MITC IN OUR AIR, APPENDIX 1: Air Monitoring for MITC in Franklin County, Washington State

	Residential 2007	**Residential 2005**	**Near Field – Chemigation 2007**	**Near-Field Shank 2007**	**Near-Field Chemigation 2006**	**Near-Field Shank 2006**
Study Details	Monitors at 5 residences and 1 business Week of Sept. 17 to Nov 3rd Sampling 3 days per week; many gaps with no samples Two 12 hour samples per day, except for week of October 22nd, when test tubes were changed every 4 hours	Monitors at 3 homes and one business. Week of Sept 26th through Oct. 25th Sampling 3 days per week; therefore many gaps with no samples. Two 12 hour samples per day throughout study. Major rain event during first week may have lowered MITC concentrations..	4 monitors around field, NSEW, 50 feet from field. Samples taken before, during and up to 8 days post-application. Some 4 hour, some 8, some 12 hour samples. Gaps with no samples. Application stopped and started due to high winds, Field size: 90 acres of a 120 acre plot Application rate: 40 gal/acre (170 lb/acre). Sectagon 42 Stubble?: Mustard greens incorporated. Low pressure system, no end guns Same time as shank monitoring.	4 monitors around field, NSEW, 50 feet from field. Samples taken before, during and up to 8 days post-application. Some 4 hour, some 8, some 12 hour samples. Gaps with no samples Application did not halt; Only done in daytime. Field size: ~154 acres Application rate: 40 gal/acre (170 lb/acre) Sectagon 42 Stubble?: Rotating from corn silage to potato. Same time as chemigation monitoring.	8 monitors around the field, NSEW, 98feet (30 meters) from field. Sampling during and up to four days after fumigation. Four and eight hour samples, with some 2 hour samples. Gaps with no samples. Field size: 33 acres Application rate: 40 gal/acre (170 lb/acre) Sectagon 42 Stubble?:: rotating from corn silage to potato. Low pressure system, end guns operating Done 3 weeks before shank. Ideal weather conditions.	8 monitors around the field, NSEW, 98 feet (30 meters) from field. Sampling during and up to four days after fumigation. Four and eight hour samples, with some 2 hour samples. Gaps with no samples. Field size: 119 acres Application rate: 40 gal/acre (170 lb/acre) Sectagon 42 Stubble?: rotating from corn silage to potato. Done 3 weeks aftr chemigation; cooler temperatures. Ideal weather conditions.

MITC Detections	MITC quantifiable on all but 2 of the 26 testing dates. MITC found in 543 of 609 samples (89%) above level of quantification.	MITC quantifiable on every day of study. MITC found in 199 of 201 samples (99%)	MITC present on all sides of the field during every sampling period. MITC found in 126/128 samples (98.44%)	MITC present on all sides of the field during every sampling period. MITC found in 120/120 samples (100%)	MITC present on all sides of the field during every sampling period. MITC found in 122/122 samples (100%)	MITC was present before the application at 6 of the 8 locations around the field. It was present in all of the final samples that were collected. MITC found in 111/124 samples (89.52%)
Acute LOC (22 ppb)	Exceeded at all 6 locations on Oct. 23. Exceeded on Oct. 22 at 2 of the 6 locations. Highest concentration: 40 ppb (120 ug/m^3)	Lack of 4 hour samples reduced chance of documenting exceedances. Exceeded on Oct. 21st at one location. Highest concentration: 67 ug/m^3 (22 ppb)	LOC exceeded several times. Three of four locations had exceedances. Maximum downwind concentration: 93 ppb (283 ug/m^3) (4 times LOC) Even maximum *average* of samples from all around the field was 25 ppb (77 ug/m^3), an exceedance of LOC	Not exceeded based on samples taken, averaging air from 4 or more hours. Maximum downwind concentration: 10 ppb	Exceeded during chemigation at 2 of 8 testing locations, immediately after at 4 locations, and during the next sampling period at 5 locations. Twelve hours out from the application's end, exceeded at 3 locations. Highest downwind concentration: 987 ug/m^3 (329 ppb); nearly 15 times the LOC. Even the average of concentrations from around the field (as opposed to just downwind) reached 224 ug/m^3, well over 3 times LOC.	Exceeded at two locations during the application, and four in the first post-application sampling period. Highest concentration downwind: 141 ug.m^3 (47 ppb) more than twice the LOC.
EPA Subchronic LOC (5 ppb)	Exceeded at one or more sites on three different days.	Exceeded over at least one 24 hour period (Oct. 5).	LOC exceeded for 24 hours or more on at least two occasions.	Gaps in testing preclude analysis. Several samples had	Gaps in testing made it so there were no 24 hour periods for	Sampling gaps made it so there were no 24 hour

	Gaps in testing limit data on MITC levels for 24 hour periods.	Gaps in testing preclude further analysis.	Gaps in sampling preclude analysis of whether there were more LOC exceedances.	levels higher than 5 ppb, but it is not possible to determine exposure over a 24 hour period.	which data was collected. 69 of 122 samples had concentrations over 5 ppb.	periods in which sampling was done. 48 of 124 samples (38%) had MITC concentrations above 5 ppb.
California Subchronic LOC (1 ppb) (3 ug/m3)	Exceeded in at least six different 24 hour periods. Each of the six locations had at least one exceedance. Testing gaps preclude full accounting. More than 1/3 of all samples had concentrations above 1 ppb. Average air concentration over the 7 weeks was 1.5 ppb, greater than the LOC.	Exceeded at one or more locations on at least 7 days. More than half of the samples taken had MITC at levels greater than 1 ppb. Time-weighted 30 day average concentration was 10 ug/m^3 (3.3 ppb), i.e. greater than CA subchronic LOC. Gaps in testing limit numbers of 24 hour periods for which data is available.	Average for all the monitors around the field exceeded LOC for 24 hours or more on at least two occations. At one location, the exceedance lasted 36 - 48 hours. 76 of 128 samples (56%) > 1 ppb. Ignoring the gaps, average for full study period (8 days) was 4.7 ppb; greater than LOC	Exceeded for at least one 24 period on each side of the field. One exceedance was for a 60 hour period. Even the average of concentrations from all around the field (as opposed to just downwind) exceeded the CA LOC for a 24 hour period. 67 of 120 samples had MITC concentrations greater than 1 ppb. Gaps in sampling preclude further analysis. Ignoring gaps, average for full testing period was 1.5 ppb.	Gaps in testing made it so there were no 24 hour periods for which data was collected 101 of 122 samples (82%) had concentrations at or above 1 ppb. In other words, nearly all the time when sampling was occurring, MITC was in the air at levels which would exceed the CA LOC if inhaled over 24 hours. No average for the full study period was calculated.	Sampling gaps. Exceedances documented in three periods of over 24 hours. 77 of 124 (62%) samples had MITC concentrations at or above 1 ppg. No average was calculated for the full testing period.
Chronic LOC (EPA: 0.5 ppb; CA: 0.1 ppb)	Assuming 0 MITC in air rest of year, annual average for the six sites is 0.20 ppb, greater than CA chronic LOC.					