

Daikin America Decatur Plant Monitoring

January 15, 2004

EXP000161

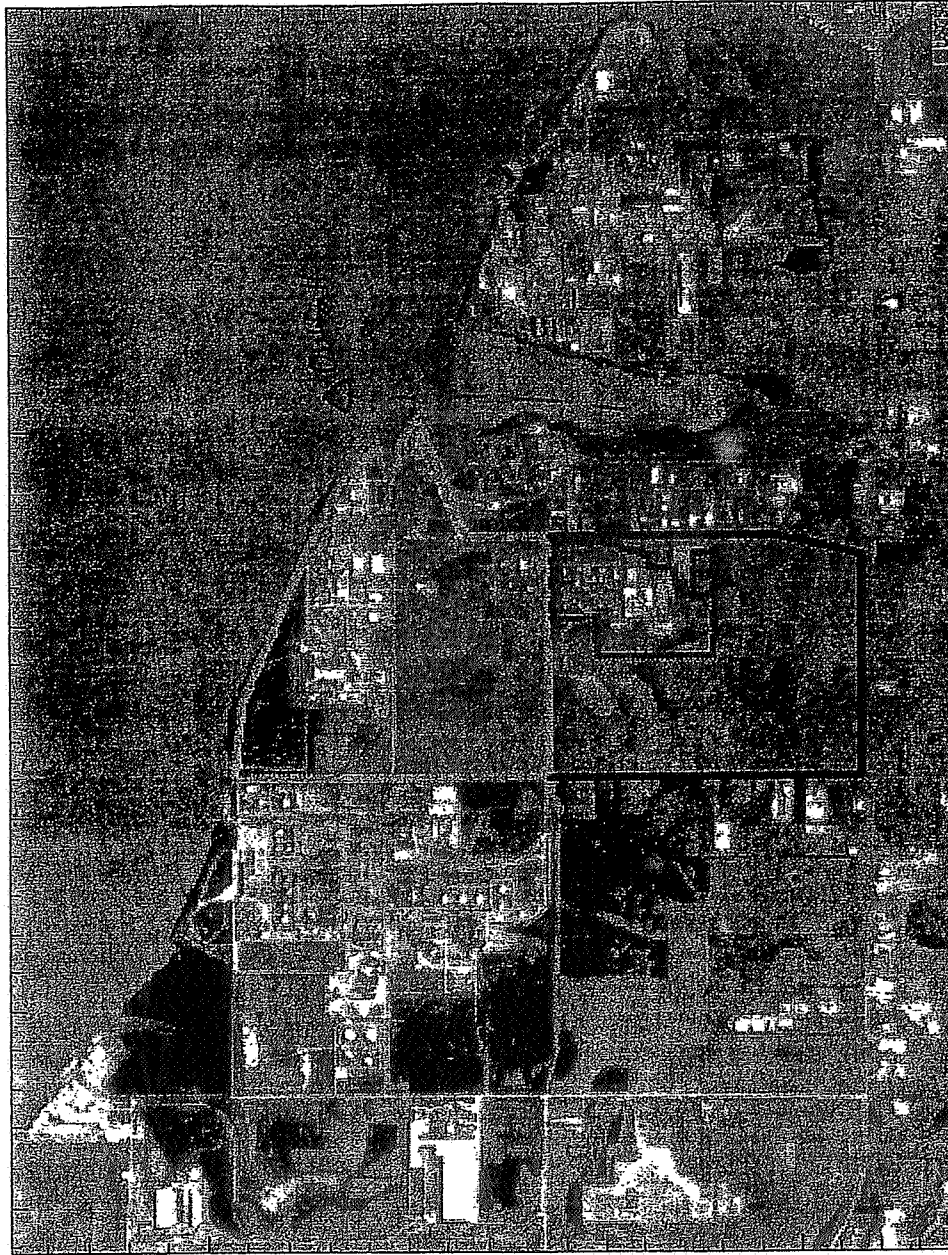
Daikin America Decatur Plant

Monitoring

100 Acres

- Background
- Air modeling
- Surface water/sludge
- Groundwater/soil
- Next steps

Figure A-2. Aerial Photograph
Decatur, Alabama



- ▲ Daikin Fenceline
- ▲ 3M/Daikin Property Boundaries
- ▲ 3M Fenceline
- ⊕ Source locations

UTM East (km)

Image courtesy of USGS
Edge markings shown in Universal Transverse Mercator Coordinates, Zone 16.

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Background

- Daikin completed original construction of the facility in 1993
- Fluoropolymer manufacturing operations started in early 1994
- Telomer finishing facility constructed in 2000 and commercial production started in 2001

Daikin America Decatur Plant Stack Monitoring /Air Dispersion Modeling

- Dispersion modeled using the EPA approved industrial source complex short term 3 (ISCSTS) model
- The 12-month period between October 5, 2002 and October 4, 2003 was selected to assess ambient impacts resulting from actual emissions of PFOA from Daikin's operations
- PFOA emissions during this period was **397** pounds

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Dispersion Modeling Results

	Fence line $\mu\text{g}/\text{m}^3$	3M/Daikin Property Boundary $\mu\text{g}/\text{m}^3$
Daikin contribution only	0.13	0.02
Daikin and Dyneon Cumulative	0.13	0.02

Based on Daikin emission rate of 397 pounds in 1 year period

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Monitoring – Surface Water and Sludge

- Two effluent points
 - Effluent to Tennessee river from Fluoropolymer process
 - Outfall to POTW from Telomer Finishing process
- Wastewater treatment sludge to subpart D landfill
- Storm water runoff – 2 locations

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Monitoring – Groundwater/Soil

- Six points selected based on likely groundwater flow in subsurface above limestone bedrock
- Wells drilled and sampled in November 2003
- Only 2 of 6 wells produced water.
- During the drilling of the wells, soil samples were taken every 5 feet down to groundwater
- Split spoon sampler

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Monitoring - Soils

Preliminary Results (ppb)

Depth (Feet)	MW - 1	MW - 2	MW - 3	MW - 4	MW - 5	MW - 6
0	530	1165	NR	22.7	48.9	52.2
5	NR	3200	416	73.8	9.69	163
10	111	60.8	41.8	770	205	954
15		47.8	39.3	416	88.4	596
20		50.1	30.3	121	259	183
25		79.1		NR	138	86.4
30		76.4		49.0		
35		25.1				

↘

NR - No Recovery

EXP000169

Site heavily regraded in 1992. Doesn't accurately represent true elev. of each point.

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Monitoring - Soils

- No clear pattern
- Potential sources of contamination ?
 - Land application of sludge
 - Deposition from air emissions

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Next Steps

- Air releases
 - Considering air deposition monitoring
 - Substantial reduction in air emissions
- Surface water
 - Monitor storm water runoff – 2 locations
 - Continue effluent monitoring
- Soils/groundwater
 - Better characterize hydrogeology
 - Additional groundwater monitoring
 - Additional soil monitoring