.832	3	3.5	4.0	199.5	180.51	256.87	156.89	NO
2800.	1.806	3	3.5	4.0	199.5	180.51	265.23	161.85	NO
2900.	1.777	3	3.5	4.0	199.5	180.51	273.56	166.81	NO
3000.	1.745	3	3.5	4.0	199.5	180.51	281.88	171.76	NO
3500.	1.607	3	3.0	3.4	222.3	203.93	323.96	197.92	NO
4000.	1.487	3	2.5	2.9	254.5	236.72	365.81	224.43	NO
4500.	1.375	3	2.5	2.9	254.5	236.72	405.72	248.43	NO
5000.	1.288	3	2.0	2.3	303.0	285.89	447.19	275.57	NO
5500.	1.206	3	2.0	2.3	303.0	285.89	486.12	299.11	NO
6000.	1.127	3	2.0	2.3	303.0	285.89	524.71	322.57	NO
6500.	1.071	3	1.5	1.7	384.4	367.86	566.37	351.45	NO
7000.	1.058	5	1.0	1.6	10000.0	153.36	297.70	73.55	NO
7500.	1.091	5	1.0	1.6	10000.0	153.36	316.44	75.66	NO
8000.	1.117	5	1.0	1.6	10000.0	153.36	335.04	77.71	NO
8500.	1.112	5	1.0	1.6	10000.0	153.36	353.51	79.71	NO
9000.	1.109	5	1.0	1.6	10000.0	153.36	371.86	81.67	NO
9500.	1.104	5	1.0	1.6	10000.0	153.36	390.09	83.58	NO
10000.	1.103	5	1.0	1.6	10000.0	153.36	408.21	85.45	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

758.	3.312	1	2.0	2.2	302.3	296.34	179.25	263.56	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\* INVERSION BREAK-UP FUMIGATION CALC. \*\*\*

CONC (UG/M\*\*3) = 2.855

DIST TO MAX (M) = 8974.19

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

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CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	3.312	758.	0.
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INV BREAKUP FUMI	2.855	8974.	--
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\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

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**UREA GRANULATOR-1 NH3**

## SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = 0.502500E-01  
 STACK HEIGHT (M) = 55.0000  
 STACK INSIDE DIAM (M) = 2.1000  
 STACK EXIT VELOCITY (M/S) = 14.5080  
 STACK GAS EXIT TEMP (K) = 323.0000  
 AMBIENT AIR TEMP (K) = 303.0000  
 RECEPTOR HEIGHT (M) = 0.0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 0.0000  
 MIN HORIZ BLDG DIM (M) = 0.0000  
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.

THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX =  $9.712 \text{ M}^{**4}/\text{S}^{**3}$ ; MOM. FLUX =  $217.688 \text{ M}^{**4}/\text{S}^{**2}$ .

\*\*\* FULL METEOROLOGY \*\*\*

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\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

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Atmospheric condition category:

1 = Very unstable; 2 = Unstable; 3 = Slightly unstable; 4 = Neutral; 5 = Slightly stable; 6 = Stable

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.1051E-05	1	3.0	3.4	960.0	89.87	27.87	15.82 NO
200.	0.4397E-01	1	3.0	3.4	960.0	89.87	50.94	30.92 NO
300.	0.2416	1	3.0	3.4	960.0	89.87	72.45	48.48 NO
400.	0.3499	1	2.0	2.3	640.0	107.31	93.91	72.72 NO
500.	0.3899	1	1.5	1.7	480.0	124.74	114.78	106.53 NO
600.	0.4021	1	1.0	1.1	320.0	159.61	136.20	156.81 NO
700.	0.3584	1	1.0	1.1	320.0	159.61	155.21	215.41 NO
800.	0.3196	1	1.0	1.1	320.0	159.61	173.98	284.58 NO
900.	0.3058	2	1.5	1.7	480.0	124.74	141.66	99.39 NO
1000.	0.2960	2	1.0	1.1	320.0	159.61	156.99	113.31 NO
1100.	0.2952	2	1.0	1.1	320.0	159.61	170.46	124.97 NO
1200.	0.2870	2	1.0	1.1	320.0	159.61	183.83	136.81 NO
1300.	0.2749	2	1.0	1.1	320.0	159.61	197.09	148.79 NO
1400.	0.2716	3	1.5	1.8	480.0	121.26	141.28	85.30 NO
1500.	0.2697	3	1.5	1.8	480.0	121.26	150.25	90.59 NO
1600.	0.2648	3	1.5	1.8	480.0	121.26	159.17	95.87 NO
1700.	0.2578	3	1.5	1.8	480.0	121.26	168.04	101.13 NO
1800.	0.2535	3	1.0	1.2	320.0	154.40	178.12	108.45 NO
1900.	0.2524	3	1.0	1.2	320.0	154.40	186.84	113.58 NO
2000.	0.2496	3	1.0	1.2	320.0	154.40	195.52	118.70 NO

2100.	0.2455	3	1.0	1.2	320.0	154.40	204.16	123.82	NO
2200.	0.2404	3	1.0	1.2	320.0	154.40	212.77	128.92	NO
2300.	0.2348	3	1.0	1.2	320.0	154.40	221.34	134.02	NO
2400.	0.2288	3	1.0	1.2	320.0	154.40	229.88	139.10	NO
2500.	0.2225	3	1.0	1.2	320.0	154.40	238.38	144.18	NO
2600.	0.2162	3	1.0	1.2	320.0	154.40	246.85	149.24	NO
2700.	0.2100	3	1.0	1.2	320.0	154.40	255.29	154.30	NO
2800.	0.2038	3	1.0	1.2	320.0	154.40	263.71	159.34	NO
2900.	0.1979	3	1.0	1.2	320.0	154.40	272.09	164.38	NO
3000.	0.1921	3	1.0	1.2	320.0	154.40	280.44	169.40	NO
3500.	0.1669	3	1.0	1.2	320.0	154.40	321.81	194.38	NO
4000.	0.1495	4	1.5	1.9	480.0	115.85	239.94	79.42	NO
4500.	0.1439	4	1.5	1.9	480.0	115.85	266.62	85.01	NO
5000.	0.1371	4	1.5	1.9	480.0	115.85	292.99	90.38	NO
5500.	0.1299	4	1.5	1.9	480.0	115.85	319.06	95.55	NO
6000.	0.1262	4	1.0	1.3	320.0	146.27	345.42	102.41	NO
6500.	0.1254	5	1.0	1.8	10000.0	107.56	277.35	65.35	NO
7000.	0.1243	5	1.0	1.8	10000.0	107.56	296.32	67.72	NO
7500.	0.1226	5	1.0	1.8	10000.0	107.56	315.13	70.00	NO
8000.	0.1205	5	1.0	1.8	10000.0	107.56	333.81	72.22	NO
8500.	0.1181	5	1.0	1.8	10000.0	107.56	352.34	74.37	NO
9000.	0.1155	5	1.0	1.8	10000.0	107.56	370.75	76.46	NO
9500.	0.1128	5	1.0	1.8	10000.0	107.56	389.03	78.50	NO
10000.	0.1100	5	1.0	1.8	10000.0	107.56	407.20	80.48	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

560.	0.4099	1	1.0	1.1	320.0	159.61	128.71	136.83	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\* INVERSION BREAK-UP FUMIGATION CALC. \*\*\*

CONC (UG/M\*\*3) = 0.3452

DIST TO MAX (M) = 4427.79

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

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CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	0.4099	560.	0.
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INV BREAKUP FUMI	0.3452	4428.	--
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\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

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**UREA GRANULATOR-1 PM**

## SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = 0.502500E-01  
 STACK HEIGHT (M) = 55.0000  
 STACK INSIDE DIAM (M) = 2.1000  
 STACK EXIT VELOCITY (M/S) = 14.5080  
 STACK GAS EXIT TEMP (K) = 323.0000  
 AMBIENT AIR TEMP (K) = 303.0000  
 RECEPTOR HEIGHT (M) = 0.0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 0.0000  
 MIN HORIZ BLDG DIM (M) = 0.0000  
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.

THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX =  $9.712 \text{ M}^{**4}/\text{S}^{**3}$ ; MOM. FLUX =  $217.688 \text{ M}^{**4}/\text{S}^{**2}$ .

\*\*\* FULL METEOROLOGY \*\*\*

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\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

\*\*\*\*\*

Atmospheric condition category:

1 = Very unstable; 2 = Unstable; 3 = Slightly unstable; 4 = Neutral; 5 = Slightly stable; 6 = Stable

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.1051E-05	1	3.0	3.4	960.0	89.87	27.87	15.82 NO
200.	0.4397E-01	1	3.0	3.4	960.0	89.87	50.94	30.92 NO
300.	0.2416	1	3.0	3.4	960.0	89.87	72.45	48.48 NO
400.	0.3499	1	2.0	2.3	640.0	107.31	93.91	72.72 NO
500.	0.3899	1	1.5	1.7	480.0	124.74	114.78	106.53 NO
600.	0.4021	1	1.0	1.1	320.0	159.61	136.20	156.81 NO
700.	0.3584	1	1.0	1.1	320.0	159.61	155.21	215.41 NO
800.	0.3196	1	1.0	1.1	320.0	159.61	173.98	284.58 NO
900.	0.3058	2	1.5	1.7	480.0	124.74	141.66	99.39 NO
1000.	0.2960	2	1.0	1.1	320.0	159.61	156.99	113.31 NO
1100.	0.2952	2	1.0	1.1	320.0	159.61	170.46	124.97 NO
1200.	0.2870	2	1.0	1.1	320.0	159.61	183.83	136.81 NO
1300.	0.2749	2	1.0	1.1	320.0	159.61	197.09	148.79 NO
1400.	0.2716	3	1.5	1.8	480.0	121.26	141.28	85.30 NO
1500.	0.2697	3	1.5	1.8	480.0	121.26	150.25	90.59 NO
1600.	0.2648	3	1.5	1.8	480.0	121.26	159.17	95.87 NO
1700.	0.2578	3	1.5	1.8	480.0	121.26	168.04	101.13 NO
1800.	0.2535	3	1.0	1.2	320.0	154.40	178.12	108.45 NO
1900.	0.2524	3	1.0	1.2	320.0	154.40	186.84	113.58 NO
2000.	0.2496	3	1.0	1.2	320.0	154.40	195.52	118.70 NO

2100.	0.2455	3	1.0	1.2	320.0	154.40	204.16	123.82	NO
2200.	0.2404	3	1.0	1.2	320.0	154.40	212.77	128.92	NO
2300.	0.2348	3	1.0	1.2	320.0	154.40	221.34	134.02	NO
2400.	0.2288	3	1.0	1.2	320.0	154.40	229.88	139.10	NO
2500.	0.2225	3	1.0	1.2	320.0	154.40	238.38	144.18	NO
2600.	0.2162	3	1.0	1.2	320.0	154.40	246.85	149.24	NO
2700.	0.2100	3	1.0	1.2	320.0	154.40	255.29	154.30	NO
2800.	0.2038	3	1.0	1.2	320.0	154.40	263.71	159.34	NO
2900.	0.1979	3	1.0	1.2	320.0	154.40	272.09	164.38	NO
3000.	0.1921	3	1.0	1.2	320.0	154.40	280.44	169.40	NO
3500.	0.1669	3	1.0	1.2	320.0	154.40	321.81	194.38	NO
4000.	0.1495	4	1.5	1.9	480.0	115.85	239.94	79.42	NO
4500.	0.1439	4	1.5	1.9	480.0	115.85	266.62	85.01	NO
5000.	0.1371	4	1.5	1.9	480.0	115.85	292.99	90.38	NO
5500.	0.1299	4	1.5	1.9	480.0	115.85	319.06	95.55	NO
6000.	0.1262	4	1.0	1.3	320.0	146.27	345.42	102.41	NO
6500.	0.1254	5	1.0	1.8	10000.0	107.56	277.35	65.35	NO
7000.	0.1243	5	1.0	1.8	10000.0	107.56	296.32	67.72	NO
7500.	0.1226	5	1.0	1.8	10000.0	107.56	315.13	70.00	NO
8000.	0.1205	5	1.0	1.8	10000.0	107.56	333.81	72.22	NO
8500.	0.1181	5	1.0	1.8	10000.0	107.56	352.34	74.37	NO
9000.	0.1155	5	1.0	1.8	10000.0	107.56	370.75	76.46	NO
9500.	0.1128	5	1.0	1.8	10000.0	107.56	389.03	78.50	NO
10000.	0.1100	5	1.0	1.8	10000.0	107.56	407.20	80.48	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

560.	0.4099	1	1.0	1.1	320.0	159.61	128.71	136.83	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\* INVERSION BREAK-UP FUMIGATION CALC. \*\*\*

CONC (UG/M\*\*3) = 0.3452

DIST TO MAX (M) = 4427.79

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	0.4099	560.	0.
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INV BREAKUP FUMI	0.3452	4428.	--
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\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

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**UREA GRANULATOR-2 NH3**

## SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = 0.329000E-01  
 STACK HEIGHT (M) = 55.0000  
 STACK INSIDE DIAM (M) = 5.5000  
 STACK EXIT VELOCITY (M/S) = 13.8670  
 STACK GAS EXIT TEMP (K) = 323.0000  
 AMBIENT AIR TEMP (K) = 303.0000  
 RECEPTOR HEIGHT (M) = 0.0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 0.0000  
 MIN HORIZ BLDG DIM (M) = 0.0000  
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.

THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 63.676 M\*\*4/S\*\*3; MOM. FLUX = 1364.176 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

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\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

\*\*\*\*\*

Atmospheric condition category:

1 = Very unstable; 2 = Unstable; 3 = Slightly unstable; 4 = Neutral; 5 = Slightly stable; 6 = Stable

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.2870E-09	5	1.0	1.8	10000.0	153.38	22.51	21.94 NO
200.	0.4532E-05	5	1.0	1.8	10000.0	153.38	30.42	28.79 NO
300.	0.1049E-02	1	3.0	3.4	960.0	193.44	75.73	53.26 NO
400.	0.1759E-01	1	3.0	3.4	960.0	193.44	97.24	76.97 NO
500.	0.5087E-01	1	3.0	3.4	960.0	193.44	118.05	110.04 NO
600.	0.6714E-01	1	3.0	3.4	960.0	193.44	138.32	158.66 NO
700.	0.6391E-01	1	2.5	2.8	800.0	221.13	159.53	218.54 NO
800.	0.8934E-01	1	1.0	1.1	471.3	470.32	208.46	306.87 NO
900.	0.1016	1	1.0	1.1	471.3	470.32	224.17	382.03 NO
1000.	0.1014	1	1.0	1.1	471.3	470.32	240.08	469.11 NO
1100.	0.9634E-01	1	1.0	1.1	471.3	470.32	256.14	567.83 NO
1200.	0.9076E-01	1	1.0	1.1	471.3	470.32	272.28	678.05 NO
1300.	0.8568E-01	1	1.0	1.1	471.3	470.32	288.47	799.69 NO
1400.	0.8112E-01	1	1.0	1.1	471.3	470.32	304.68	932.72 NO
1500.	0.7702E-01	1	1.0	1.1	471.3	470.32	320.90	1077.16 NO
1600.	0.7332E-01	1	1.0	1.1	471.3	470.32	337.10	1233.03 NO
1700.	0.6996E-01	1	1.0	1.1	471.3	470.32	353.27	1400.38 NO
1800.	0.6691E-01	1	1.0	1.1	471.3	470.32	369.41	1579.25 NO
1900.	0.6411E-01	1	1.0	1.1	471.3	470.32	385.50	1769.70 NO
2000.	0.6155E-01	1	1.0	1.1	471.3	470.32	401.55	1971.79 NO

2100.	0.5919E-01	1	1.0	1.1	471.3	470.32	417.55	2185.56	NO
2200.	0.5701E-01	1	1.0	1.1	471.3	470.32	433.50	2411.08	NO
2300.	0.5500E-01	1	1.0	1.1	471.3	470.32	449.39	2648.39	NO
2400.	0.5312E-01	1	1.0	1.1	471.3	470.32	465.23	2897.56	NO
2500.	0.5364E-01	2	1.0	1.1	471.3	470.32	367.96	321.38	NO
2600.	0.5413E-01	2	1.0	1.1	471.3	470.32	379.62	333.62	NO
2700.	0.5433E-01	2	1.0	1.1	471.3	470.32	391.27	345.98	NO
2800.	0.5428E-01	2	1.0	1.1	471.3	470.32	402.89	358.43	NO
2900.	0.5402E-01	2	1.0	1.1	471.3	470.32	414.49	370.98	NO
3000.	0.5359E-01	2	1.0	1.1	471.3	470.32	426.07	383.63	NO
3500.	0.4992E-01	2	1.0	1.1	471.3	470.32	483.61	448.03	NO
4000.	0.4547E-01	2	1.0	1.1	471.3	470.32	540.50	514.08	NO
4500.	0.4137E-01	2	1.0	1.1	471.3	470.32	596.74	581.43	NO
5000.	0.3983E-01	3	1.0	1.2	450.6	449.61	455.80	289.34	NO
5500.	0.4037E-01	3	1.0	1.2	450.6	449.61	494.05	311.84	NO
6000.	0.4007E-01	3	1.0	1.2	450.6	449.61	532.06	334.40	NO
6500.	0.3921E-01	3	1.0	1.2	450.6	449.61	569.83	357.01	NO
7000.	0.3800E-01	3	1.0	1.2	450.6	449.61	607.37	379.62	NO
7500.	0.3661E-01	3	1.0	1.2	450.6	449.61	644.66	402.23	NO
8000.	0.3513E-01	3	1.0	1.2	450.6	449.61	681.73	424.82	NO
8500.	0.3365E-01	3	1.0	1.2	450.6	449.61	718.57	447.38	NO
9000.	0.3222E-01	3	1.0	1.2	450.6	449.61	755.20	469.90	NO
9500.	0.3139E-01	5	1.0	1.8	10000.0	153.38	389.76	82.02	NO
10000.	0.3171E-01	5	1.0	1.8	10000.0	153.38	407.89	83.92	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

943.	0.1026	1	1.0	1.1	471.3	470.32	231.15	418.89	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\* INVERSION BREAK-UP FUMIGATION CALC. \*\*\*

CONC (UG/M\*\*3) = 0.8621E-01

DIST TO MAX (M) = 9182.35

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	0.1026	943.	0.
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INV BREAKUP FUMI	0.8621E-01	9182.	--
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\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

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**UREA GRANULATOR-2 PM**

## SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = 0.329000E-01  
 STACK HEIGHT (M) = 55.0000  
 STACK INSIDE DIAM (M) = 5.5000  
 STACK EXIT VELOCITY (M/S) = 13.8670  
 STACK GAS EXIT TEMP (K) = 323.0000  
 AMBIENT AIR TEMP (K) = 303.0000  
 RECEPTOR HEIGHT (M) = 0.0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 0.0000  
 MIN HORIZ BLDG DIM (M) = 0.0000  
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.

THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 63.676 M\*\*4/S\*\*3; MOM. FLUX = 1364.176 M\*\*4/S\*\*2.

## \*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*

## \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

\*\*\*\*\*

Atmospheric condition category:

1 = Very unstable; 2 = Unstable; 3 = Slightly unstable; 4 = Neutral; 5 = Slightly stable; 6 = Stable

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.2870E-09	5	1.0	1.8	10000.0	153.38	22.51	21.94 NO
200.	0.4532E-05	5	1.0	1.8	10000.0	153.38	30.42	28.79 NO
300.	0.1049E-02	1	3.0	3.4	960.0	193.44	75.73	53.26 NO
400.	0.1759E-01	1	3.0	3.4	960.0	193.44	97.24	76.97 NO
500.	0.5087E-01	1	3.0	3.4	960.0	193.44	118.05	110.04 NO
600.	0.6714E-01	1	3.0	3.4	960.0	193.44	138.32	158.66 NO
700.	0.6391E-01	1	2.5	2.8	800.0	221.13	159.53	218.54 NO
800.	0.8934E-01	1	1.0	1.1	471.3	470.32	208.46	306.87 NO
900.	0.1016	1	1.0	1.1	471.3	470.32	224.17	382.03 NO
1000.	0.1014	1	1.0	1.1	471.3	470.32	240.08	469.11 NO
1100.	0.9634E-01	1	1.0	1.1	471.3	470.32	256.14	567.83 NO
1200.	0.9076E-01	1	1.0	1.1	471.3	470.32	272.28	678.05 NO
1300.	0.8568E-01	1	1.0	1.1	471.3	470.32	288.47	799.69 NO
1400.	0.8112E-01	1	1.0	1.1	471.3	470.32	304.68	932.72 NO
1500.	0.7702E-01	1	1.0	1.1	471.3	470.32	320.90	1077.16 NO
1600.	0.7332E-01	1	1.0	1.1	471.3	470.32	337.10	1233.03 NO
1700.	0.6996E-01	1	1.0	1.1	471.3	470.32	353.27	1400.38 NO
1800.	0.6691E-01	1	1.0	1.1	471.3	470.32	369.41	1579.25 NO
1900.	0.6411E-01	1	1.0	1.1	471.3	470.32	385.50	1769.70 NO
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2100.	0.5919E-01	1	1.0	1.1	471.3	470.32	417.55	2185.56 NO
2200.	0.5701E-01	1	1.0	1.1	471.3	470.32	433.50	2411.08 NO



2300.	0.5500E-01	1	1.0	1.1	471.3	470.32	449.39	2648.39	NO
2400.	0.5312E-01	1	1.0	1.1	471.3	470.32	465.23	2897.56	NO
2500.	0.5364E-01	2	1.0	1.1	471.3	470.32	367.96	321.38	NO
2600.	0.5413E-01	2	1.0	1.1	471.3	470.32	379.62	333.62	NO
2700.	0.5433E-01	2	1.0	1.1	471.3	470.32	391.27	345.98	NO
2800.	0.5428E-01	2	1.0	1.1	471.3	470.32	402.89	358.43	NO
2900.	0.5402E-01	2	1.0	1.1	471.3	470.32	414.49	370.98	NO
3000.	0.5359E-01	2	1.0	1.1	471.3	470.32	426.07	383.63	NO
3500.	0.4992E-01	2	1.0	1.1	471.3	470.32	483.61	448.03	NO
4000.	0.4547E-01	2	1.0	1.1	471.3	470.32	540.50	514.08	NO
4500.	0.4137E-01	2	1.0	1.1	471.3	470.32	596.74	581.43	NO
5000.	0.3983E-01	3	1.0	1.2	450.6	449.61	455.80	289.34	NO
5500.	0.4037E-01	3	1.0	1.2	450.6	449.61	494.05	311.84	NO
6000.	0.4007E-01	3	1.0	1.2	450.6	449.61	532.06	334.40	NO
6500.	0.3921E-01	3	1.0	1.2	450.6	449.61	569.83	357.01	NO
7000.	0.3800E-01	3	1.0	1.2	450.6	449.61	607.37	379.62	NO
7500.	0.3661E-01	3	1.0	1.2	450.6	449.61	644.66	402.23	NO
8000.	0.3513E-01	3	1.0	1.2	450.6	449.61	681.73	424.82	NO
8500.	0.3365E-01	3	1.0	1.2	450.6	449.61	718.57	447.38	NO
9000.	0.3222E-01	3	1.0	1.2	450.6	449.61	755.20	469.90	NO
9500.	0.3139E-01	5	1.0	1.8	10000.0	153.38	389.76	82.02	NO
10000.	0.3171E-01	5	1.0	1.8	10000.0	153.38	407.89	83.92	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

943.	0.1026	1	1.0	1.1	471.3	470.32	231.15	418.89	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\* INVERSION BREAK-UP FUMIGATION CALC. \*\*\*

CONC (UG/M\*\*3) = 0.8621E-01

DIST TO MAX (M) = 9182.35

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	0.1026	943.	0.
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INV BREAKUP FUMI	0.8621E-01	9182.	--
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\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

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The interpretation of model results including background ambient concentrations are described in section 4.3.4.2.