Winter/Spring 2017 Seasonal Ambient Monitoring for Methyl Isothiocyanate (MITC) in Fresno County

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October 16, 2018

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Monitoring Report Approval

Report Title: Winter/Spring 2017 Seasonal Ambient Monitoring for Methyl Isothiocyanate (MITC) in Fresno County

Project Lead: James Pham, Air Pollution Specialist

Approval: The following monitoring report has been reviewed and approved by the Community Air Monitoring Branch.

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Community Air Monitoring Branch

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Executive Summary

Winter/Spring 2017 Seasonal Ambient Monitoring for Methyl Isothiocyanate (MITC) in Fresno County

At the request of the Department of Pesticide Regulation (DPR), the California Air Resources Board (CARB) conducted an air monitoring study for the soil fumigant Methyl Isothiocyanate (MITC) in Fresno County from January 30, 2017 to May 18, 2017. The monitoring was conducted in communities near historical high-use areas. There were six sampling locations throughout the County including four at public schools, one at a CARB air monitoring station, and one at the San Joaquin Valley Air Pollution Control District (SJVAPCD) air monitoring station.

Air samples of 24 hours in duration were collected four days per week for 16 weeks. Six primary samplers were set up around Fresno County in the cities of Huron, Cantua Creek, Tranquillity, Fresno, and San Joaquin City. An additional sampler for quality control (QC) samples was set up in Huron due to it being the expectant high-use site (based on historical use data). The Fresno site was the designated background site. Samples were collected on coconut charcoal sorbent tubes with a flow rate of 500 standard cubic centimeters per minute (SCCM). The samples were analyzed by gas chromatography with a mass selective detector (GS/MSD) by CARB's Northern Laboratory Branch (NLB) in Sacramento.

MITC Sorbent Tube Results

Many of the samples had concentrations that were below the method detection limit (<0.040 µg/Sample) or were present only at trace levels (between 0.040 µg/Sample and 0.20 µg/Sample). Due to this, the ambient MITC concentrations of most samples could not be calculated with certainty. Of the 335 valid primary samples, only 33 had quantifiable MITC concentrations, 106 had trace levels, and 196 had non-detectable levels. The quantifiable MITC concentrations ranged from 0.32 to 5.84 µg/m^3. The three samples with the highest concentrations were from the San Joaquin City site on 3/9/17 (5.84 µg/m^3), Huron Middle School site on 4/5/17 (2.31 µg/m^3), and Cantua Creek site on 1/30/17 (1.87 µg/m^3). The results are summarized in the table below:

Site	Invalid	Non-Detect Count	Trace Level Count	Quantifiable Count
Cantua Creek	5	36	14	8
Fresno	6	51	6	0
Huron – Chesnut HS	5	28	23	7
Huron – Middle School	3	30	23	7
San Joaquin City	8	30	21	4
Tranquillity	16	21	19	7
Total	43	196	106	33

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1.0 Background

At the request of the Department of Pesticide Regulation (DPR) and as part of the proposed monitoring requests included in the 2016 Budget Act, the California Air Resources Board (CARB) conducted air monitoring for the soil fumigant Methyl Isothiocyanate (MITC). MITC is the active breakdown product of several precursors (metam sodium, metam potassium, or dazomet) in water. It is generally used for controlling a variety of fungi and nematodes. Its Chemical Abstract Service registry number is 556-61-6.

Data presented by DPR in 2016 showed that Fresno County had the second highest annual reported MITC usage for years 2012-2014. The report showed that for those years, the total reported use in Fresno County was nearly 10 million pounds of active ingredient. Although Kern County had the highest total reported statewide usage, network monitoring efforts were in place, and thus DPR requested sampling in Fresno County. Past data indicates that the usage in Fresno County peaks during the months of January to March (Attachment A).

A total of 398 valid samples which included 335 primary samples and 63 quality control samples (16 collocated samples, 16 field spikes, 16 trip spikes, and 15 field blanks) were collected from January 30, 2017 to May 18, 2017. Monitoring consisted of four sequential 24-hour sampling periods for each week of the 16 week study.

2.0 Sampling Sites

The locations for air monitoring were selected by working with the local school districts and the local Air Pollution Control District in the desired monitoring area. Six primary samplers were set up in the following locations:

- Huron – Chesnut High School
- Huron – Huron Middle School
- Cantua Creek – Cantua Creek Elementary School
- Tranquillity – San Joaquin Valley Air Pollution Control District (SJVAPCD) network air monitoring station
- San Joaquin City – San Joaquin Elementary School
- Fresno – CARB network air monitoring station (Background)

With Huron being the historically high-use city in the County, both quality control and primary samplers were set up at Huron Middle School.

The Fresno site was set up to collect background level samples due to its distance away from the agricultural parts of the county. In theory, the Fresno samples should have low or non-detectable levels of MITC.

The global positioning satellite coordinates of each sampler are included in Table 1. The coordinates were obtained from Google Maps, which uses the World Geodetic System 1984 (WGS84) datum. Also included in Table 1 are the sampler probe heights from the ground as the samplers were placed on top of buildings and shipping containers located at the sites.

Figure 1 shows an aerial view of the monitored area with the sampling sites marked. Figure 2 shows a sampler set up on top of the SJVAPCD air monitoring station.

Photos of the samplers at each site can be seen in Attachment B.

Table 1: Sampler Locations

City	Site Location Description	GPS Coordinates (WGS84)	Probe Height From Ground (m)
Fresno	CARB Air Monitoring Site (Background)	36°47'7.49"N 119°46'23.61"W	4.8
Huron	Chesnut High School	36°12'36.85"N 120° 5'55.68"W	4.2
Huron	Huron Middle School	36°11'53.75"N 120° 6'1.61"W	3.0
Cantua Creek	Cantua Creek Elementary School	36°30'10.28"N 120°19'16.27"W	3.0
Tranquillity	San Joaquin APCD Site	36°38'3.29"N 120°22'56.39"W	3.3
San Joaquin	San Joaquin Elementary School	36°36'39.01"N 120°11'12.19"W	4.2

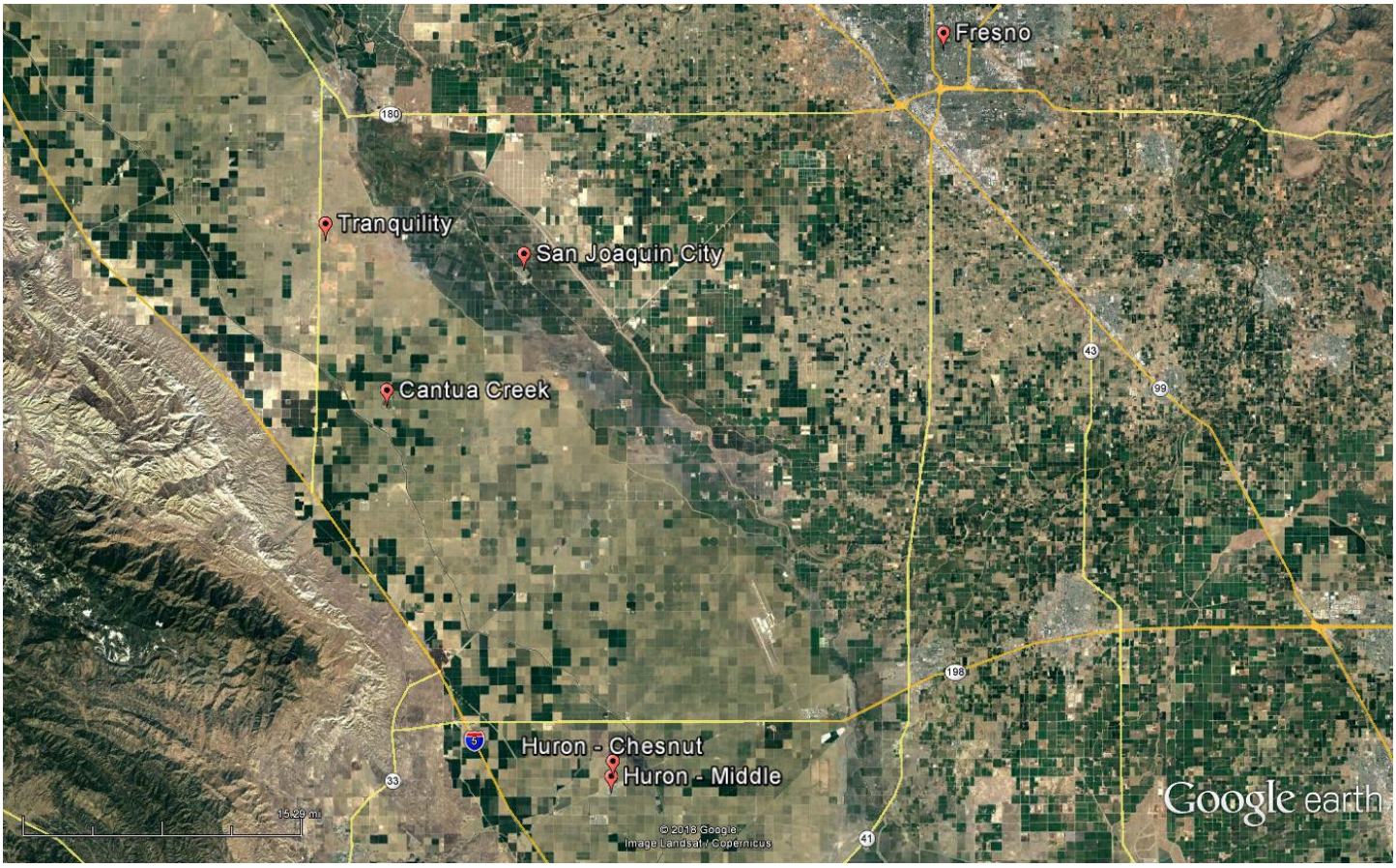


Figure 1: Aerial Overview of Monitored Area

Figure 2: MITC Sampler at the SJVAPCD Tranquillity Site

3.0 Methods

The study began on Monday, January 30, 2017 and the final sample was retrieved on May 18, 2017. Monitoring occurred for four continuous 24-hour periods each week. The sampling process was designed to collect MITC on a coconut charcoal sorbent tube (SKC #226-09). Samples were collected by passing a measured volume of ambient air through the sorbent tubes mounted on sampling trees. The inlet of each sampling tree was approximately 1.7 meters above the sampling platform.

Samples were collected in the same sequence for each 24-hour sampling period (Huron Middle School, Huron Chesnut High, Cantua Creek, Tranquillity, San Joaquin City, and Fresno).

Field staff was on site to set up each daily sample. The procedure required for a new sorbent tube to be opened on both ends and attached to the sampler. Prior to the start of each 24-hour sample, a leak check, a flow check, and flow adjustments were completed. To perform a leak check, the opened sorbent tube was installed, the pump turned on, and the inlet end of the sorbent tube was capped to verify if there was a leak in the system. Following the leak check, field staff connected a digital mass flow meter to the inlet end of the sorbent tube, and the flow rate was checked. If the flow rate was not within 10% of 500 SCCM (between 450 and 550 SCCM), it was adjusted to 500 SCCM by adjusting the inline rotameter. The flow rate was accurately measured using an Alicat Whisper digital mass flow meter with a range of 0-2 LPM. If any of the checks failed, the problems were remedied before sampling commenced. After successful completion of the leak and flow checks, the sampler was left on to sample. The flow rate was re-checked at the end of each 24-hour sampling period just prior to stopping the pump and removing of the sorbent tube. For the samples to be valid, the ending flow rate must have been within 20% of 500 SCCM (between 400 and 600 SCCM), and the elapsed time meter must have indicated a run time between 23.0 and 25.0 hours. Samples out of the specified flow or time ranges were invalidated[1]. The certification document for the mass flow meter can be seen in Attachment C.

At the end of each 24-hour sampling period, the pertinent sampling information was recorded and the sampled sorbent tubes were placed in individual capped culture tubes with an identification label affixed to each sample. Each culture tube was immediately placed in a cooler with dry ice and stored in a frozen state for the remainder of the week. At the end of the week, the collected samples were transported back to CARB MLD's Northern Laboratory Branch (NLB) and stored in a laboratory freezer until analysis.

At the completion of sampling day four each week, the first sample of the following week was set up. The sorbent tubes were opened and set up on the sampler for the day one samples of the following week. The pump remained off during this time and there was no airflow through the sample media until the pumped automatically turned on at pre-programmed time, typically three to five days later. The leak and flow checks for these samples were completed during set-up. On days two through four of each week, field staff were on site to manually stop the sampler, retrieve the samples, set up the subsequent sample, and manually start the sampler. More details about the sampling procedure can be found in the "Sampling Protocol for Methyl Isothiocyanate (MITC) Study" (Attachment B).

The QC samples were collected at the Huron Middle School site on an identical secondary sampler following the same procedures. The spiked sorbent tubes for the trip and field spikes were prepared one business day prior to weekly sampling and stored in the laboratory freezer until field staff picked them up for transport. The spikes were transported in a frozen state except when the field spikes were used for sampling. The trip spikes remained frozen for the duration of the week.

The completed MITC field logs which contain the sample start and end times, start and end flow rates, and elapsed time meter readings for each sample can be found in Attachment E. Site nomenclature for this study was based upon the location of each sampler and the daily sample number. Additional abbreviations were appended to the QC samples to identify the type of QC sample collected (collocated, blank, field spike or trip spike).

Sampler Locations
HC – Huron Chesnut High School
HM – Huron Middle School (Primary & QC)
CC – Cantua Creek
TY – Tranquillity
SJ – San Joaquin City
FO – Fresno

Quality Control Codes
FB – Field Blank
CO – Collocated
FS – Field Spike
TS – Trip Spike

Examples

TY – 1	=	Tranquillity, sample day 1
HM – 2 FS	=	Huron Middle School, sample day 2, Field Spike

The NLB extracted and analyzed all of the samples from this study. The collected sorbent tube samples were analyzed following the laboratory standard operating procedure titled "Air Sampling and Analysis of Methyl Isothiocyanate" (See Attachment F). Following this procedure, the charcoal sorbent tubes were extracted with five milliliters of 0.1% carbon disulfide (CS_2) in ethyl acetate (EA). The samples were analyzed by gas chromatography with a mass selective detector (GS/MSD). The full laboratory results are included in "Methyl Isothiocyanate (MITC) Analytical Results for Air Monitoring Samples Collected in Fresno County in February through May 2017" (See Attachment G).

1. Some samples with 22.9 hour ETM values were validated and flagged. See section 5.1 for more information.

4.0 Deviations from Protocol

The recommended monitoring period was 12 weeks. However, due to the increase in MITC application permit requests at the Fresno County Agricultural Commissioner's office, sampling was extended to 16 weeks. During this time, monitoring was conducted on a primarily Monday-through-Thursday schedule. Upon notice from DPR of the increase in permit requests, sampling was conducted to include weekend samples. Saturday and Sunday samples were collected starting in week nine.

Due to the concerns of the high number of non-detectable MITC concentrations and possible non-representative samples in the first couple of weeks of the study, an increase the sample flow rate was implemented. The sample flow rate was increased to 750 SCCM from 2/13/17 to 2/22/17. In a laboratory environment, samples were spiked with high levels of MITC. The MITC was detected in the breakthrough portion of the sorbent tubes at the 750 SCCM flow rate. However, in the field samples with ambient levels, MITC was not detected in the breakthrough portion of the sorbent tubes. The increase in flow rate did not increase the number of quantifiable samples, eliminating possible field and laboratory shortfalls with the ND samples. The sampling flow rate was reverted back to 500 SCCM on 2/23/17 and maintained for the rest of the study. The affected samples were flagged for the flow deviation.

On 2/16/17 (week three), sampling was cancelled due to unsafe weather conditions. During that week, three sampling periods were collected rather than the scheduled four.

Prior to the start of the study, field log sheets were created and contained pre-assigned sample numbers for each of the expected samples (four per week). Only three quality control samples were sampled each week, and therefore there was one unused sample number per week at the Huron Middle School site. These unused sample numbers were: HM-4, HM-5, HM-9, HM-13, HM-17, HM-21, HM-25, HM-29, HM-33, HM-37, HM-41, HM-45, HM-49, HM-53, HM-57, and HM-61.

The dates for sample set #21 (week six, day one) were incorrectly written on the log sheets with a start date of 3/7/17. The actual start date was 3/6/17. The date was corrected in the included tables.

Although the original monitoring recommendation requested 10% of collocated samples, a prior agreement between DPR and CARB allowed for one collocated sample per week, and the protocol was written as such. Sixteen weekly collocated samples were collected over the 16-week study at the Huron Middle School site.

5.0 Results

Many of the samples had concentrations that were below the method detection limit (<0.040 µg/Sample) or were present only at trace levels (between 0.040 µg/Sample and 0.20 µg/Sample). Due to this, the ambient MITC concentrations of most samples could not be calculated with certainty. Of the 335 valid primary samples, only 33 had quantifiable MITC concentrations, 106 had trace levels, and 196 had non-detectable levels. The quantifiable MITC concentrations ranged from 0.32 to 5.84 µg/m^3. The three samples with the highest concentrations were from the San Joaquin City site on 3/9/17 (5.84 µg/m^3), Huron Middle School site on 4/5/17 (2.31 µg/m^3), and Cantua Creek site on 1/30/17 (1.87 µg/m^3).

Table 2 summarizes the individual site results of the study.

Table 2 – Sampling Results Summary

Site	Invalid	Non-Detect Count	Trace Level Count	Quantifiable Count
Cantua Creek	5	36	14	8
Fresno	6	51	6	0
Huron – Chesnut HS	5	28	23	7
Huron – Middle School	3	30	23	7
San Joaquin City	8	30	21	4
Tranquillity	16	21	19	7
Total	43	196	106	33

The full results separated by site location are included in Tables 3 through 8.

5.1 Invalidation and Flagging

Samples were invalidated for one of two reasons:

1. Flow rate out of specifications
    a. Ending flow rate was not within 20% of the target flow rate.
2. Run time out of specifications
    a. The sample did not run for between 23.0 and 25.0 hours as indicated by the elapsed time meter (ETM)[1].

There were 35 invalidated samples during the study:

- Cantua Creek
    - CC-05, CC-09, CC-13, CC-61, CC-64
- Fresno
    - FO-01, FO-05, FO-09, FO-37, FO-49, FO-57
- Huron Chesnut HS
    - HC-02, HC-05, HC-29, HC-41, HC-44
- Huron Middle School
    - HM-05, HM-23, HM-25
- San Joaquin City
    - SJ-01, SJ-02, SJ-05, SJ-09, SJ-25, SJ-29, SJ-33, SJ-34
- Tranquillity
    - TY-05, TY-09, TY-13, TY-20, TY-22, TY-23, TY-24, TY-27, TY-33, TY-34, TY-35, TY-41, TY-46, TY-58, TY-62, TY-64

1. Some samples with 22.9 hour ETM values were validated and flagged.

Eighteen samples were flagged for low sampling times. These samples were collected after 23.0 hours as indicated by the field logs. However, because the ETM only shows six-minute increments, the ETM did not display 23.0 hours, and displayed 22.9 hours instead.

- Cantua Creek
    - CC-07, CC-10, CC-15
- Fresno
    - FO-07, FO-10, FO-14, FO-19, FO-25
- Huron Chesnut HS
    - HC-04, HC-19
- Huron Middle School
    - HM-08, HM-34
- San Joaquin City
    - SJ-16, SJ-27, SJ-49
- Tranquillity
    - TY-36, TY-49, TY-52

Table 3 – Cantua Creek Results

Log #	Sample Start	Sampling Time (Hours)	Flow Start	Flow End	Average Flow	Volume (m^3)	MITC (µg/sample)	MITC (µg/m^3)
CC-01	1/30/17	24.7	500	475	487.5	0.72	1.35	1.87
CC-02	1/31/17	23.3	500	477	488.5	0.68	0.35	0.51
CC-03	2/1/17	23.3	525	520	522.5	0.73	0.25	0.34
CC-04	2/2/17	23.3	501	545	523.0	0.73	Trace	Trace
CC-05	2/6/17	Invalid - Run time out of specifications						
CC-06	2/7/17	23.1	529	495	512.0	0.71	ND	ND
CC-07*	2/8/17	22.9	520	493	506.5	0.70	0.70	1.01
CC-08	2/9/17	23.0	515	521	518.0	0.71	Trace	Trace
CC-09	2/13/17	Invalid - Run time out of specifications						
CC-10*	2/14/17	22.9	754	770	762.0	1.05	0.60	0.57
CC-11	2/15/17	23.3	751	794	772.5	1.08	1.10	1.02
CC-12	2/16/17	Cancelled due to inclement weather						
CC-13	2/20/17	Invalid - Run time out of specifications						
CC-14	2/21/17	23.1	746	765	755.5	1.05	ND	ND
CC-15*	2/22/17	22.9	750	751	750.5	1.03	ND	ND
CC-16	2/23/17	23.0	548	545	546.5	0.75	ND	ND
CC-17	2/27/17	23.5	541	527	534.0	0.75	ND	ND
CC-18	2/28/17	23.5	515	510	512.5	0.72	Trace	Trace
CC-19	3/1/17	23.0	518	506	512.0	0.71	ND	ND
CC-20	3/2/17	23.6	517	488	502.5	0.71	ND	ND
CC-21	3/6/17	24.0	527	547	537.0	0.77	ND	ND
CC-22	3/7/17	23.4	537	526	531.5	0.75	ND	ND
CC-23	3/8/17	23.7	539	530	534.5	0.76	Trace	Trace
CC-24	3/9/17	23.0	536	538	537.0	0.74	ND	ND
CC-25	3/13/17	23.0	542	507	524.5	0.72	Trace	Trace
CC-26	3/14/17	23.1	521	511	516.0	0.72	0.30	0.42
CC-27	3/15/17	23.1	524	526	525.0	0.73	0.45	0.62
CC-28	3/16/17	23.9	524	527	525.5	0.75	ND	ND
CC-29	3/20/17	23.0	529	523	526.0	0.73	Trace	Trace
CC-30	3/21/17	23.8	538	539	538.5	0.77	ND	ND
CC-31	3/22/17	23.7	548	520	534.0	0.76	ND	ND
CC-32	3/23/17	23.1	528	518	523.0	0.72	Trace	Trace
CC-33	3/26/17	23.5	538	555	546.5	0.77	ND	ND
CC-34	3/27/17	23.3	529	514	521.5	0.73	ND	ND
CC-35	3/28/17	23.4	529	500	514.5	0.72	Trace	Trace
CC-36	3/29/17	23.0	528	505	516.5	0.71	ND	ND
CC-37	4/2/17	23.0	530	513	521.5	0.72	Trace	Trace
CC-38	4/3/17	23.1	545	521	533.0	0.74	Trace	Trace
CC-39	4/4/17	23.8	524	490	507.0	0.72	ND	ND
CC-40	4/5/17	23.6	550	520	535.0	0.76	Trace	Trace
CC-41	4/9/17	23.4	538	532	535.0	0.75	ND	ND
CC-42	4/10/17	23.0	528	504	516.0	0.71	ND	ND
CC-43	4/11/17	23.2	522	473	497.5	0.69	Trace	Trace
CC-44	4/12/17	24.0	534	557	545.5	0.79	ND	ND
CC-45	4/16/17	23.4	527	574	550.5	0.77	Trace	Trace
CC-46	4/17/17	24.2	547	548	547.5	0.79	ND	ND
CC-47	4/18/17	23.9	545	528	536.5	0.77	ND	ND
CC-48	4/19/17	23.0	544	548	546.0	0.75	ND	ND
CC-49	4/22/17	23.0	537	505	521.0	0.72	ND	ND
CC-50	4/23/17	24.1	525	516	520.5	0.75	ND	ND
CC-51	4/24/17	23.1	534	509	521.5	0.72	Trace	Trace
CC-52	4/25/17	23.0	527	536	531.5	0.73	ND	ND
CC-53	4/30/17	23.9	529	507	518.0	0.74	ND	ND
CC-54	5/1/17	23.6	534	519	526.5	0.75	ND	ND
CC-55	5/2/17	23.9	520	515	517.5	0.74	ND	ND
CC-56	5/3/17	23.2	515	513	514.0	0.72	ND	ND
CC-57	5/6/17	23.1	522	569	545.5	0.76	ND	ND
CC-58	5/7/17	23.1	530	465	497.5	0.69	ND	ND
CC-59	5/8/17	23.0	531	507	519.0	0.72	ND	ND
CC-60	5/9/17	23.0	532	529	530.5	0.73	ND	ND
CC-61	5/14/17	Invalid - Run time out of specifications						
CC-62	5/15/17	23.5	524	518	521.0	0.73	ND	ND
CC-63	5/16/17	23.8	521	509	515.0	0.74	ND	ND
CC-64	5/17/17	Invalid - Run time out of specifications						

Some values truncated for simplicity
*Samples highlighted in yellow have been flagged for having a sampling time <23.0 hours.
Samples highlighted in grey had an intended deviant flow rate of 750 SCCM.
Non-detectable (ND) values are <0.04 µg/Sample or <0.0556 µg/m^3 (based off of a 500 SCCM flow rate for 24 hours)
Trace values are <0.20 µg/sample or <0.2778 µg/m^3

Table 4 - Fresno Results

Log #	Sample Start	Sampling Time (Hours)	Flow Start	Flow End	Average Flow	Volume (m^3)	MITC (µg/sample)	MITC (µg/m^3)
FO-01	1/30/17	Invalid - Flow rate out of specifications						
FO-02	1/31/17	24.5	502	490	496.0	0.73	ND	ND
FO-03	2/1/17	23.0	528	468	498.0	0.69	Trace	Trace
FO-04	2/2/17	23.0	509	588	548.5	0.76	Trace	Trace
FO-05	2/6/17	Invalid - Run time out of specifications						
FO-06	2/7/17	23.6	524	528	526.0	0.74	ND	ND
FO-07*	2/8/17	22.9	527	519	523.0	0.72	ND	ND
FO-08	2/9/17	23.1	530	521	525.5	0.73	ND	ND
FO-09	2/13/17	Invalid - Run time out of specifications						
FO-10*	2/14/17	22.9	752	724	738.0	1.01	ND	ND
FO-11	2/15/17	23.6	749	752	750.5	1.06	Trace	Trace
FO-12	2/16/17	Cancelled due to inclement weather						
FO-13	2/20/17	24.7	750	786	768.0	1.14	ND	ND
FO-14*	2/21/17	22.9	743	775	759.0	1.04	ND	ND
FO-15	2/22/17	23.0	734	721	727.5	1.00	ND	ND
FO-16	2/23/17	23.0	549	546	547.5	0.76	ND	ND
FO-17	2/27/17	23.3	546	536	541.0	0.76	ND	ND
FO-18	2/28/17	23.2	524	496	510.0	0.71	Trace	Trace
FO-19*	3/1/17	22.9	525	501	513.0	0.70	ND	ND
FO-20	3/2/17	24.0	524	436	480.0	0.69	ND	ND
FO-21	3/6/17	23.9	540	543	541.5	0.78	ND	ND
FO-22	3/7/17	23.6	518	554	536.0	0.76	ND	ND
FO-23	3/8/17	23.6	538	523	530.5	0.75	ND	ND
FO-24	3/9/17	23.1	525	563	544.0	0.75	ND	ND
FO-25*	3/13/17	22.9	535	574	554.5	0.76	ND	ND
FO-26	3/14/17	23.0	521	513	517.0	0.71	ND	ND
FO-27	3/15/17	23.1	521	533	527.0	0.73	ND	ND
FO-28	3/16/17	23.5	518	542	530.0	0.75	ND	ND
FO-29	3/20/17	23.0	513	558	535.5	0.74	Trace	Trace
FO-30	3/21/17	23.9	524	540	532.0	0.76	ND	ND
FO-31	3/22/17	23.5	544	526	535.0	0.75	ND	ND
FO-32	3/23/17	23.2	527	493	510.0	0.71	ND	ND
FO-33	3/26/17	23.5	550	578	564.0	0.80	ND	ND
FO-34	3/27/17	23.2	530	537	533.5	0.74	ND	ND
FO-35	3/28/17	23.3	528	537	532.5	0.74	ND	ND
FO-36	3/29/17	23.0	527	562	544.5	0.75	ND	ND
FO-37	4/2/17	Invalid - Flow rate out of specifications						
FO-38	4/3/17	23.0	544	485	514.5	0.71	ND	ND
FO-39	4/4/17	23.6	550	546	548.0	0.78	ND	ND
FO-40	4/5/17	23.8	549	522	535.5	0.76	Trace	Trace
FO-41	4/9/17	23.0	541	588	564.5	0.78	ND	ND
FO-42	4/10/17	23.0	527	452	489.5	0.68	ND	ND
FO-43	4/11/17	23.1	539	472	505.5	0.70	ND	ND
FO-44	4/12/17	24.1	537	587	562.0	0.81	ND	ND
FO-45	4/16/17	23.4	528	551	539.5	0.76	ND	ND
FO-46	4/17/17	24.2	536	546	541.0	0.79	ND	ND
FO-47	4/18/17	23.8	518	531	524.5	0.75	ND	ND
FO-48	4/19/17	23.0	531	560	545.5	0.75	ND	ND
FO-49	4/22/17	Invalid - Flow rate out of specifications						
FO-50	4/23/17	24.0	529	511	520.0	0.75	ND	ND
FO-51	4/24/17	23.0	526	497	511.5	0.71	ND	ND
FO-52	4/25/17	23.0	523	513	518.0	0.71	ND	ND
FO-53	4/30/17	23.8	533	501	517.0	0.74	ND	ND
FO-54	5/1/17	23.7	536	520	528.0	0.75	ND	ND
FO-55	5/2/17	23.9	538	529	533.5	0.77	ND	ND
FO-56	5/3/17	23.2	528	477	502.5	0.70	ND	ND
FO-57	5/6/17	Invalid - Flow rate out of specifications						
FO-58	5/7/17	23.2	530	515	522.5	0.73	ND	ND
FO-59	5/8/17	23.0	535	521	528.0	0.73	ND	ND
FO-60	5/9/17	23.0	526	543	534.5	0.74	ND	ND
FO-61	5/14/17	23.8	525	543	534.0	0.76	ND	ND
FO-62	5/15/17	24.4	546	559	552.5	0.81	ND	ND
FO-63	5/16/17	23.6	533	558	545.5	0.77	ND	ND
FO-64	5/17/17	23.1	539	513	526.0	0.73	ND	ND

Some values truncated for simplicity
*Samples highlighted in yellow have been flagged for having a sampling time <23.0 hours.
Samples highlighted in grey had an intended deviant flow rate of 750 SCCM.
Non-detectable (ND) values are <0.04 µg/Sample or <0.0556 µg/m^3 (based off of a 500 SCCM flow rate for 24 hours)
Trace values are <0.20 µg/sample or <0.2778 µg/m^3

Table 5 - Huron Chesnut HS Results

Log #	Sample Start	Sampling Time (Hours)	Flow Start	Flow End	Average Flow	Volume (m^3)	MITC (µg/sample)	MITC (µg/m^3)
HC-01	1/30/17	24.5	501	500	500.5	0.74	ND	ND
HC-02	1/31/17	Invalid - Flow rate out of specifications						
HC-03	2/1/17	23.4	533	575	554.0	0.78	Trace	Trace
HC-04*	2/2/17	22.9	501	513	507.0	0.70	Trace	Trace
HC-05	2/6/17	Invalid - Run time out of specifications						
HC-06	2/7/17	23.2	531	522	526.5	0.73	ND	ND
HC-07	2/8/17	23.1	522	562	542.0	0.75	ND	ND
HC-08	2/9/17	23.0	514	500	507.0	0.70	Trace	Trace
HC-09	2/13/17	24.6	749	737	743.0	1.10	Trace	Trace
HC-10	2/14/17	23.3	751	759	755.0	1.06	0.40	0.38
HC-11	2/15/17	23.3	750	772	761.0	1.06	0.70	0.66
HC-12	2/16/17	Cancelled due to inclement weather						
HC-13	2/20/17	24.7	752	734	743.0	1.10	Trace	Trace
HC-14	2/21/17	23.1	734	736	735.0	1.02	ND	ND
HC-15	2/22/17	23.0	747	761	754.0	1.04	Trace	Trace
HC-16	2/23/17	23.0	531	598	564.5	0.78	Trace	Trace
HC-17	2/27/17	23.6	520	526	523.0	0.74	Trace	Trace
HC-18	2/28/17	23.6	515	531	523.0	0.74	Trace	Trace
HC-19*	3/1/17	22.9	515	516	515.5	0.71	Trace	Trace
HC-20	3/2/17	23.7	512	513	512.5	0.73	Trace	Trace
HC-21	3/6/17	24.1	523	526	524.5	0.76	Trace	Trace
HC-22	3/7/17	23.4	530	524	527.0	0.74	Trace	Trace
HC-23	3/8/17	23.5	538	533	535.5	0.76	Trace	Trace
HC-24	3/9/17	23.1	534	539	536.5	0.74	Trace	Trace
HC-25	3/13/17	23.1	549	533	541.0	0.75	0.45	0.60
HC-26	3/14/17	23.0	520	510	515.0	0.71	0.65	0.91
HC-27	3/15/17	23.4	517	530	523.5	0.73	Trace	Trace
HC-28	3/16/17	23.8	517	511	514.0	0.73	Trace	Trace
HC-29	3/20/17	Invalid - Flow rate out of specifications						
HC-30	3/21/17	23.9	525	545	535.0	0.77	0.50	0.65
HC-31	3/22/17	23.7	524	548	536.0	0.76	Trace	Trace
HC-32	3/23/17	23.0	533	547	540.0	0.75	1.10	1.48
HC-33	3/26/17	23.5	531	512	521.5	0.74	ND	ND
HC-34	3/27/17	23.0	524	543	533.5	0.74	ND	ND
HC-35	3/28/17	23.3	518	524	521.0	0.73	ND	ND
HC-36	3/29/17	23.1	522	528	525.0	0.73	Trace	Trace
HC-37	4/2/17	23.1	527	549	538.0	0.75	Trace	Trace
HC-38	4/3/17	23.2	542	567	554.5	0.77	ND	ND
HC-39	4/4/17	23.0	535	538	536.5	0.74	Trace	Trace
HC-40	4/5/17	24.4	541	549	545.0	0.80	1.05	1.32
HC-41	4/9/17	Invalid - Run time out of specifications						
HC-42	4/10/17	23.0	510	515	512.5	0.71	ND	ND
HC-43	4/11/17	23.2	512	476	494.0	0.69	ND	ND
HC-44	4/12/17	Invalid - Flow rate out of specifications						
HC-45	4/16/17	23.4	530	535	532.5	0.75	ND	ND
HC-46	4/17/17	24.2	542	539	540.5	0.78	ND	ND
HC-47	4/18/17	23.9	541	495	518.0	0.74	ND	ND
HC-48	4/19/17	23.0	521	562	541.5	0.75	ND	ND
HC-49	4/22/17	23.1	540	575	557.5	0.77	Trace	Trace
HC-50	4/23/17	23.8	525	530	527.5	0.75	ND	ND
HC-51	4/24/17	23.2	520	497	508.5	0.71	Trace	Trace
HC-52	4/25/17	23.0	524	496	510.0	0.70	ND	ND
HC-53	4/30/17	23.8	523	561	542.0	0.77	ND	ND
HC-54	5/1/17	23.6	534	526	530.0	0.75	ND	ND
HC-55	5/2/17	23.9	531	516	523.5	0.75	ND	ND
HC-56	5/3/17	23.0	518	516	517.0	0.71	ND	ND
HC-57	5/6/17	23.0	522	544	533.0	0.74	ND	ND
HC-58	5/7/17	23.1	539	485	512.0	0.71	ND	ND
HC-59	5/8/17	23.0	526	500	513.0	0.71	ND	ND
HC-60	5/9/17	23.0	530	520	525.0	0.72	ND	ND
HC-61	5/14/17	23.6	525	533	529.0	0.75	ND	ND
HC-62	5/15/17	24.1	531	518	524.5	0.76	ND	ND
HC-63	5/16/17	23.9	522	501	511.5	0.73	ND	ND
HC-64	5/17/17	23.0	540	560	550.0	0.76	ND	ND

Some values truncated for simplicity
*Samples highlighted in yellow have been flagged for having a sampling time <23.0 hours.
Samples highlighted in grey had an intended deviant flow rate of 750 SCCM.
Non-detectable (ND) values are <0.04 µg/Sample or <0.0556 µg/m^3 (based off of a 500 SCCM flow rate for 24 hours)
Trace values are <0.20 µg/sample or <0.2778 µg/m^3

Table 6 - Huron Middle School Results

Log #	Sample Start	Sampling Time (Hours)	Flow Start	Flow End	Average Flow	Volume (m^3)	MITC (µg/sample)	MITC (µg/m^3)
HM-01	1/30/17	24.0	500	497	498.5	0.72	ND	ND
HM-02	1/31/17	23.6	500	474	487.0	0.69	Trace	Trace
HM-03	2/1/17	23.3	530	563	546.5	0.76	Trace	Trace
HM-04	2/2/17	23.0	502	509	505.5	0.70	Trace	Trace
HM-05	2/6/17	Invalid - Run time out of specifications						
HM-06	2/7/17	23.1	535	525	530.0	0.73	ND	ND
HM-07	2/8/17	23.0	527	518	522.5	0.72	ND	ND
HM-08*	2/9/17	22.9	536	534	535.0	0.74	Trace	Trace
HM-09	2/13/17	24.1	750	715	732.5	1.06	Trace	Trace
HM-10	2/14/17	23.2	749	752	750.5	1.04	0.50	0.48
HM-11	2/15/17	23.1	752	681	716.5	0.99	1.10	1.11
HM-12	2/16/17	Cancelled due to inclement weather						
HM-13	2/20/17	24.8	749	709	729.0	1.08	Trace	Trace
HM-14	2/21/17	23.0	750	695	722.5	1.00	ND	ND
HM-15	2/22/17	23.0	746	718	732.0	1.01	ND	ND
HM-16	2/23/17	23.0	540	509	524.5	0.72	Trace	Trace
HM-17	2/27/17	23.8	540	567	553.5	0.79	ND	ND
HM-18	2/28/17	23.0	501	514	507.5	0.70	Trace	Trace
HM-19	3/1/17	23.4	510	497	503.5	0.71	Trace	Trace
HM-20	3/2/17	23.5	513	465	489.0	0.69	Trace	Trace
HM-21	3/6/17	23.7	526	580	553.0	0.79	Trace	Trace
HM-22	3/7/17	23.4	527	508	517.5	0.73	Trace	Trace
HM-23	3/8/17	Invalid - Run time out of specifications						
HM-24	3/9/17	23.0	544	516	530.0	0.73	Trace	Trace
HM-25	3/13/17	Invalid - Flow rate out of specifications						
HM-26	3/14/17	23.1	527	503	515.0	0.71	0.90	1.26
HM-27	3/15/17	23.5	521	446	483.5	0.68	0.30	0.44
HM-28	3/16/17	23.7	528	502	515.0	0.73	Trace	Trace
HM-29	3/20/17	23.0	525	538	531.5	0.73	Trace	Trace
HM-30	3/21/17	23.9	540	538	539.0	0.77	0.55	0.71
HM-31	3/22/17	23.7	532	533	532.5	0.76	Trace	Trace
HM-32	3/23/17	23.0	522	530	526.0	0.73	1.00	1.38
HM-33	3/26/17	23.6	537	555	546.0	0.77	Trace	Trace
HM-34*	3/27/17	22.9	521	521	521.0	0.72	Trace	Trace
HM-35	3/28/17	23.4	519	509	514.0	0.72	ND	ND
HM-36	3/29/17	23.2	524	494	509.0	0.71	Trace	Trace
HM-37	4/2/17	23.0	530	540	535.0	0.74	Trace	Trace
HM-38	4/3/17	23.3	534	483	508.5	0.71	ND	ND
HM-39	4/4/17	23.8	545	539	542.0	0.77	Trace	Trace
HM-40	4/5/17	23.5	542	533	537.5	0.76	1.75	2.31
HM-41	4/9/17	23.4	536	512	524.0	0.74	ND	ND
HM-42	4/10/17	23.0	529	495	512.0	0.71	ND	ND
HM-43	4/11/17	23.2	533	541	537.0	0.75	Trace	Trace
HM-44	4/12/17	23.8	528	512	520.0	0.74	ND	ND
HM-45	4/16/17	23.3	532	563	547.5	0.77	ND	ND
HM-46	4/17/17	23.9	544	549	546.5	0.78	ND	ND
HM-47	4/18/17	23.9	544	518	531.0	0.76	ND	ND
HM-48	4/19/17	23.1	526	519	522.5	0.72	ND	ND
HM-49	4/22/17	23.8	538	596	567.0	0.81	ND	ND
HM-50	4/23/17	23.4	523	517	520.0	0.73	ND	ND
HM-51	4/24/17	23.0	527	481	504.0	0.70	ND	ND
HM-52	4/25/17	23.0	529	509	519.0	0.72	ND	ND
HM-53	4/30/17	23.5	533	530	531.5	0.75	ND	ND
HM-54	5/1/17	23.7	530	533	531.5	0.76	ND	ND
HM-55	5/2/17	23.9	534	508	521.0	0.75	ND	ND
HM-56	5/3/17	23.1	520	508	514.0	0.71	ND	ND
HM-57	5/6/17	23.0	535	580	557.5	0.77	ND	ND
HM-58	5/7/17	23.1	545	469	507.0	0.70	ND	ND
HM-59	5/8/17	23.0	549	487	518.0	0.71	Trace	Trace
HM-60	5/9/17	23.0	533	549	541.0	0.75	ND	ND
HM-61	5/14/17	23.5	527	478	502.5	0.71	ND	ND
HM-62	5/15/17	24.0	535	581	558.0	0.80	ND	ND
HM-63	5/16/17	23.9	545	563	554.0	0.79	ND	ND
HM-64	5/17/17	23.1	533	508	520.5	0.72	ND	ND

Some values truncated for simplicity
*Samples highlighted in yellow have been flagged for having a sampling time <23.0 hours.
Samples highlighted in grey had an intended deviant flow rate of 750 SCCM.
Non-detectable (ND) values are <0.04 µg/Sample or <0.0556 µg/m^3 (based off of a 500 SCCM flow rate for 24 hours)
Trace values are <0.20 µg/sample or <0.2778 µg/m^3

Table 7 - San Joaquin City Results

Log #	Sample Start	Sampling Time (Hours)	Flow Start	Flow End	Average Flow	Volume (m^3)	MITC (µg/sample)	MITC (µg/m^3)
SJ-01	1/30/17	Invalid - Flow rate out of specifications						
SJ-02	1/31/17	Invalid - Flow rate out of specifications						
SJ-03	2/1/17	23.0	528	464	496.0	0.68	0.35	0.51
SJ-04	2/2/17	23.0	505	496	500.5	0.69	Trace	Trace
SJ-05	2/6/17	Invalid - Run time out of specifications						
SJ-06	2/7/17	23.4	528	530	529.0	0.74	ND	ND
SJ-07	2/8/17	23.0	529	521	525.0	0.72	ND	ND
SJ-08	2/9/17	23.0	522	445	483.5	0.67	Trace	Trace
SJ-09	2/13/17	Invalid - Run time out of specifications						
SJ-10	2/14/17	23.0	749	688	718.5	0.99	Trace	Trace
SJ-11	2/15/17	23.5	749	719	734.0	1.03	0.45	0.43
SJ-12	2/16/17	Cancelled due to inclement weather						
SJ-13	2/20/17	24.8	750	781	765.5	1.14	Trace	Trace
SJ-14	2/21/17	23.1	748	796	772.0	1.07	ND	ND
SJ-15	2/22/17	23.0	741	761	751.0	1.04	ND	ND
SJ-16*	2/23/17	22.9	547	540	543.5	0.75	ND	ND
SJ-17	2/27/17	23.2	538	531	534.5	0.74	ND	ND
SJ-18	2/28/17	23.1	524	513	518.5	0.72	Trace	Trace
SJ-19	3/1/17	23.3	519	505	512.0	0.72	Trace	Trace
SJ-20	3/2/17	23.9	520	500	510.0	0.73	Trace	Trace
SJ-21	3/6/17	23.9	524	541	532.5	0.76	Trace	Trace
SJ-22	3/7/17	23.7	543	524	533.5	0.76	ND	ND
SJ-23	3/8/17	23.5	529	506	517.5	0.73	Trace	Trace
SJ-24	3/9/17	23.3	548	529	538.5	0.75	4.40	5.84
SJ-25	3/13/17	Invalid - Run time out of specifications						
SJ-26	3/14/17	23.0	520	517	518.5	0.72	0.75	1.05
SJ-27*	3/15/17	22.9	520	526	523.0	0.72	Trace	Trace
SJ-28	3/16/17	23.8	523	504	513.5	0.73	Trace	Trace
SJ-29	3/20/17	Invalid - Run time out of specifications						
SJ-30	3/21/17	24.8	540	530	535.0	0.80	Trace	Trace
SJ-31	3/22/17	23.6	528	542	535.0	0.76	Trace	Trace
SJ-32	3/23/17	23.1	543	510	526.5	0.73	Trace	Trace
SJ-33	3/26/17	Invalid - Run time out of specifications						
SJ-34	3/27/17	Invalid - Run time out of specifications						
SJ-35	3/28/17	23.4	525	486	505.5	0.71	Trace	Trace
SJ-36	3/29/17	23.0	532	520	526.0	0.73	Trace	Trace
SJ-37	4/2/17	23.0	534	516	525.0	0.72	Trace	Trace
SJ-38	4/3/17	23.0	534	496	515.0	0.71	ND	ND
SJ-39	4/4/17	23.7	535	509	522.0	0.74	Trace	Trace
SJ-40	4/5/17	23.7	545	544	544.5	0.77	Trace	Trace
SJ-41	4/9/17	23.1	547	540	543.5	0.75	ND	ND
SJ-42	4/10/17	23.0	526	512	519.0	0.72	ND	ND
SJ-43	4/11/17	23.0	526	490	508.0	0.70	Trace	Trace
SJ-44	4/12/17	24.0	528	521	524.5	0.76	ND	ND
SJ-45	4/16/17	23.4	520	558	539.0	0.76	ND	ND
SJ-46	4/17/17	24.4	540	586	563.0	0.82	ND	ND
SJ-47	4/18/17	23.8	549	501	525.0	0.75	ND	ND
SJ-48	4/19/17	23.0	548	577	562.5	0.78	ND	ND
SJ-49*	4/22/17	22.9	535	515	525.0	0.72	ND	ND
SJ-50	4/23/17	23.9	526	520	523.0	0.75	ND	ND
SJ-51	4/24/17	23.0	525	501	513.0	0.71	ND	ND
SJ-52	4/25/17	23.0	527	497	512.0	0.71	ND	ND
SJ-53	4/30/17	23.9	532	505	518.5	0.74	ND	ND
SJ-54	5/1/17	23.7	513	498	505.5	0.72	ND	ND
SJ-55	5/2/17	23.9	522	508	515.0	0.74	ND	ND
SJ-56	5/3/17	23.2	525	511	518.0	0.72	ND	ND
SJ-57	5/6/17	23.3	539	586	562.5	0.79	Trace	Trace
SJ-58	5/7/17	23.0	536	470	503.0	0.69	ND	ND
SJ-59	5/8/17	23.0	524	463	493.5	0.68	ND	ND
SJ-60	5/9/17	23.0	531	530	530.5	0.73	ND	ND
SJ-61	5/14/17	23.8	531	502	516.5	0.74	ND	ND
SJ-62	5/15/17	24.4	547	562	554.5	0.81	ND	ND
SJ-63	5/16/17	23.7	547	521	534.0	0.76	ND	ND
SJ-64	5/17/17	23.0	521	490	505.5	0.70	ND	ND

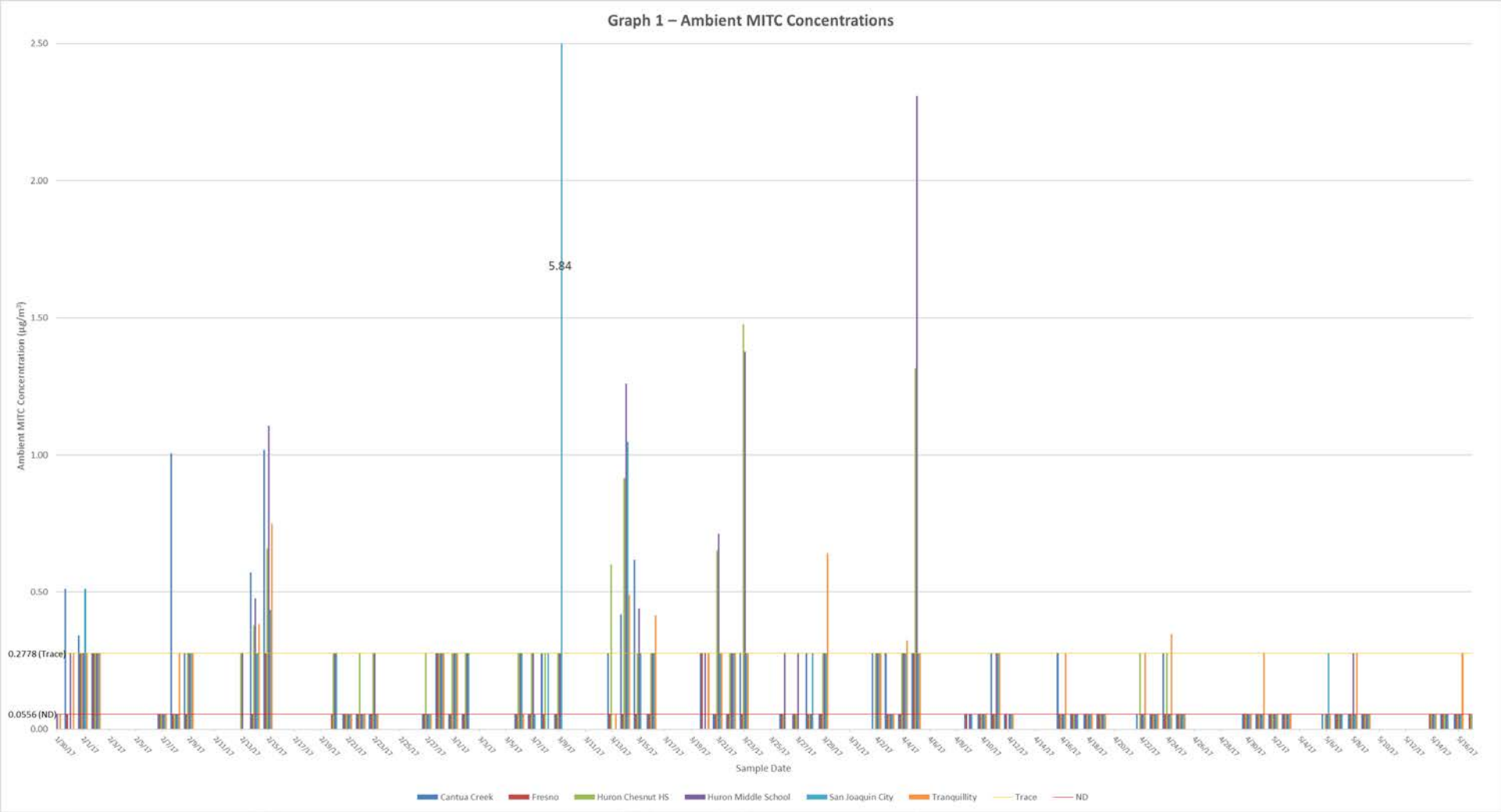
Some values truncated for simplicity
*Samples highlighted in yellow have been flagged for having a sampling time <23.0 hours.
Samples highlighted in grey had an intended deviant flow rate of 750 SCCM.
Non-detectable (ND) values are <0.04 µg/Sample or <0.0556 µg/m^3 (based off of a 500 SCCM flow rate for 24 hours)
Trace values are <0.20 µg/sample or <0.2778 µg/m^3

Table 8 - Tranquillity Results

Log #	Sample Start	Sampling Time (Hours)	Flow Start	Flow End	Average Flow	Volume (m^3)	MITC (µg/sample)	MITC (µg/m^3)
TY-01	1/30/17	24.6	500	465	482.5	0.71	ND	ND
TY-02	1/31/17	24.1	500	418	459	0.66	Trace	Trace
TY-03	2/1/17	23.0	528	499	513.5	0.71	Trace	Trace
TY-04	2/2/17	23.2	500	567	533.5	0.74	Trace	Trace
TY-05	2/6/17	Invalid - Run time out of specifications						
TY-06	2/7/17	23.4	530	527	528.5	0.74	ND	ND
TY-07	2/8/17	23.0	530	505	517.5	0.71	Trace	Trace
TY-08	2/9/17	23.0	530	515	522.5	0.72	Trace	Trace
TY-09	2/13/17	Invalid - Run time out of specifications						
TY-10	2/14/17	23.1	754	751	752.5	1.04	0.40	0.38
TY-11	2/15/17	23.4	751	770	760.5	1.07	0.80	0.75
TY-12	2/16/17	Cancelled due to inclement weather						
TY-13	2/20/17	Invalid - Run time out of specifications						
TY-14	2/21/17	23.0	750	724	737	1.02	ND	ND
TY-15	2/22/17	23.0	749	750	749.5	1.03	ND	ND
TY-16	2/23/17	23.0	549	427	488	0.67	ND	ND
TY-17	2/27/17	23.4	550	589	569.5	0.80	ND	ND
TY-18	2/28/17	23.6	522	569	545.5	0.77	Trace	Trace
TY-19	3/1/17	23.0	504	482	493	0.68	Trace	Trace
TY-20	3/2/17	Invalid - Run time out of specifications						
TY-21	3/6/17	24.0	526	507	516.5	0.74	ND	ND
TY-22	3/7/17	Invalid - Run time out of specifications						
TY-23	3/8/17	Invalid - Run time out of specifications						
TY-24	3/9/17	Invalid - Run time out of specifications						
TY-25	3/13/17	23.0	531	522	526.5	0.73	ND	ND
TY-26	3/14/17	23.0	518	518	518	0.71	0.35	0.49
TY-27	3/15/17	Invalid - Run time out of specifications						
TY-28	3/16/17	23.5	520	501	510.5	0.72	0.30	0.42
TY-29	3/20/17	23.0	535	523	529	0.73	Trace	Trace
TY-30	3/21/17	23.9	520	498	509	0.73	Trace	Trace
TY-31	3/22/17	23.6	530	489	509.5	0.72	Trace	Trace
TY-32	3/23/17	23.1	549	510	529.5	0.73	Trace	Trace
TY-33	3/26/17	Invalid - Flow rate out of specifications						
TY-34	3/27/17	Invalid - Run time out of specifications						
TY-35	3/28/17	Invalid - Run time out of specifications						
TY-36*	3/29/17	22.9	524	496	510	0.70	0.45	0.64
TY-37	4/2/17	23.0	530	544	537	0.74	Trace	Trace
TY-38	4/3/17	23.2	549	496	522.5	0.73	ND	ND
TY-39	4/4/17	23.8	532	551	541.5	0.77	0.25	0.32
TY-40	4/5/17	23.6	548	449	498.5	0.71	Trace	Trace
TY-41	4/9/17	Invalid - Flow rate out of specifications						
TY-42	4/10/17	23.0	532	522	527	0.73	ND	ND
TY-43	4/11/17	23.0	534	496	515	0.71	Trace	Trace
TY-44	4/12/17	24.0	536	548	542	0.78	ND	ND
TY-45	4/16/17	23.5	526	484	505	0.71	Trace	Trace
TY-46	4/17/17	Invalid - Flow rate out of specifications						
TY-47	4/18/17	23.7	548	511	529.5	0.75	ND	ND
TY-48	4/19/17	23.0	551	546	548.5	0.76	ND	ND
TY-49*	4/22/17	22.9	520	535	527.5	0.72	Trace	Trace
TY-50	4/23/17	24.0	524	533	528.5	0.76	ND	ND
TY-51	4/24/17	23.2	528	502	515	0.72	0.25	0.35
TY-52*	4/25/17	22.9	524	520	522	0.72	ND	ND
TY-53	4/30/17	24.0	534	521	527.5	0.76	ND	ND
TY-54	5/1/17	23.6	523	522	522.5	0.74	Trace	Trace
TY-55	5/2/17	23.8	531	535	533	0.76	ND	ND
TY-56	5/3/17	23.3	537	517	527	0.74	ND	ND
TY-57	5/6/17	23.2	522	460	491	0.68	ND	ND
TY-58	5/7/17	Invalid - Flow rate out of specifications						
TY-59	5/8/17	23.0	527	534	530.5	0.73	Trace	Trace
TY-60	5/9/17	23.0	522	522	522	0.72	ND	ND
TY-61	5/14/17	23.8	534	440	487	0.70	ND	ND
TY-62	5/15/17	Invalid - Flow rate out of specifications						
TY-63	5/16/17	23.9	522	530	526	0.75	Trace	Trace
TY-64	5/17/17	Invalid - Run time out of specifications						

Some values truncated for simplicity
*Samples highlighted in yellow have been flagged for having a sampling time <23.0 hours.
Samples highlighted in grey had an intended deviant flow rate of 750 SCCM.
Non-detectable (ND) values are <0.04 µg/Sample or <0.0556 µg/m^3 (based off of a 500 SCCM flow rate for 24 hours)
Trace values are <0.20 µg/sample or <0.2778 µg/m^3

A time series graph of the site-to-site MITC concentrations is included in Graph 1 (Ambient MITC Concentrations). At weeks 3 and 7, there were quantifiable values present at nearly all of the sites. After April (week 10 onward), there were very few samples that had detectable values of MITC.



The vertical (y) axis was shortened to enhance the detail of the graph. The 3/9/17 sample for San Joaquin City had a concentration of 5.84 µg/m^3.

6.0 Quality Control Results

Field QC samples consisted of 16 collocated samples, 16 field spikes, 16 trip spikes, and 15 field blanks.

The Relative Percent Difference (RPD) of the collocated samples for MITC ranged from -30.87% to 0.37% with an average of -10.32%. Some values were not quantifiable because the concentration values were below the laboratory method's EQL.

The RPD for sample HM-27 and its collocated sample was -30.87%. The collocated sample had a large discrepancy in the ending flow rate and that may have attributed to the high RPD. HM-27 had an average flow rate of 484 SCCM while the collocated sample had an average flow rate of 550 SCCM.

The formula for calculating the RPD values for Table 9 is as follows:

$$RPD = \frac{2\left(Collocated\ \mu g/m^3 - Sample\ \mu g/m^3\right)}{Collocated\ \mu g/m^3 + Sample\ \mu g/m^3}$$

Table 9 – Collocated Relative Percent Difference

Sample Name	Volume (m^3)	MITC (µg/sample)	MITC (µg/m^3)	Relative Percent Difference
HM-01	0.72	ND	ND	
HM-01 CO	0.71	ND	ND	
HM-06	0.73	ND	ND	
HM-06 CO*	0.72	ND	ND	
HM-11	0.99	1.10	1.11	-0.45%
HM-11 CO	1.04	1.15	1.10	
HM-14	1.00	ND	ND	
HM-14 CO*	1.07	ND	ND	
HM-19	0.71	Trace	Trace	
HM-19 CO	0.71	Trace	Trace	
HM-22	0.73	Trace	Trace	
HM-22 CO	0.76	Trace	Trace	
HM-27	0.68	0.30	0.44	-30.87%
HM-27 CO	0.78	0.25	0.32	
HM-30	0.77	0.55	0.71	0.37%
HM-30 CO	0.77	0.55	0.71	
HM-35	0.72	ND	ND	
HM-35 CO	0.74	ND	ND	
HM-38	0.71	ND	ND	
HM-38 CO	0.79	ND	ND	
HM-43	0.75	Trace	Trace	
HM-43 CO	0.73	Trace	Trace	
HM-46	0.78	ND	ND	
HM-46 CO	0.78	ND	ND	
HM-51	0.70	ND	ND	
HM-51 CO	0.71	ND	ND	
HM-54	0.76	ND	ND	
HM-54 CO	0.73	ND	ND	
HM-58	0.70	ND	ND	
HM-58 CO	0.67	ND	ND	
HM-62	0.80	ND	ND	
HM-62 CO	0.76	ND	ND	

Some values truncated for simplicity
*Samples highlighted in yellow have been flagged for having a sampling time <23.0 hours.
Samples highlighted in grey had an intended deviant flow rate of 750 SCCM.
Non-detectable (ND) values are <0.04 µg/Sample or <0.0556 µg/m^3 (based off of a 500 SCCM flow rate for 24 hours)
Trace values are <0.20 µg/sample or <0.2778 µg/m^3

The two quantifiable MITC field spike recoveries were 57.77% and 71.43% with an average of 64.60%. Field spike percent recovery values for MITC are shown in Table 10. When viewing Table 10, please reference the following equations:

$$Field\ Spike \frac{\mu g}{m^3} = Field\ Recovery \frac{\mu g}{sample} \div Total\ Volume \frac{sample}{m^3}$$

$$Net\ Spike \frac{\mu g}{m^3} = Field\ Spike\ Concentration \frac{\mu g}{m^3} - Primary\ Sample \frac{\mu g}{m^3}$$

$$Net\ Spike \frac{\mu g}{sample} = Net\ Spike \frac{\mu g}{m^3} \times Total\ Volume \frac{m^3}{sample}$$

$$Spike\ Percent\ Recovery \frac{\mu g}{sample} = Net\ Spike \frac{\mu g}{sample} \div Lab\ Spike\ Value \frac{\mu g}{sample} \times 100\%$$

Table 10 – Field Spike Recovery

Sample Name	MITC (µg/sample)	MITC (µg/m^3)	Net Spike (µg/m^3)	Net Spike (µg/Sample)	Spike Percent Recovery
HM-2	Trace	Trace			
HM-2 FS	18.65	28.32			
HM-7	ND	ND			
HM-7 FS	17.50	23.24			
HM-10	0.50	0.48			
HM-10 FS	14.95	14.07	13.59	14.44	57.77%
HM-15	ND	ND			
HM-15 FS	14.90	14.53			
HM-18	Trace	Trace			
HM-18 FS	18.80	27.13			
HM-23	ND	ND			
HM-23 FS	13.50	17.49			
HM-26	0.90	1.26			
HM-26 FS	18.75	26.53	25.26	17.86	71.43%
HM-31	Trace	Trace			
HM-31 FS	19.95	25.97			
HM-34*	Trace	Trace			
HM-34 FS	19.35	26.19			
HM-39	Trace	Trace			
HM-39 FS	20.50	26.85			
HM-42	ND	ND			
HM-42 FS	20.70	28.54			
HM-47	ND	ND			
HM-47 FS	10.70	13.84			
HM-50	ND	ND			
HM-50 FS	23.40	31.31			
HM-55	ND	ND			
HM-55 FS	11.60	15.66			
HM-59	Trace	Trace			
HM-59 FS	15.25	21.21			
HM-63	ND	ND			
HM-63 FS	11.80	15.67			

Some values truncated for simplicity
*Samples highlighted in yellow have been flagged for having a sampling time <23.0 hours.
Samples highlighted in grey had an intended deviant flow rate of 750 SCCM.
Non-detectable (ND) values are <0.04 µg/Sample or <0.0556 µg/m^3 (based off of a 500 SCCM flow rate for 24 hours)
Trace values are <0.20 µg/sample or <0.2778 µg/m^3

The average MITC trip spike recovery was 83.23% with a minimum of 55.20% and maximum of 102.60%. Recovery values <70% may be attributed to matrix effects during chemical analysis or high ambient temperatures during sampling. See Table 11 (Trip Spike Percent Recovery).

The formula for calculating the Trip Spike Percent Recovery values for Table 11 is as follows:

$$Recovery\,\% = \left(Measured\ \frac{ng}{sample} \div Expected\ \frac{ng}{sample} \right) \times 100\%$$

Table 11 – Trip Spike Percent Recovery

Start Date	Analysis Date	MITC (µg/mL)	MITC Extraction Vol (mL)	MITC (µg/sample)	Spike Amount (mL)	Spike Percent Recovery
1/27/17	2/13/17	4.38	5.00	21.90	5.00	87.60
2/3/17	2/23/17	3.89	5.00	19.45	5.00	77.80
2/10/17	2/22/17	4.47	5.00	22.35	5.00	89.40
2/21/17	2/28/17	3.33	5.00	16.65	5.00	66.60
2/24/17	3/6/17	4.72	5.00	23.60	5.00	94.40
3/3/17	3/14/17	3.95	5.00	19.75	5.00	79.00
3/10/17	3/21/17	5.13	5.00	25.65	5.00	102.60
3/17/17	3/28/17	3.85	5.00	19.25	5.00	77.00
3/24/17	4/4/17	4.52	5.00	22.60	5.00	90.40
3/30/17	4/10/17	4.30	5.00	21.50	5.00	86.00
4/7/17	4/17/17	4.59	5.00	22.95	5.00	91.80
4/14/17	4/24/17	4.28	5.00	21.38	5.00	85.60
4/21/17	5/1/17	4.56	5.00	22.80	5.00	91.20
4/28/17	5/8/17	3.80	5.00	19.00	5.00	76.00
5/6/17	5/15/17	4.05	5.00	20.25	5.00	81.00
5/12/17	5/22/17	2.76	5.00	13.80	5.00	55.20

Concentrations of MITC were not detected in any of the field blanks. The results are shown in Table 12 (Field Blank Results).

Table 12 – Field Blank Results

Sample Name	Start Date	Analysis Date	MITC (µg/mL)	MITC Extraction Vol (mL)	MITC (µg/sample)
HM-03 FB	2/2/17	2/9/17	ND	5.00	ND
HM-08 FB	2/9/17	2/17/17	ND	5.00	ND
HM-16 FB	2/23/17	3/3/17	ND	5.00	ND
HM-20 FB	3/2/17	3/8/17	ND	5.00	ND
HM-24 FB	3/9/17	3/15/17	ND	5.00	ND
HM-28 FB	3/16/17	3/22/17	ND	5.00	ND
HM-32 FB	3/23/17	3/29/17	ND	5.00	ND
HM-36 FB	3/29/17	4/5/17	ND	5.00	ND
HM-40 FB	4/5/17	4/11/17	ND	5.00	ND
HM-44 FB	4/12/17	4/18/17	ND	5.00	ND
HM-48 FB	4/19/17	4/25/17	ND	5.00	ND
HM-52 FB	4/25/17	5/2/17	ND	5.00	ND
HM-56 FB	5/3/17	5/12/17	ND	5.00	ND
HM-60 FB	5/9/17	5/16/17	ND	5.00	ND
HM-64 FB	5/17/17	5/23/17	ND	5.00	ND

Non-detectable (ND) values are <0.04 µg/Sample or <0.0556 µg/m^3 (based off of a 500 SCCM flow rate for 24 hours)

The laboratory QC spike recovery values can be seen in Table 13.

Table 13 – Laboratory Quality Control Spike Recovery

Analysis Date	Spiked Result (µg/mL)	Spike Amount (µg/mL)	Percent Recovery	Relative Percent Difference
2/7/17	4.09	5.00	81.80	3.67
	4.24	5.00	84.80	
2/8/17	4.35	5.00	87.00	0.00
	4.35	5.00	87.00	
2/9/17	4.11	5.00	82.20	8.76
	3.75	5.00	75.00	
2/10/17	4.36	5.00	87.20	0.23
	4.35	5.00	87.00	
2/13/17	4.3	5.00	86.00	0.70
	4.33	5.00	86.60	
2/14/17	4.21	5.00	84.20	7.13
	4.51	5.00	90.20	
2/15/17	4.25	5.00	85.00	1.18
	4.3	5.00	86.00	
2/17/17	4.2	5.00	84.00	1.67
	4.27	5.00	85.40	
2/21/07	3.41	5.00	68.20	23.17
	4.2	5.00	84.00	
2/22/17	4.25	5.00	85.00	5.41
	4.02	5.00	80.40	
2/23/17	4.47	5.00	89.40	0.67
	4.44	5.00	88.80	
2/28/17	4.11	5.00	82.20	7.30
	4.41	5.00	88.20	
3/1/17	5.12	5.00	102.40	4.10
	4.91	5.00	98.20	
3/2/17	4.33	5.00	86.60	3.70
	4.17	5.00	83.40	
3/3/17	4.29	5.00	85.80	12.12
	4.81	5.00	96.20	
3/6/17	4.53	5.00	90.60	4.64
	4.74	5.00	94.80	
3/7/17	4.39	5.00	87.80	5.47
	4.63	5.00	92.60	
3/8/17	4.46	5.00	89.20	0.67
	4.43	5.00	88.60	
3/14/17	4.52	5.00	90.40	2.65
	4.64	5.00	92.80	
3/15/17	3.92	5.00	78.40	25.77
	2.91	5.00	58.20	

Table 13 – Laboratory Quality Control Spike Recovery (Continued)

Analysis Date	Spiked Result (µg/mL)	Spike Amount (µg/mL)	Percent Recovery	Relative Percent Difference
3/21/17	4.78	5.00	95.60	0.63
	4.75	5.00	95.00	
3/22/17	4.47	5.00	89.40	0.00
	4.47	5.00	89.40	
3/28/17	4.16	5.00	83.20	7.93
	4.49	5.00	89.80	
3/29/17	4.05	5.00	81.00	12.84
	4.57	5.00	91.40	
4/4/17	4.38	5.00	87.60	5.48
	4.62	5.00	92.40	
4/5/17	4.65	5.00	93.00	0.65
	4.68	5.00	93.60	
4/10/17	4.44	5.00	88.80	4.95
	4.22	5.00	84.40	
4/11/17	4.33	5.00	86.60	6.47
	4.05	5.00	81.00	
4/17/17	4.48	5.00	89.60	1.56
	4.41	5.00	88.20	
4/18/17	4.34	5.00	86.80	4.15
	4.52	5.00	90.40	
4/24/17	4.74	5.00	94.80	14.14
	4.07	5.00	81.40	
4/25/17	4.53	5.00	90.60	2.43
	4.64	5.00	92.80	
5/1/17	4.32	5.00	86.40	13.43
	4.9	5.00	98.00	
5/2/17	4.55	5.00	91.00	3.30
	4.7	5.00	94.00	
5/8/17	3.85	5.00	77.00	0.78
	3.88	5.00	77.60	
5/12/17	3.4	5.00	68.00	5.59
	3.59	5.00	71.80	
5/15/17	4.24	5.00	84.80	1.89
	4.16	5.00	93.20	
5/16/17	3.95	5.00	79.00	7.09
	4.23	5.00	84.60	
5/22/17	4.57	5.00	91.40	3.72
	4.74	5.00	94.80	
5/23/17	3.96	5.00	79.20	11.62
	4.42	5.00	88.40	

7.0 Summary

Many of the samples were below the method detection limit (<0.040 µg/Sample) or were present only at trace levels (between 0.040 µg/Sample and 0.20 µg/Sample). However, on some days nearly all of the site locations had detectable values of MITC. These days were:

- 1/31/17
- 2/1/17
- 2/2/17
- 2/9/17
- 2/14/17
- 2/15/17
- 2/20/17
- 2/28/17
- 3/1/17
- 3/14/17
- 3/15/17
- 3/20/17
- 3/21/17
- 3/22/17
- 3/23/17
- 4/2/17
- 4/5/17
- 4/11/17

This suggests that there may have been a large number of MITC applications in the region on those days. Following 4/11/17, most samples had non-detectable MITC concentrations.

The three highest values were from three different communities (San Joaquin City, Huron, and Cantua Creek). It did not appear that detectable MITC levels were concentrated in one specific community. While Fresno only had six trace level and zero quantifiable samples for the study, all of the other sampling sites had 22 to 30 samples with detectable MITC concentrations (including trace level and quantifiable samples). The Fresno location was selected as the urban background site and the low detection numbers seem to support that fact.

ATTACHMENT A

Use Information and Air Monitoring Recommendation

Use Information and Air Monitoring Recommendation for the Active Ingredient Methyl Isothiocyanate in California: Seasonal Ambient Monitoring in Fresno County

October 2016

By

Christopher Collins

Air Program
Environmental Monitoring Branch
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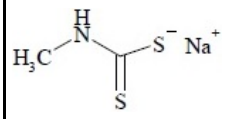
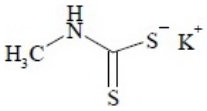
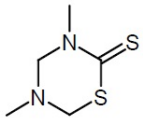
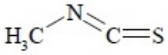
A. INTRODUCTION

The California Department of Pesticide Regulation (DPR) provides this recommendation to assist the California Air Resources Board (ARB) with the selection of appropriate locations to perform seasonal ambient air monitoring in Fresno County for the pesticide active ingredient methyl isothiocyanate (MITC) as part of the proposed monitoring included in the 2016 Budget Act. This recommendation also includes general information regarding the physical-chemical properties and the top agricultural pesticide uses of MITC and its precursors in California.

MITC is a highly volatile compound with broad, non-selective biocidal activity which results from the breakdown of three chemical precursors in water (US EPA 2009). MITC is the active ingredient (a.i.) produced by its precursors for fumigant purposes. Table 1 lists physical and chemical properties of MITC and its precursors. Due to its high volatility, MITC readily leaves soil and enters the atmosphere where it is susceptible to gas phase photolysis and observed to have a half-life ranging from approximately 9 to 13 hours (Collins 2016).

Table 1: Physical and chemical properties of metam sodium, metam potassium, dazomet, and MITC (Taken from Collins 2016).

	Compound			
Chemical Structure				
Chemical Name	Metam sodium	Metam potassium	Dazomet	Methyl isothiocyanate
IUPAC Name	sodium;N-methylcarbamodithioate	potassium;N-methylcarbamodithioate	3,5-dimethyl-1,3,5-thiadiazinane-2-thione	methylimino(sulfanylidene)methane
Molecular Formula	$C_2H_4NS_2Na$	$C_2H_4NS_2K$	$C_5H_{10}N_2S_2$	C_2H_3NS
CAS Registry Number	137-42-8	137-41-7	533-74-4	556-61-6
Physical State at 25 °C and 1 atm	Crystalline solid	Crystalline solid	Crystalline solid	Crystalline solid
Molecular Weight (g/mol)	129.18	145.29	162.3	73.12
Boiling Point (°C)	Decomposes	Decomposes	Decomposes	119
Melting Point (°C)	Decomposes	Decomposes	104 - 105	36
Vapor Pressure at 25 °C	Non-volatile	Non-volatile	9.88×10^{-6} mmHg	16.0 mmHg
Water Solubility at 25 °C	9.63×10^{4} ppm	N/A	3.63×10^{3} ppm (20°C)	8.61×10^{3} ppm
Density (g/mL)	1.1648 (20 °C)	N/A	1.3 (20 °C)	1.069 (25 °C)
Henry's Law Constant 25 °C	N/A	N/A	2.66×10^{-10} atm·m^3/mol	1.79×10^{-4} atm·m^3/mol
Octanol/Water Partition Coefficient (K_{ow})	<10	N/A	4.3	8.7, 15.8 - 23.5
Koc	N/A	N/A	52	3-14.5

MITC has been shown to be toxic to non-target plants, aquatic invertebrates, fish, birds, and mammals (EPA 2009). For handlers, workers, and bystanders associated with the soil uses of MITC, the main risk of exposure is acute inhalation as a result of fumigant off-gassing. The human health risk assessment for MITC shows that acute inhalation exposures of 22 ppb or greater for a 1 to 8 hour time period for bystanders and handlers could pose risks of concern (EPA 2009). The primary complaint of those exposed to MITC is irritation of the eye. Additionally, reports of systemic or respiratory effects have also been documented.

B. Pesticide Use Summary

MITC results from the breakdown of dazomet, metam sodium, or metam potassium at the immediate site of application. Therefore, the MITC use amount in this document refers to the sum of the a.i. produced from the use of the three MITC precursors. Use information was obtained for the calendar years 2012 – 2014 from the Pesticide Use Report (PUR) database maintained by DPR. The annual use by the top 15 counties in the state is ranked and displayed in Table 2 for the years of 2012 – 2014. Total use was highest in Kern, Fresno, Merced, Kings, and Ventura Counties (DPR 2016). Table 3 organizes the annual use of MITC for specific applications, with agricultural applications (carrots, tomatoes for processing, potatoes, etc.) being the dominant use for MITC fumigations in the state.

Total MITC use statewide as a cumulative total for each township during 2012 – 2014 is displayed in Figure 1. Statewide use data is illustrated at the township level (6x6 mile area) to better highlight areas of high use in California. Additionally, use within Fresno County is shown in Figure 2 at a resolution of 1 square mile sections (section level) as defined by Public Land Survey System (PLSS) and displays California Irrigation Management Information System (CIMIS) meteorological data from 2012 – 2014 for CIMIS Station 80 near Fresno State University. Meteorological data is represented as a wind rose to indicate the percent of time that wind is blowing from each direction.

Table 2. Annual MITC reported use (pounds a.i.) by county and year in California during 2012 – 2014[1] (DPR 2016).

County	2012	2013	2014	Total
Kern	4,260,000	5,220,000	3,596,000	13,076,000
Fresno	3,926,000	3,502,000	2,665,000	10,093,000
Merced	754,000	915,000	1,345,000	3,014,000
Kings	716,000	737,000	718,000	2,172,000
Ventura	1,078,000	453,000	349,000	1,881,000
Santa Barbara	1,067,000	222,000	186,000	1,474,000
Stanislaus	468,000	468,000	438,000	1,374,000
Riverside	714,000	284,000	258,000	1,256,000
Los Angeles	376,000	574,000	232,000	1,181,000
Imperial	1,031,000	8,000	0	1,039,000
Santa Clara	266,000	259,000	306,000	831,000
Madera	457,000	155,000	151,000	763,000
Monterey	190,000	199,000	368,000	756,000
San Joaquin	352,000	171,000	172,000	695,000
San Luis Obispo	137,000	249,000	238,000	625,000

[1]Numbers are rounded to hundreds

Table 3. Annual reported use of MITC by application and year in California during 2012 – 2014[1] (DPR 2016).

	Pounds a.i.			
Application	**2012**	**2013**	**2014**	**Combined**
Carrots, General	5,587,000	4,776,000	3,441,000	13,804,000
Tomatoes, for Processing/Canning	3,013,000	2,225,000	2,116,000	7,354,000
Potato (White, Irish, Red, Russet)	1,467,000	1,346,000	968,000	3,780,000
Peppers (Fruiting Vegetable - Bell, Chili, etc.)	1,325,000	815,000	711,000	2,851,000
Soil Application, Preplant - Outdoor (Seedbeds, etc.)	362,000	1,115,000	1,245,000	2,722,000
Onion (Dry, Spanish, White, Yellow, Red, etc.)	1,020,000	947,000	388,000	2,356,000
Strawberry (All or Unspec)	1,153,000	549,000	458,000	2,160,000
Sweet Potato	465,000	546,000	808,000	1,818,000
Uncultivated Agricultural Areas (All or Unspec)	275,000	319,000	217,000	812,000
Tomato	309,000	242,000	183,000	734,000
Statewide Total for All Applications	16,784,000	14,389,000	11,995,000	43,168,000
Total for Top Ten Applications	**14,976,000**	**12,879,000**	**10,535,000**	**38,390,000**
Percent of Statewide Total	**89.2**	**89.5**	**87.8**	**88.9**

[1]Numbers are rounded to hundreds

The top five counties with the highest use of MITC for 2012 – 2014, listed in decreasing order, were: Kern, Fresno, Merced, Kings, and Ventura. Table 4 lists pounds of a.i. applied by month for the top five counties between 2012 – 2014. Peak use is observed to be seasonal for all counties with unique peak periods for each county. Figure 3 charts the distribution, by month, of the total use of MITC for 2012 – 2014 in the top five counties. Use in Fresno County peaks during the months of January to March. Figure 4 charts the distribution, by week, of the total use of MITC during individual years for Fresno County. For Fresno County, peak use occurs starting the middle of January and continues for 12 weeks (between weeks 3 – 14 of the year).

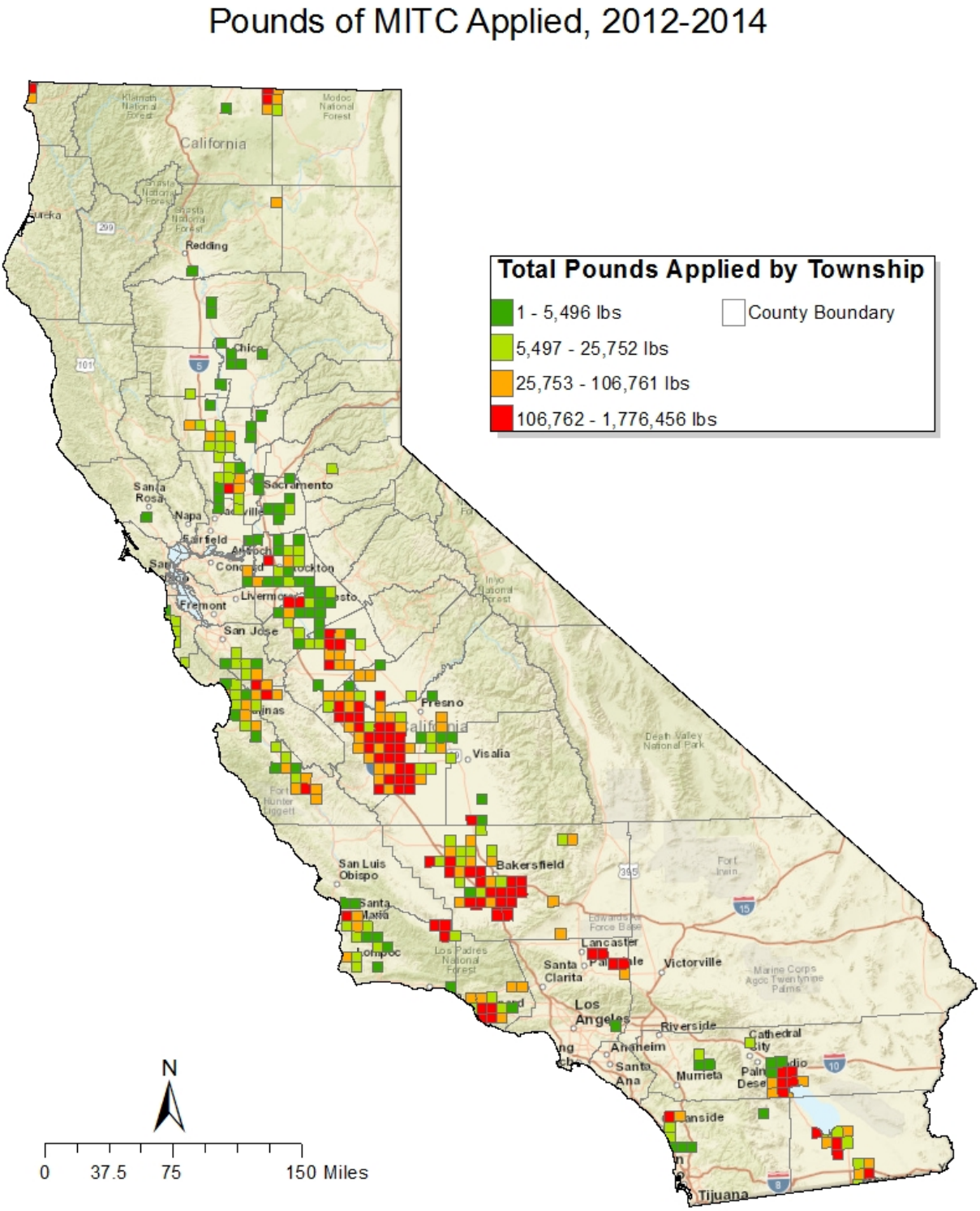


Figure 1. Reported use of MITC (pounds of a.i.) applied by township (6x6 miles) in California for 2012 – 2014.

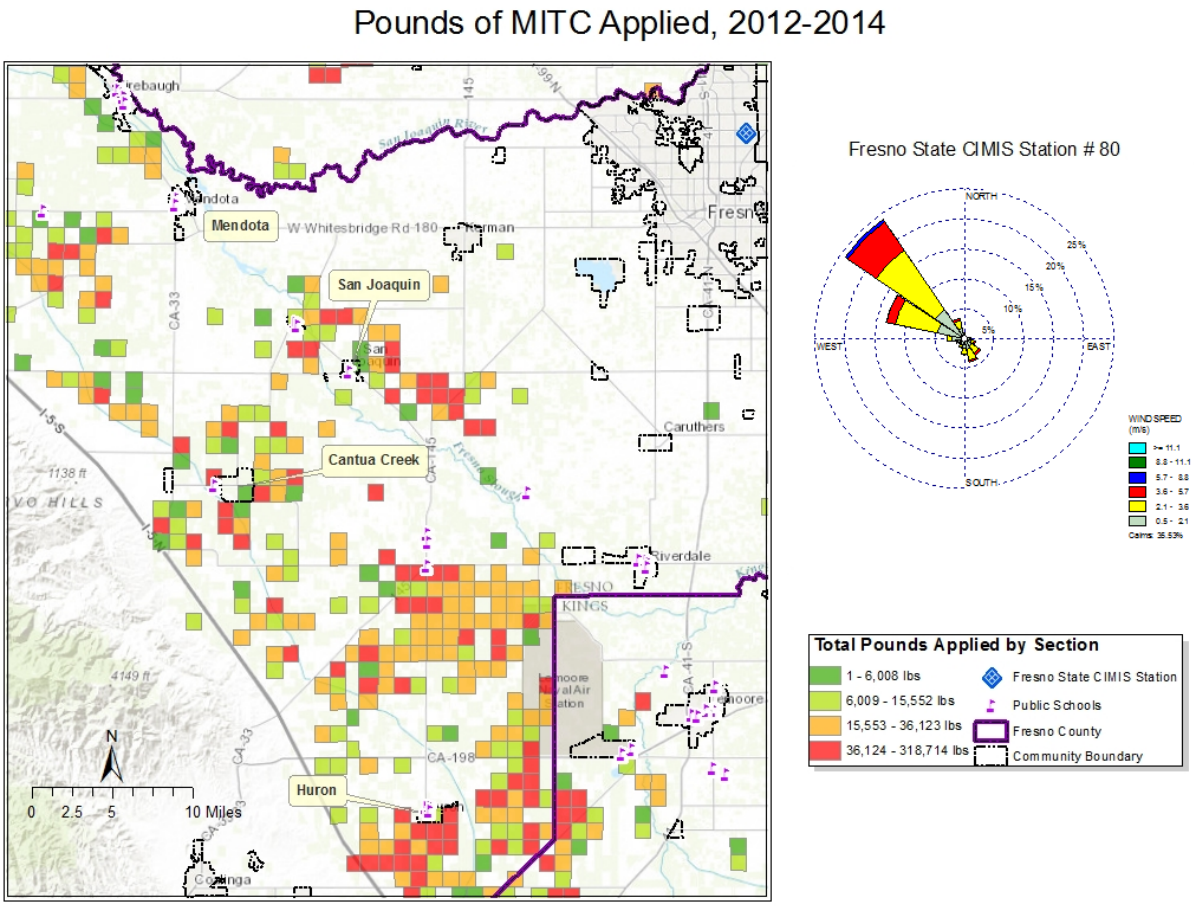


Figure 2. Focused map of Fresno county showing reported use of MITC (pounds of a.i.) by section for 2012 – 2014. Wind roses provided by data from the California Irrigation Management Information System (CIMIS) station 80 near Fresno State University for 2012 – 2014.

Table 4. Reported use of MITC (pounds of a.i.) by month during 2012 – 2014 for the top five counties with highest MITC use in California[1].

County	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2012	367,000	296,000	117,000	16,000	20,000	323,000	1,522,000	738,000	54,000	123,000	513,000	171,000
Kern	2013	581,000	271,000	38,000	26,000	25,000	262,000	1,514,000	829,000	76,000	480,000	746,000	373,000
	2014	271,000	160,000	44,000	28,000	23,000	301,000	977,000	600,000	33,000	247,000	446,000	465,000
	2012	579,000	1,141,000	664,000	205,000	11,000	42,000	32,000	66,000	14,000	510,000	347,000	315,000
Fresno	2013	508,000	1,152,000	642,000	106,000	12,000	1,000	30,000	85,000	0	356,000	153,000	458,000
	2014	400,000	915,000	494,000	132,000	23,000	0	8,000	105,000	75,000	216,000	234,000	63,000
	2012	2,000	93,000	225,000	233,000	0	83,000	56,000	1,000	0	4,000	2,000	57,000
Merced	2013	25,000	69,000	310,000	209,000	32,000	197,000	4,000	2,000	2,000	4,000	27,000	35,000
	2014	18,000	153,000	361,000	409,000	46,000	229,000	22,000	41,000	24,000	19,000	5,000	18,000
	2012	70,000	115,000	123,000	6,000	0	0	30,000	0	0	167,000	106,000	99,000
Kings	2013	58,000	160,000	6,000	21,000	0	0	0	72,000	39,000	202,000	79,000	102,000
	2014	87,000	91,000	51,000	0	0	0	0	20,000	27,000	244,000	78,000	121,000
	2012	0	0	40,000	0	2,000	258,000	157,000	172,000	422,000	1,000	25,000	1,000
Ventura	2013	0	0	34,000	19,000	57,000	112,000	7,000	25,000	198,000	1,000	0	0
	2014	1,000	0	0	0	13,000	44,000	85,000	3,000	201,000	1,000	0	0

[1]Numbers are rounded to hundreds

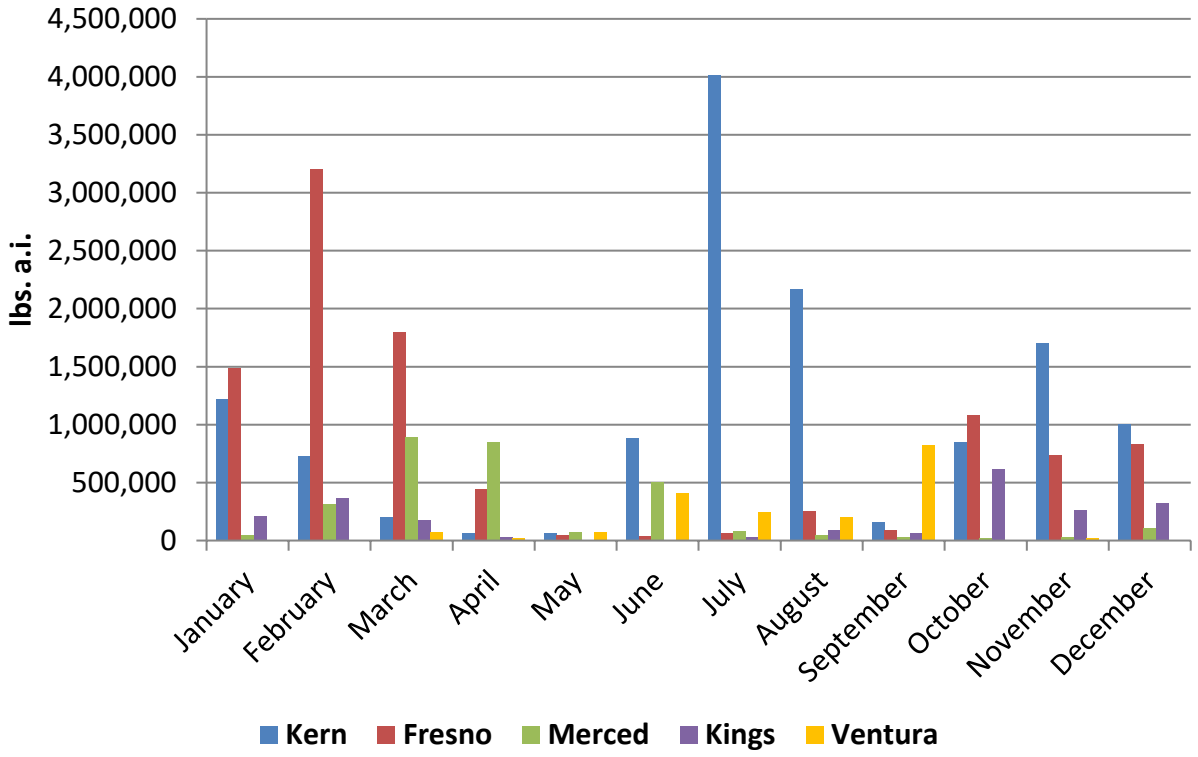


Figure 3. Reported use of MITC (pounds of a.i.) by month during 2012 – 2014 for the top five California counties.

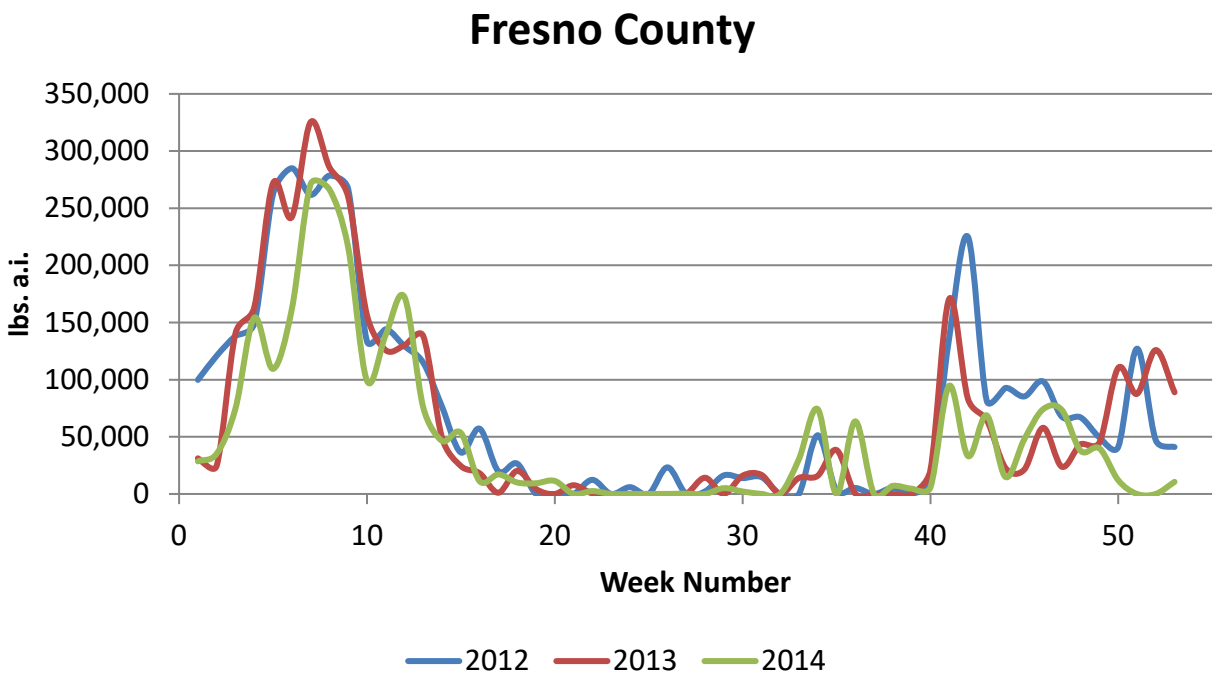


Figure 4. Reported use of MITC (pounds of a.i.) by week during 2012 – 2014 for Fresno County.

C. RECOMMENDATIONS

Ambient Air Monitoring

DPR is most interested in considering monitoring in counties where MITC use is highest: Kern and Fresno Counties. DPR is currently conducting ambient air monitoring for MITC in Kern County as part of the Air Monitoring Network which has been ongoing since 2011 (Tuli et al. 2015). Therefore, DPR requests that ARB conduct seasonal ambient monitoring for MITC in 4 – 8 locations within Fresno County near areas of high Metam Potassium, Metam Sodium, and Dazomet use (Figure 2; Table 5), as well as in one background site located away from areas of use.

DPR recommends that monitoring sites be located on schools or other public properties, near the edge of the community, and downwind of high use areas (Figure 2). Monitoring should be conducted over a 12-week period corresponding to the high-use MITC season in this region, which occurs during the months of January through April (weeks 3 – 14 of the year). At each sampling site, DPR recommends four 24-hour samples per week should be collected in sequence during each week of the 12-week sampling period. For each week, the four day sampling period should begin on randomly chosen days over the full seven-day week, including weekends. In addition to the primary samples, replicate (co-located) samples are needed for at least 10% of total samples collected during the 12 week period. Field spike samples should be collected at the same environmental conditions (e.g., temperature, humidity, exposure to sunlight) and monitoring study conditions (e.g., air flow rates, sample transportation and storage) as those occurring at the time of ambient air sampling. DPR recommends target 24-hour quantitation limits of at least 0.004 ppb for MITC (ARB 2002).

DPR requests that ARB provide the following information in its ambient air monitoring report submitted to DPR:

1. Location of each sampler (if at a school, location of sampler within school grounds);
2. Sampling height and any information relevant to the study (presence of trees, buildings, particular industrial or commercial facilities and activities);
3. Proximity of the sampler to treated or potentially treated fields, including distance and direction;
4. Latitude and longitude coordinates for sampling sites, including the Datum used (e.g., NAD 27 or NAD 83); and
5. A map of the monitoring site locations and photographs of sample locations.

Suggested Communities for Air Monitoring

DPR considered 1,267 communities, including all cities and census designated places (CDPs) in California, except those within the urban counties of Los Angeles, Orange, San Diego, and San Francisco (Andrews and Verder-Carlos 2014).

DPR evaluated and rated each of the 1,267 California communities using the following criteria:

a) Regional use density (lbs of a.i. used) during 2012 – 2014 (between 1 and 5 miles outside community boundary);
b) Local use density (lbs of a.i. used) during 2012 – 2014 (within 1 mile outside community boundary);
c) Community use density (lbs of a.i. used) during 2012 – 2014 (within the community boundary);

Rankings were given to the communities within Fresno County according to the statewide rankings of the 1,267 communities evaluated. Table 5 summarizes the results of the evaluation of pesticide use and the Office of Environmental Health Hazards Assessment's (OEHHA) CalEnviroScreen 2.0 (CES 2.0) Population Characteristics percentile for those communities. For any California census tract, the CES 2.0 Population Characteristics percentile factors the following parameters: percent of children and elderly in the population, percent of low birth-weight births, and the rates of asthma emergency department visits, educational attainment, linguistic isolation, poverty, and unemployment (OEHHA, 2014).

DPR is recommending ARB to conduct air monitoring in communities where high MITC use occurs, guided by the community rating from Table 5, and where the CES 2.0 Population Characteristics percentiles are the highest. DPR suggests that consideration should go to the communities of Huron, Del Rey, and Cantua Creek as these communities are ranked highly for both MITC use and environmental justice factors. Multiple sampling locations may be placed within a single community. DPR recommends that ARB select an additional monitoring site distant to MITC applications for rural background samples.

Table 5. Pesticide use and environmental Justice Factors Ratings for Communities in Fresno County near high MITC use areas during 2012 – 2014.

Community Name	MITC Use		CES 2.0 Population Characteristics	
	Statewide Rank[1]	County Rank[2]	Percentile	Rank[3]
Huron City	6	1	93	3
Del Rey CDP	6	1	93	3
Cantua Creek CDP	9	3	82	5
Mendota City	9	3	82	5
San Joaquin City	16	5	82	5
Tranquility CDP	18	6	82	5
Three Rocks CDP	41	7	94	2
Coalinga City	56	8	64	10
Firebaugh City	57	9	81	9
Lanare CDP	67	10	97	1

[1] Community pesticide reported use ranking is out of possible 1,267 California communities evaluated.
[2] Fresno County community rankings based on reported MITC use, with lower numbers indicate higher nearby pesticide use.
[3] Rankings for the top MITC reported use communities in Fresno County, with lower numbers indicating higher environmental justice priority.

REFERENCES

Andrews, C., Verder-Carlos, M. (2014). Recommended Air Monitoring for 2014. Sacramento, CA: Department of Pesticide Regulation, California Environmental Protection Agency.

ARB (2002). Protocol for Air Monitoring Around a Drip Irrigation Application of Metam Sodium During Spring 2002. Sacramento, CA: California Air Resrouces Board, California Environmental Protection Agency.

Collins, C. (2016). Correlating Agricultural Use With Ambient Air Concentrations of Methyl Isothiocyanate During the Period of 2011 – 2014.Sacramento, CA: Department of Pesticide Regulation, California Environmental Protection Agency.

DPR (2016). PUR Database Query. Sacramento, CA: Department of Pesticide Regulation, California Environmental Protection Agency.

OEHHA (2014). California Communities Environmental Health Screening Tool, Version 2.0 (CalEnviroScreen 2.0). Guidance and Screening Tool. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Sacramento California. http://oehha.ca.gov/media/CES20FinalReportUpdateOct2014.pdf

Tuli, A., Vidrio, E.,Wofford, P., and Segawa, R. (2015). Air monitoring network results for 2014: Vol 4. Sacramento, CA: Department of Pesticide Regulation, California Environmental Protection Agency. http://cdpr.ca.gov/docs/emon/airinit/amn_2014_report_final.pdf.

US EPA (2009). Amended Reregistration Eligibility Decision (RED) for the Methyldithiocarbamate Salts (Metamsodium, Metam-potassium) and Methyl Isothiocyanate (MITC). Washington, D.C.: Office of Pesticide Programs; U.S. Environmental Protection Agency.

ATTACHMENT B

Sampler Photos

Huron Chesnut High School – Facing E

Huron Chesnut High School – Facing N

Huron Chesnut High School – Facing S

Huron Chesnut High School – Facing W

Huron Middle School – Facing E

Huron Middle School – Facing N

Huron Middle School – Facing S

Huron Middle School – Facing W

Cantua Creek – Facing E

Cantua Creek – Facing N

Cantua Creek – Facing S

Cantua Creek – Facing W

Tranquility – Facing E

Tranquility – Facing E

Tranquility – Facing S

Tranquility – Facing W

San Joaquin – Facing E

San Joaquin – Facing N

San Joaquin – Facing S

San Joaquin – Facing W

Fresno – Facing E

Fresno – Facing N

Fresno – Facing S

Fresno – Facing W

ATTACHMENT C

Mass Flow Meter Certification Report

Alicat Scientific, Inc.

7641 N. Business Park Dr., Tucson, AZ 85743 U.S.A., 1.888.290.6060

Calibration Data Sheet

Certification Number: 150635

Customer:	State of California Air Resources Board
Return Number:	R23306
Serial Number:	117726
Model Number:	MWB-2SLPM-D
Software Version:	5v08
Adder Codes:	5M, GAS: Air, HC
Process Gas:	Selectable
Calibration Gas:	Air
Range:	2.000 SLPM
Gas Temperature:	25.93°C
Ambient Humidity:	34.34%
Calibration Procedure/Rev. #:	DOC-AUTOCAL-GASFLOW/Rev. 87
Calibrated By:	Brian Kalasinsky
Calibration Date:	10/20/2016
Full Scale Pressure:	60.00 PSIA
Full Scale Pressure Accuracy:	+/-0.5% of Full Scale
Temperature Accuracy:	+/-1.5°C
Standard Temp. & Pressure:	25°C, 14.6959 PSIA
Calibration due 1 yr. after receipt:	

Equipment Used

Flow:	TOOL-MOLBLOC10	**Flow:**	TOOL-MOLBOX3
Tool Due Date:	4/23/2017	Tool Due Date:	3/1/2018
Manufacturer/Model:	DH Instruments / 1E4-VCR-V-Q	Manufacturer/Model:	DH Instruments / Molbox1-A
Device Uncertainty:	+/- 0.2% of reading	Device Uncertainty:	NA \ Determined by Molbloc

All test equipment used for calibration is NIST traceable.

Calibration

Uncertainty: +/- (0.4% of Reading + 0.2% of Full Scale)

Calibration Pressure: N/A

Units of measure: SLPM

Output 1 Configuration
mini-DIN Pin #6

As Found

D.U.T.	Actual	In Tolerance
0.000	0.000	Yes
0.501	0.506	Yes
1.001	1.011	No
1.499	1.514	No
1.998	2.019	No

Output 2 Configuration
mini-DIN Pin #2

As Left

D.U.T.	Actual	In Tolerance	Output 1	Output 2
0.000	0.000	Yes	0.000 Vdc	5.12 Vdc
0.503	0.505	Yes	1.258 Vdc	5.12 Vdc
0.994	0.997	Yes	2.485 Vdc	5.12 Vdc
1.501	1.504	Yes	3.750 Vdc	5.12 Vdc
2.000	2.003	Yes	5.00 Vdc	5.12 Vdc

Tech Signature:

QC Signature:

ATTACHMENT D

Sampling Protocol

Monitoring and Laboratory Division
Air Quality Surveillance Branch

Sampling Protocol for Methyl Isothiocyanate (MITC) Study

January 16, 2017

Prepared by:

James Pham
Air Pollution Specialist
Special Purpose Monitoring Section

Signatures:

_____
Kenneth R. Stroud, Chief Date
Air Quality Surveillance Branch
Air Resources Board

_____
Mac McDougall, Manager Date
Special Purpose Monitoring
Air Quality Surveillance Branch

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Appendix

Appendix A: Use Information and Air Montioring Recommendation for the Active Ingredient Methyl Isothiocyanate in California:Seasonal Ambient Monitoring in Fresno County

Appendix B: Method Development for the Sampling and Analysis of Methyl Isothiocyanate (MITC) in Application Air Monitoring Using Gas Chromatography/ Mass Selective Detector

1.0 Introduction

The California Department of Pesticide Regulation's (DPR) memorandum dated October 2016, "Use Information and Air Monitoring Recommendation for the Active Ingredient Methyl Isothiocyanate…" (Appendix A), requests that the California Air Resources Board (CARB) conduct a comprehensive air monitoring study for ambient Methyl Isothiocyanate (MITC) in Fresno County in the high use months of January through April (weeks 3 through 14 of the year). The study will consist of four (4) consecutive 24-hour samples per week on a random schedule to span 12 weeks with samplers operating simultaneously at 4 to 8 locations. DPR requests for at least 10% of the samples to be collocated. DPR also requests for field spikes to be collected in the same environmental conditions.

2.0 Project Goals and Objectives

The primary goal of this monitoring project is to measure the concentrations of MITC in the ambient air during annual high-use times in Fresno County.

To achieve the project goal, the following objectives should be met:

1) Identification of monitoring sites that mutually satisfies criteria for ambient air sampling and DPR's requirements.
2) Appropriate application of sampling/monitoring equipment to determine MITC concentrations in the air in a high-use county (Fresno).
3) Application of relevant field quality assurance/quality control practices to ensure the integrity of field samples.
4) A final report containing all relevant information, data and results gathered in the course of MLD's activities during the planning and execution of this project

3.0 Contacts

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4.0 Study Location

The sampling is planned to take place at five (5) schools in Fresno County. An additional site in Fresno city will be utilized to gather background samples. Sites were selected based on historical high-use data with priority given to the highest use cities/Census Designated Places. The locations of the samplers are listed in Table 1.

Table 1 – Sampling Locations

City	Address	Coordinates
Fresno	3727 N. 1st Street, Ste. 104, Fresno CA 93726	36°47'7.49"N 119°46'23.61"W
Huron – HC	16673 Palmer Ave, Huron, CA 93234	36°12'36.85"N 120° 5'55.68"W
Huron – HM	16875 4th, Huron, CA 93234	36°11'53.75"N 120° 6'1.61"W
Cantua Creek	29288 W Clarkson Ave, Cantua Creek, CA 93608	36°30'10.28"N 120°19'16.27"W
Tranquility	32532 W Adams Ave, Tranquillity, CA 93668	36°38'3.29"N 120°22'56.39"W
San Joaquin	8535 9th St, San Joaquin, CA 93660	36°36'39.01"N 120°11'12.19"W

5.0 Study Design

The MITC sampling will occur on a randomized weekly schedule. During the 12-week sampling period, four consecutive 24-hour samples will be collected in sequence at the designated sampling locations each week. The sample start and end times will vary depending on field staff work schedules. Field spikes, collocated samples, and field blanks will each be collected once a week at the Huron Middle School site. Field spikes and trip spikes will be prepared on a weekly basis and will be picked up from the laboratory by field staff at the beginning of the week. The spikes and retrieved samples will be stored in a portable cooler at or below 4° Celsius. Upon retrieval of each sample, the sorbent tubes will be capped, labeled, and inserted into a protective glass tube. The identification labels will include an abbreviated sample location code, start date, and sample number. A field log will be kept and will include the sample locations, start and end times, start and end flow rates, and sampler elapsed time readings.

The air samplers will consist of an AC or DC pump capable of drawing at least one liter per minute (LPM). Sample flow will be controlled by an in-line rotameter and will be adjusted prior to each sample run. The flow rate of the samplers will be set to 500 standard cubic centimeters per minute (SCCM) ± 10%.The end flow should be 500 SCCM ± 20% upon sample retrieval to be considered a valid sample. Each

sample will run 23-25 hours. The air intake of such sampler will be at least 1.7 meters above the sampling platform or ground. A diagram of a sampler can be seen in Figure 1.

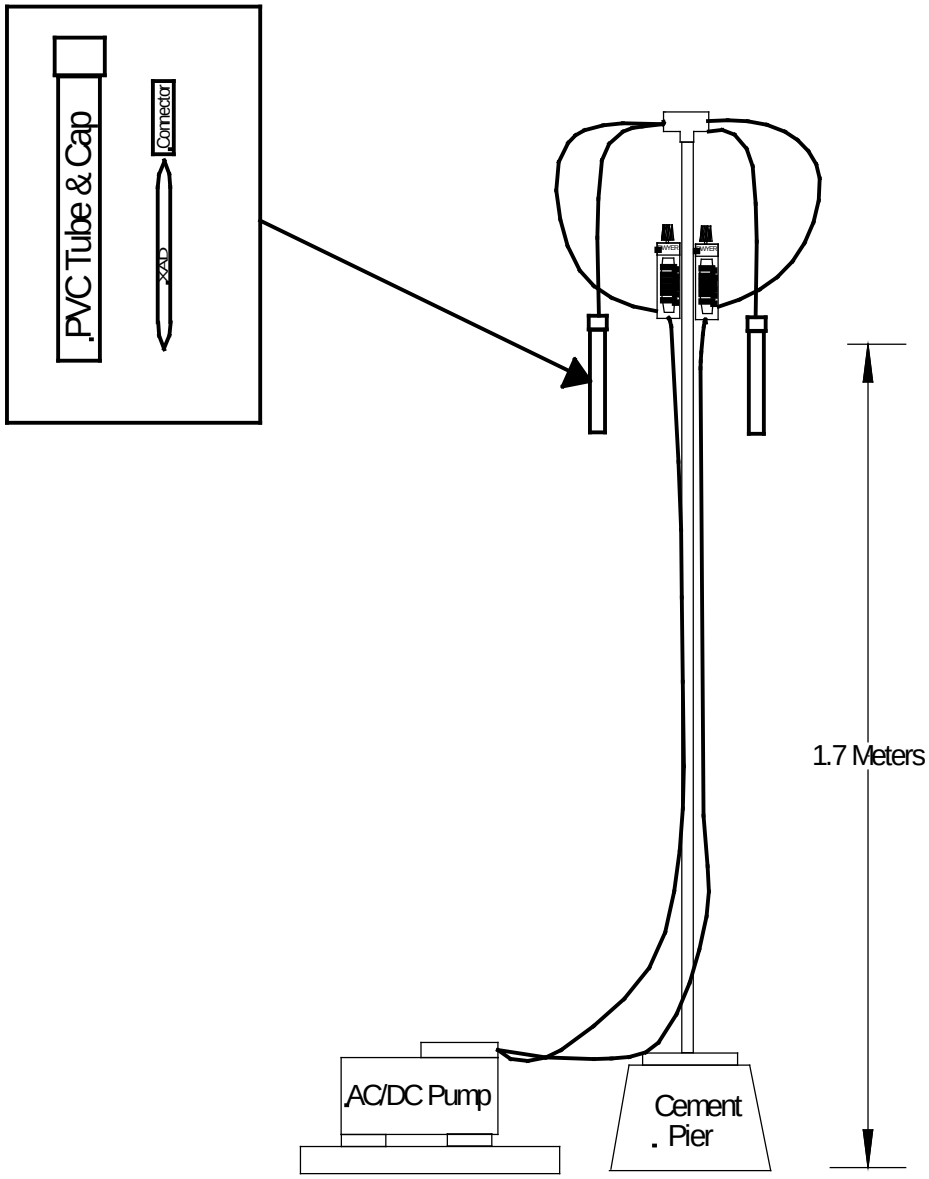

Figure 1: Air Sampler Tree with Pump

6.0 Sampling and Analysis Procedures

Special Purpose Monitoring Section (SPM) staff transport charcoal sorbent tubes to and from MLD's laboratory in Sacramento, and to and from each sampling location. The sorbent tubes will not be exposed to extreme conditions or subjected to rough handling that might cause loss or degradation of sample. At the end of the each sampling period, all sorbent tubes will be removed from the sampler, placed in a culture tube, labeled, and secured in a dry ice cooler for temporary storage.

After each sampling period, the operator will replace the batteries for each sampler with charged batteries (if necessary), install a new sorbent tube, and install the rain/sun shield over the sorbent tube at each sampling site. The field log sheet shall be filled out along with the sorbent tube label. Prior to any sampling, flows will be set to 500 ± 50 sccm. At the start of each sampling period, the samplers will be manually turned on and the start date, time, elapsed time meter reading and indicated flow rate will be recorded. At the end of each sampling period, the flow rate will be measured, the sampler manually shut off and the following parameters recorded on the sorbent tube field log sheet; end date, time, elapsed time meter reading, and flow rate.

Sampling will occur as scheduled unless ambient conditions at the start include rain or instantaneous gusts of wind over ten (10) miles per hour. All reported sampling times will be reported in Pacific Standard Time (PST).

The Northern Laboratory Branch (NLB) will supply SPM with 30 new charcoal sorbent tubes, a field spike, and a trip spike for each week of planned sampling. Spikes and other QC charcoal sorbent tubes will be marked for clear identification using label that will be affixed around the bottom section of the sorbent tube. The NLB will perform analyses for MITC on all collected samples and report results to SPM in electronic format (Excel) and hardcopy. Laboratory analysis will be performed in accordance with the draft standard operating procedures, “Method Development for the Sampling and Analysis of Methyl Isothiocyanate…” The current analytical Method Detection Limit (MDL) is 0.005 µg/mL for MITC. The laboratory’s operating procedure is included in this protocol as Appendix B.

The following charcoal sorbent tube validation and analytical quality control criteria will be followed during pesticide analysis.

1. **Sample Hold Time**: Sample hold time criteria will be consistent with the laboratory’s operation procedure stated 28 days.

2. **Duplicate Analysis**: Laboratory to provide duplicate analytical results and the corresponding relative percent difference (RPD)

3. **Method Detection Limit (MDL)**: Sample analysis results less than the MDL shall be reported as a less than numerical value. This less than numerical value shall incorporate any dilutions (dilution factor will be included in the report).

4. **Analytical Linear Range**: Analytical results greater than 10% of the highest calibration standard shall be diluted and reanalyzed within the calibrated linear range.

7.0 List of Field Equipment

Quantity	Item Description
(1)	25 foot measuring tape
(1)	Global Positioning System (GPS) with backup batteries and carrying case

(1)	Digital Camera with backup batteries and carrying case
(2)	Alicat certified mass flow meter 0-2000 CCM
(~360)	Charcoal sorbent tubes
(7)	Pesticide samplers each equipped with one (1) each sampling train and rotameter to sample one (1) sorbent tube
(7)	Pump, 12 volts DC
(16)	Battery, 12 volts DC 40 amps
(4)	AC Battery Chargers

8.0 Quality Control

Quality control procedures will be observed to ensure the integrity of samples collected in the field. National Institute of Standards and Technology (NIST) traceable transfer standards will be used to measure sample flow rates.

The sample flow rate of the pesticide samplers will be measured using certified mass flow meters with a range of 0-2000 SCCM.

A label will be affixed around the bottom section of the sorbent tube identifying the sample with the following information: abbreviated site name, sample number, and start date. Collocated air samplers will operate at one site during the study period. This collocated site will be located at the projected high-use site.

Field Spike (FS): Twelve (12) field spikes will be prepared by the laboratory by injecting sorbent tubes with a known concentration of MITC. The field spike sorbent tubes will be coupled with a pesticide sampler and collocated next to the sampler at the projected high use site. One (1) field spike will be collected during each week.

Trip Spike (TS): A trip spike will be prepared by the laboratory by injecting sorbent tubes with a known concentration of MITC with the same level as the field spikes. The trip spike charcoal sorbent tube accompanies the sample charcoal sorbent tubes from the lab to the field but is not sampled.

Collocated (C): Collocated samples will be collected at the projected high-use site once a week.

Valid samples are those that have a final average flow within 400 – 600 SCCM.

Site/Sample Identification

Each sample label will include the site name, sample number, and start date of the sample.

Naming Convention:
Abbreviated Site Name – Sample Number

Site Name:
Huron – Chestnut HS = HC
Huron – Middle School = HM

Cantua Creek = CC
Tranquility = TY
San Joaquin = SJ
Fresno = FO

Quality Control Samples:
CO = Collocated
FB = Field Blank
FS = Field Spike
TS = Trip Spike

Following the quality control procedures listed above will ensure the quality and integrity of the samples collected in the field and will ensure accurate field and laboratory results.

9.0 Deliverables

9.1 Northern Laboratory Branch (NLB) Deliverables

Within 90 days after the last collected sample is received at the laboratory, the NLB will provide SPM with a report that will include the following topics:

1) Table(s) of sample to include:
   a. Sample identification (name)
   b. Date sample received from field
   c. Date sample analyzed
   d. Dilution ratio
   e. Analytical results
2) All equations used in calculating analytical results
3) Table of duplicate results including calculated relative percent difference (RPD) when applicable
4) Table of collocated results
5) Table of analytical results from all field, trip and laboratory spikes including percent recoveries when applicable
6) Table of analytical results from all trip blanks
7) Table of analytical results from all laboratory blanks, standards and control checks performed, including dates performed and relative percent recoveries when applicable
8) Copy or location of analytical method or Standard Operating Procedures (SOP) used for analysis
9) Section or provision listing or reporting any and all deviations from analytical SOP and this protocol

9.2 Air Quality Surveillance Branch Deliverables

Within 90 days from receipt of the final results report from the NLB, AQSB will provide DPR with a report containing the following topics:

1) Sampling Protocol
2) Personnel Contact List
3) Site Maps
4) Site Photographs
5) Site Descriptions and Measurements (site, sampler, GPS coordinates, inlet height, site-specific comments)
6) Sample Summary Table
7) Field Log Sheets
8) Laboratory Analysis Reports with calculations in electronic format
9) Met Station and Sampler Calibration Reports
10) Transfer Standards Certification Reports

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet

MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: _____ **Week #:** _____ **Day:** _____

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site - # - *P/Co/FS/FB)	HC -	HM -	HM - -(FB / CO / FS	CC -	TY -	SJ -	FO -
Barcode							
LIMS ID							
Sample Loaded (Date / Time)							
Sample Start (If Different From Load)							
Sample Stop (Date / Time)							
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	/	/	/	/	/	/	/
Flow (Start / Stop (SCCM))	/	/	/	/	/	/	/

*** - Field Blank (FB), Collocated (Co), Field Spike (FS)**

Local Conditions							
Precipitation (Circle One): None (**N**), Light (**L**), Moderate (**M**), Heavy (**H**)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (**S**) Light (**L**), Moderate (**M**), Heavy (**H**)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)					Received By Lab (Date / Time, Initials)		
Delivered Frozen? (Circle Y or N)	Y / N						

Figure 2: Charcoal Sorbent Tube Field Log Sheet

ATTACHMENT E

Monitoring Field Log Sheets

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

1/30/17

Site Operator: J. PHAM

Week #: 1 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-1	HM-1	HM-1(FB/CO/FS)	CC-1	TY-1	INV SJ-1	INV FO-1
Barcode	DPR00214	DPR00215	DPR00216	DPR00217	DPR00218	DPR00219	DPR00220
LIMS ID							
Sample Loaded (Date / Time)	1/30 1138	1/30 1107	1/30 1100	1/30 ~~1211~~ 1245 JP	1334	1436	1610
Sample Start (If Different From Load)							1617
Sample Stop (Date / Time)	1/31 1211	1/31 1111	1/31 1112	1/31 1326	1/31 ~~1334~~ 1411 JP	1/31 1457	1/31
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	975.5 / 1000.0	295.6 / 319.6	469.2 / 493.2	1408.8 / 1433.5	1436.7 / 1461.3	482.8 / 507.1	416.8 / 440.8
Flow (Start / Stop (SCCM))	501 / 500	500 / 497	500 / 492	500 / 475	500 / 465	500 / 350	501 / 367

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H

Field Notes / Comments:							
PUMP / SAMPLER #	4663	4653	4662	4673	3021 PSU	2957 * INVALID * LOW END FLOW	4661 PSU * INVALID *

Delivered to Lab (Date / Time, Initials)	2/3 6:45 C
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

1/31/17

Site Operator: J. PHAM

Week #: 1 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-2	HM-2	HM-2(FB/CO/FS)	CC-2	TY-2	SJ-2	FO-2
Barcode	DPR00221	DPR00222	DPR00223	DPR00224	DPR00225	DPR00226	DPR00227
LIMS ID							
Sample Loaded (Date / Time) 1/31	1/31 1218	1/31 1137	1/31 1130	1/31 ~~13~~ 1333 JP	1/31 1418	1/31 1503	1/31 1621
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	2/1 11 51	2/1 11.11	2/1 11.11	2/1 ~~11~~ 12:55	2/1 2:21	2/1 2.59	2/1 4 49
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1000.0 / 1023.6	319.6 / 343.2	493.3 / 516.8	1433.5 / 1452.8	1461.3 / 1485.4	507.1 / 531.1	440.8 / 465.3
Flow (Start / Stop (SCCM))	500 / 390	500 / 474	500 / 430	500 / 477	500 / 418	500 / 373	502 / 490

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
	Pickup						
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	~~S~~ L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	2/3 6:45p @
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: McKay / Phzon

Week #: 1 **Day:** 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-3	HM-3	HM-3 (FB/CO/FS)	CC-3	TY-3	SJ-3	FO-3
Barcode	DPR00228	DPR00229	DPR00230	DPR00231	DPR00232	DPR00233	DPR00234
LIMS ID							
Sample Loaded (Date / Time)	2/1 11:55	2/1 11:19	2/2 10:42	2/1 12:59	2/1 2:23	2/1 3:21	2/1 4:52
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	2/2 11:12	2/2 10:40	2/2 10:47	2/2 12:16	2/2 1:23	2/2 ~~1:24~~ 2:23	2/2 3:52
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1023.6 / ~~1046.9~~ 1012.0	343.2 / 366.5	— / —	1456.8 / 1482.1	1485.4 / 1508.4	531.1 / 554.1	465.3 / 488.3
Flow (Start / Stop (SCCM))	533 / 575	530 / 563	— / —	525 / 520	528 / ~~520~~ 499	528 / 464	528 / 468

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions

Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H (Pickup)	N L M H	N L M H (P)	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H
Field Notes / Comments:	Rain over night lines all wet	Rain over night paddles on roof	Rain over night		20 water	Switch to AC power for starting w/ this sample 30 water	Forgot rain cover on sample after 25 min

Delivered to Lab (Date / Time, Initials)	2/3 6:45p
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

22 batteries –

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

tor: Mcky

Week #: 1 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
	10:20	10		11:45	12:45	1:00	
Sample Name (Site-#[-CO/FS/FB])*	HC-4	HM-4	HM-4(FB/CO/FS)	CC-4	TY-4	SJ-4	FO-4
Barcode	DPR00235	DPR00236	DPR00237	DPR00238	DPR00239	DPR00240	DPR00241
LIMS ID							
Sample Loaded (Date / Time)	2/2 11:19	2/2 10:49		2/2 12:20	2/2 1:24	2/2 2:24	2/2 3:52
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	2/3 10:20	2/3 9:49		2/3 11:37	2/3 12:24	2/3 1:24	2/3 2:52
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1042 / ~~513~~ 1069.9	366.5 / 1369.5	/	1460.1 / 1503.4	1508.4 / 1531.4	554.1 / 1577.1	488.3 / 571.3
Flow (Start / Stop (SCCM))	501 / ~~501~~ 513	502 / 509	/	501 / 545	500 / 567	505 / 496	509 / 588

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N (L) M H	(N) L M H	N L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L (M) H	S ~~(L)~~ (M) (H)	S L M H	S (L) M H	S (L) (M) H	S L (M) H	S (L) M H
Field Notes / Comments:	As pulling sample - broke in break through - sample should be ok.	Rain over night - for all sites		Just rained before pickup			

Delivered to Lab (Date / Time, Initials)	2/3 6:45p (N)
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

2/6/17

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: J. PHAM

Week #: 2 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-5	HM-5	HM-5(FB/CO/FS)	CC-5	TY-5	SJ-5	FO-5
Barcode	DPR00242	DPR00243	DPR00244	DPR00245	DPR00246	DPR00247	DPR00248
LIMS ID							
Sample Loaded (Date / Time)	2/3 10:26	2/3 9:51		2/3 11:40	2/3 12:25	2/3 1:24	2/3 2:52
Sample Start (If Different From Load)	2/6 10:40	2/6 10:00		2/6 11:45	2/6 12:30	2/6 12:55	2/6 14:30
Sample Stop (Date / Time)	2/7 13:05	2/7 12:33		2/7 14:00	2/7 14:31	2/7 14:59	2/7 15:52
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1469.9 / 1096.7	389.5 / 416.1	/	1503.4 / 1525.6	1531.4 / 1557.4	577.1 / 651.2	511.3 / 584.0
Flow (Start / Stop (SCCM))	501 / 522	501 / 501	/	500 / 498	500 / 502	503 / 447	501 / 489

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	N L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L (M) H	S L (M) H	S L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	2/7 1930 JP
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE JAMES KELLY

Week #: 2 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-6	HM-6	HM-6(FB/CO/FS)	CC-6	TY-6	SJ-6	FO-6
Barcode	DPR00249	DPR00250	DPR00251	DPR00252	DPR00253	DPR00254	DPR00255
LIMS ID							
Sample Loaded (Date / Time)	2/7 1309	2/7 1247	2/7 12:49	2/7 14:06	2/7 14:33	2/7 15:03	2/7 15:56
Sample Start (If Different From Load)	SMA 12:21						
Sample Stop (Date / Time)	02/08 ~~13:21~~	02/09 11:47	02/08 11:56	02/08 13:23	02/08 13:55	02/08 14:26	02/08 15:32
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1096.7 / 1119.9	516.8 / 539.7	416.1 / 439.2	1529.6 / 1552.9	1557.4 / 1580.8	651.2 / 674.6	584.6 / 608.2
Flow (Start / Stop (SCCM))	531 / 522	535 / 525	529 / 517	529 / 495	530 / 527	528 / 530	524 / 528

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	S (L) M H	S (L) M H	S (L) M H	S (L) M H	S L M H
Field Notes / Comments:	AERIAL SPRAY NORTH OF THE H.S. 12:19 02/08						

Delivered to Lab (Date / Time, Initials)	02/08/17 19:00 SMA
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE A.

Week #: 2 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-7	HM-7	HM-7(FB/CO/FS)	CC-7	TY-7	SJ-7	FO-7
Barcode	DPR00256	DPR00257	DPR00258	DPR00259	DPR00260	DPR00261	DPR00262
LIMS ID							
Sample Loaded (Date / Time)	02/08 12:26	02/08 11:59	02/08 11:56	SMA 02/08 ~~02/08~~ 1331	02/08 13:58	02/08 14:31	02/08 15:35
Sample Start (If Different From Load)	02/09 11:27	02/09	02/09 10:57	02/09 12:32	02/09 12:59	02/09 13:32	02/09 14:36
Sample Stop (Date / Time)	↓	↓	02/09 10:57	↓	↓	↓	↓
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1119.9 / 1143.0 SMA	439.2 / 462.2	539.8 / ~~462.2~~ 562.9 CM	1552.9 / 1575.8	1580.8 / 1603.8	674.6 / 697.6	608.2 / 631.1
Flow (Start / Stop (SCCM))	522 / 562	527 / 518	530 / 552	520 / 493	530 / 505	529 / 521	527 / 519

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	S (L) M H	S (L) M H	S (L) M H	S (L) M H	S (L) M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	02/10/2017 1930 SMA
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE A.

Week #: 2 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-8	HM-8	HM-8(FB/CO/FS)	CC-8	TY-8	SJ-8	FO-8
Barcode	DPR00263	DPR00264	DPR00265	DPR00266	DPR00267	DPR00268	DPR00269
LIMS ID							
Sample Loaded (Date / Time)	02/09 11:33	02/09 11:00	02/09 11:03	02/09 12:32	02/09 ~~13:00~~ 13:01 SWA	02/09 13:35	02/09 14:37
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	02/10 10:39	02/10 10:01	02/09 11:04	02/10 11:33	02/10 12:02	02/10 12:36	02/10 13:38
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1143.0 / 1166.0	462.2 / ~~485~~ 485.1 SWA	562.9 / 562.9	1575.8 / 1598.8	1603.8 / ~~1626~~ 1626.8 ~~1062~~ SWA	697.6 / 720.6	631.1 / 1654.2
Flow (Start / Stop (SCCM))	514 / 500	536 / 534	0 / 0	515 / 521	530 / 515	522 / 445	530 / 521

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	02/10/2017 ~~07~~ 1930 SWA
Delivered Frozen? (Circle Y or N)	Y N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SA / KY

Week #: 3 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-9	HM-9	HM-9(FB/CO/FS)	CC-9	TY-9	SJ-9	FO-9
Barcode	DPR00270	DPR00271	DPR00272	DPR00273	DPR00274	DPR00275	DPR00276
LIMS ID							
Sample Loaded (Date / Time)	02/10 10:36	02/10 10:05		02/10 11:36	02/10 12:05	02/10 12:38	02/10 13:4
Sample Start (If Different From Load)	02/13 11:00	02/13 10:30		02/13 12:00	02/13 12:30	02/13 13:05	02/13 14:1
Sample Stop (Date / Time)	2/14 11:45	2/14 10:36		2/14 13:25	2/14 14:19	2/14 15:00	2/14 16:12
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1166.0/1190	485.1 / 509.2	/	1598.8/1624.3	1626.8/1652.6	720.6/748.6	654.2/680
Flow (Start / Stop (SCCM))	749 / 737	750 / 715	/	748 / 685	748 / 673	749 / 845	750 / 711

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H
Field Notes / Comments: Trip Spike 2/10/17							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 3 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-10	HM-10	HM-10(FB/CO/FS)	CC-10	TY-10	SJ-10	FO-10
Barcode	DPR00277	DPR00278	DPR00279	DPR00280	DPR00281	DPR00282	DPR00283
LIMS ID							
Sample Loaded (Date / Time)	2/14 11:57	2/14 10:55	2/14 10:52	2/14 13:29	2/14 14:23	2/14 15:04	2/14 16:16
Sample Start (If Different From Load)				KY			
Sample Stop (Date / Time)	2/15 10:58	2/15 10:02	2/15 9:54	2/15 12:31	2/15 13:25	2/15 14:05	2/15 15:17
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1190.6/1213	509.3/532.4	562.9/585.9	1624.3/1647.2	1652.7/1675.7	746.7/769.6	680.3/703.2
Flow (Start / Stop (SCCM))	751 / 759	749 / 752	755 / 785	754 / 770	754 / 757	749 / 688	752 / 724

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							
		used incorrect printed labels for FS & primary (read labels carefully) KY					

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 3 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-11	HM-11	HM-11(FB/CO/FS)	CC-11	TY-11	SJ-11	FO-11
Barcode	DPR00284	DPR00285	DPR00286	DPR00287	DPR00288	DPR00289	DPR00290
LIMS ID							
Sample Loaded (Date / Time)	2/15 11:04	2/15 10:06	2/15 10:00	2/15 12:38	2/15 13:28	2/15 14:10	2/15 15:18
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	2/16 10:23	2/16 9:11	2/16 9:13	2/16 11:55	2/16 12:53	2/16 13:36	2/16 14:54
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1213.9/1237.2	532.4/555.5	586/609.2	1647.3/1670.5	1675.4/1699.1	769.7/793.1	703.2/726.8
Flow (Start / Stop (SCCM))	750/772	752/681	752/740	751/794	751/770	749/719	749/742

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions

Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 4 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-13	HM-13	HM-13(FB/CO/FS)	CC-13	TY-13	SJ-13	FO-13
Barcode	DPR00298	DPR00299	DPR00300	DPR00301	DPR00302	DPR00303	DPR00304
LIMS ID							
Sample Loaded (Date / Time)	2/16 10:32	2/16 9:21	KY	2/16 12:03	2/16 12:55	2/16 13:41	2/16 14:58
Sample Start (If Different From Load)	2/20 11:00	2/20 10:30		2/20 11:45	2/20 12:10	2/20 13:00	2/20 14:00
Sample Stop (Date / Time)	02/21 11:44	2/21 11:19		02/21 12:50	02/21 1320	02/21 13:47	02/21 14:40
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1237.2/1261.9	555.5/580.3	/	1670.9/1695.6	1699.1/1724.3	793.1/817.9	726.8/751.5
Flow (Start / Stop (SCCM))	752/1734	749/1709	/	748/1798	749/1739	750/781	750/1786

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	N L M H	(N) L M H	(N) ~~(L)~~ M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	S L M H	S (L) M H	S (L) M H	S (L) M H	S (L) M H

Field Notes / Comments:							
FIELD SPIKE 02/21/2017 ~~0000~~ 11:20 HURON ~~ELEM~~ MIDDLE SCHOOL		SAMPLER ~~TIPPED OVER~~ WAS DOWN DURING SITE VISIT. 02/21	PVC COVER MISSING →				

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE

Week #: 4 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-14	HM-14	HM-14(FB/CO/FS)	CC-14	TY-14	SJ-14	FO-14
Barcode	DPR00305	DPR00306	DPR00307	DPR00308	DPR00309	DPR00310	DPR00311
LIMS ID		02/21					
Sample Loaded (Date / Time)	02/21 11:48	02/21 11:25	02/21 11:29	02/21 12:55	02/21 13:23	02/21 13:50	02/21 14:48
Sample Start (If Different From Load)	02/22	02/22	02/22	02/22 11:56			
Sample Stop (Date / Time)	↓ SM 10:49	↓ SM 10:26	↓ SM 10:31	↓ SM	02/22 12:24	02/22 12:51	02/22 13:49
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1262.0 / 1285.0	580.3 / 603.3	609.2 / 632.1	1695.7 / 1718.7	1724.3 / ~~12:24~~ SM 1747.3	817.9 / 841.0	751.5 / 774.4
Flow (Start / Stop (SCCM))	734 / 736	750 / 695	750 / 801	746 / 765	750 / ~~1748~~ CM 724	748 / ~~1724~~ CM 796	743 / 775

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L (M) H	S L (M) H	S L (M) H	S L (M) H	S L (M) H	S L (M) H	S L (M) H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE

Week #: 4 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-15	HM-15	HM-15(FB/CO/FS)	CC-15	TY-15	SJ-15	FO-15
Barcode	DPR00312	DPR00313	DPR00314	DPR00315	DPR00316	DPR00317	DPR00318
LIMS ID							
Sample Loaded (Date / Time)	02/22 10:54	02/22 10:27	02/22 10:32	02/22 11:59	02/22 12:25	02/22 12:52	02/22 13:51
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	02/23 09:56	02/23 09:28	02/23 09:33	02/23 11:01	02/23 11:26	02/23 11:53	02/23 12:52
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1285.9 / 1308	603.3 / 626.3	632.2 / 655.1	1718.7 / 1741.6	1747.3 / 1770.3	840.0 / 864.0	774.4 / 797.4
Flow (Start / Stop (SCCM))	747 / 761	746 / 718	740 / 746	750 / 751	749 / 750	741 / 761	734 / 721

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE A.

Week #: 4 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-16	HM-16	HM-16(FB/CO/FS)	CC-16	TY-16	SJ-16	FO-16
Barcode	DPR00319	DPR00320	DPR00321	DPR00322	DPR00323	DPR00324	DPR00325
LIMS ID							
Sample Loaded (Date / Time)	02/23 09:38	02/23 09:29	02/23 09:35	02/23 11:03	02/23 11:27	02/23 11:54	02/23 12:53
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	02/24 08:59	02/24 08:30	02/23 09:36	02/24 10:04	02/24 10:30	02/24 10:56	02/24 11:55
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1308 / 1331	626.3 / 649.3	655.1 / 655.1	1741.6 / 1764.6	1770.3 / 1793.3	864.0 / 886.9	797.4 / 820.4
Flow (Start / Stop (SCCM)) SMF	~~531~~ / 598	548 / 509	0 / 0	548 / 545	549 / 427	547 / 540	549 / 546

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

531

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	(S) L M H	S (L) M H	S (L) M H	S (L) M H	S (L) M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SA/KY

Week #: 5 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-17	HM-17	HM-17(FB/CO/FS)	CC-17	TY-17	SJ-17	FO-17
Barcode	DPR00326	DPR00327	DPR00328	DPR00329	DPR00330	DPR00331	DPR00332
LIMS ID							
Sample Loaded (Date / Time)	02/24 09:00	02/24 08:32		02/24 10:05	02/24 10:31	02/24 10:57	02/24 11:56
Sample Start (If Different From Load)	02/27 11:30	02/27 10:30		02/27 13:00	02/27 13:45	02/27 14:45	02/27 15:45
Sample Stop (Date / Time)	2/28 11:06	2/28 10:15		2/28 12:32	2/28 13:09	2/28 13:54	2/28 15:05
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1331 / 1354.6	649.3 / 673.1	/	1764.6 / 1788.1	1793.3 / 1816.7	886.9 / 910.1	820.4 / 843.7
Flow (Start / Stop (SCCM))	520 / 526	540 / 567	/	541 / 527	550 / 589	538 / 531	546 / 536

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions

Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	N L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	S L M H	S L (M) H	S L (M) H	S L (M) H	S (L) M H

Field Notes / Comments:							
Trip Spike 2/24/17							

Delivered to Lab (Date / Time, Initials)	3/3/17 1700 KY
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

Site Operator: KY

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Week #: 5 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-18	HM-18	HM-18(FB/CO/FS)	CC-18	TY-18	SJ-18	FO-18
Barcode	DPR00333	DPR00334	DPR00335	DPR00336	DPR00337	DPR00338	DPR00339
LIMS ID							
Sample Loaded (Date / Time)	2/28 11:55	2/28 10:26	2/28 10:32	2/28 12:38	2/28 13:13	2/28 13:58	2/28 15:25
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/1 10:55	3/1 9:30	3/1 9:37	3/1 12:10	3/1 12:45	3/1 KY 13:20	3/1 14:30
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1354.7 / 1378.2	673.1 / 696.1	655.2 / 678.2	1788.1 / 1811.6	1816.7 / 1840.3	910.1 / 1933.2	KY 843.7 / 866.7
Flow (Start / Stop (SCCM))	515 / 531	501 / 514	499 / 501	515 / 510	522 / 569	524 / KY 513	524 / 496

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	3/3/17 17:00 KY
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 5 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-19	HM-19	HM-19(FB/CO/FS)	CC-19	TY-19	SJ-19	FO-19
Barcode	DPR00340	DPR00341	DPR00342	DPR00343	DPR00344	DPR00345	DPR00346
LIMS ID							
Sample Loaded (Date / Time)	3/1 11:00 KY	3/1 9:34	3/1 9:42	3/1 12:14	3/1 12:50	3/1 13:25	3/1 14:32
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/2 10:00	3/2 9:00	3/2 9:06	3/2 11:15	3/2 11:53	3/2 12:28	3/2 13:33
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1378.3/1401.1	696.2/719.5	678.3/701.6	1811.7/1834.6	1840.3/1863.3	933.5/1956.5	866.8/889.8
Flow (Start / Stop (SCCM))	515 / 516	510 / 497	510 / 501	518 / 506	504 / 482	519 / 505	525 / 501

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	3/3/17 17:00 KY
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board
MITC Intensive Seasonal Mo... Study - Fresno County
...oratory / Field Data Sheet

Site Operator: KY

Week #: 5 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-20	HM-20	HM-20(FB/CO/FS)	CC-20	TY-20	SJ-20	FO-20
Barcode	DPR00347	DPR00348	DPR00349	DPR00350	DPR00351	DPR00352	DPR00353
LIMS ID							
Sample Loaded (Date / Time)	3/2 10:04	3/2 9:04	3/2 9:10	3/2 11:19	3/2 11:57	3/2 12:33	3/2 13:38
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/3 9:45	3/3 8:30	3/3 8:15	3/3 10:53	3/3 11:51	3/3 12:35	3/3 13:40
Removed (If Different From Stop)				1834.7			
ETM (Start / Stop (Hours))	1401.1/1424.8	719.6/743.0	701.6/701.6	KY 1858.2	1863.3/1874.2	956.6/980.4	889.8/913.8
Flow (Start / Stop (SCCM))	512/513	513/465	— / —	517/488	520/634	520/500	524/436

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	(S) L M H	S (L) M H	S (L) M H	S (L) M H

Field Notes / Comments:							
				4674	new pump installed → old pump not running upon arrival		

Delivered to Lab (Date / Time, Initials)	3/3/17 17:00 KY
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY/SA

Week #: 6 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-21	HM-21	HM-21(FB/CO/FS)	CC-21	TY-21	SJ-21	FO-21
Barcode	DPR00354	DPR00355	DPR00356	DPR00357	DPR00358	DPR00359	DPR00360
LIMS ID							
Sample Loaded (Date / Time)	3/3 9:46	3/3 8:36	KY	3/3 10:56	3/3 11:57	3/3 12:40	3/3 13:45
Sample Start (If Different From Load)	3/7 9:25	3/7 9:00	KY	3/7 10:20	3/7 10:40	3/7 11:15	3/7 12:00
Sample Stop (Date / Time)	3/7 09/27	3/7 08:43		3/7 10:20	3/7 10:41		3/7 11:51
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1424.8 / 1448.4	743.0 / 766.7	/	1858.2 / 1882.2	.7 / 24.7	980.5 / 1004.3	913.9 / 937.7
Flow (Start / Stop (SCCM))	523 / 526	526 / 584 -696	/	527 / 547	526 / 507	524 / 541	540 / 843

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							
		SAMPLER WAS ON THE GROUND UPON ARRIVAL. FLOW FLUCTUATING ~580 - 700					

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE A.

Week #: 6 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-22	HM-22	HM-22(FB/CO/FS)	CC-22	TY-22	SJ-22	FO-22
Barcode	DPR00361	DPR00362	DPR00363	DPR00364	DPR00365	DPR00366	DPR00367
LIMS ID							
Sample Loaded (Date / Time)	3/7 09:34	3/7 08:57	3/7 09:02	3/7 10:22	3/7 10:43	3/7 11:07	3/7 11:55
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/8 09:52	3/8 08:23	3/8 08:24	3/8 09:46	3/8 10:09	3/8 10:45	3/8 11:30
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1448.9/1472.3	766.7/~~SP~~ 790.1	701.6/724.9	1882.2/1905.6	24.7/44.0	1004.3/1028.0	937.7/961.3
Flow (Start / Stop (SCCM))	530 / 524	527 / 508	544 / 544	537 / 526	540 / 523	543 / 524	518 / 554

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							
		SP ~~FIELD~~ TRIP SPIKE 12:05 03/03/17					

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE A.

Week #: 6 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-23	HM-23	HM-23(FB/CO/FS)	CC-23	TY-23	SJ-23	FO-23
Barcode	DPR00368	DPR00369	DPR00370	DPR00371	DPR00372	DPR00373	DPR00374
LIMS ID							
Sample Loaded (Date / Time)	3/8 08:58	3/8 08:28	3/8 08:34	3/8 09:50	3/8 10:20	3/8 10:48	3/8 11:34
Sample Start (If Different From Load)		3/9 08:03	3/9 08:06				
Sample Stop (Date / Time)	3/9 08:30	↓	↓	3/9 09:29	3/9 09:54	3/9 10:18	3/9 11:39
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1492.3 / 1495.8	790.1 / 791.1	724.9 / 748.5	1905.6 / 1929.3	44.0 / 45.7	1028.0 / 1051.5	961.3 / 984.9
Flow (Start / Stop (SCCM))	538 / 533	532 / 568	547 / 543	539 / 530	543 / 538	529 / 506	538 / 523

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							
		POWER CABLES ~~WAS~~ SMA NOT CONNECTED TO THE PUMP BOX.			PUMP NOT RUNNING DURING SITE VISIT.		

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE A.

Week #: 6 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-24	HM-24	HM-24(FB/CO/FS)	CC-24	TY-24	SJ-24	FO-24
Barcode	DPR00375	DPR00376	DPR00377	DPR00378	DPR00379	DPR00380	DPR00381
LIMS ID							
Sample Loaded (Date / Time)	3/9 08:37	3/9 08:13	3/9 08:14	3/9 09:31	3/9 09:56	3/9 10:21	3/9 11:11
Sample Start (If Different From Load)	~~07~~						
Sample Stop (Date / Time)	3/10 07:39	3/10 07:14	~~3/10~~ 3/9 08:15	~~3/9~~ 3/9 08:34	3/10 09:03	3/10 ~~09:28~~ 09:28	3/10 10:16
Removed (If Different From Stop)			3/10	3/10			
ETM (Start / Stop (Hours))	1495.8 / 1518.9	791.1 / 814.1	748.5 / 748.5	1929.3 / 1952.3	45.7 / 62.0	1051.5 / 1074.8	984.9 / 1008.0
Flow (Start / Stop (SCCM))	534 / 539	544 / 516	0 / 0	536 / 538	545 / 520	548 / 529	525 / 563

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H

Field Notes / Comments:							
					PUMP MALFUNCTIONED. REPLACED PUMP #4674 WITH PUMP # 4675.		

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SA/KY

Week #: 7 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-25	HM-25	HM-25(FB/CO/FS)	CC-25	TY-25	SJ-25	FO-25
Barcode	DPR00382	DPR00383	DPR00384	DPR00385	DPR00386	DPR00387	DPR00388
LIMS ID							
Sample Loaded (Date / Time)	3/10 09:44	3/10 07:20		3/10 08:36	3/10 09:00	3/10 09:31	3/10 10:18
Sample Start (If Different From Load)	3/13 10:30	3/13 10:30		3/13 13:00	3/13 13:45	3/13 14:45	3/13 15:45
Sample Stop (Date / Time)	3/14 10:35	3/14 9:32		3/14 12:00	3/14 12:45	3/14 13:45	3/14 14:45
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1518.9 / 1542.0 KY	814.2 / 837.2	/	1952.3 / 1975.3	648.9 / 671.4	1074.8 / 1097.3	1008.0 / 1030.9
Flow (Start / Stop (SCCM))	549 / 533	527 / 629	/	592 / 507	531 / 522	534 / 487	535 / 574

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	N L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	S L M H	S (L) M H	S (L) M H	S (L) M H	S (L) M H

Field Notes / Comments:							
Trip spike 0725 3/10/17 (Lab date) 3/14/17 (Field date)							

Delivered to Lab (Date / Time, Initials)	3/17/17 15:40 KY
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 7 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-26	HM-26	HM-26(FB/CO/FS)	CC-26	TY-26	SJ-26	FO-26
Barcode	DPR00389	DPR00390	DPR00391	DPR00392	DPR00393	DPR00394	DPR00395
LIMS ID							
Sample Loaded (Date / Time)	3/14 10:42	3/14/17 9:47	3/14/17 9:55	3/14 12:02	3/14 12:47	3/14 13:47	3/14 14:48
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/15 9:42	3/15 8:55	3/15 9:02	3/15 11:10	3/15 11:47	3/15 12:47	3/15 13:48
Removed (If Different From Stop)	1542.0					1097.4	
ETM (Start / Stop (Hours))	KY [redacted] / 1565.0	837.2 / 860.3	748.5 / 771.6	1975.3 / 1998.4	671.4 / 694.4	[redacted] / 1203 KY	1031.0 / 1053.9
Flow (Start / Stop (SCCM))	520 / 510	527 / 503	523 / 497	521 / 511	518 / 518	520 / 517	521 / 513

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S L (M) H	S L (M) H	S (L) M H	S (L) M H	(S) L M H	S (L) M H

Field Notes / Comments:							
		adjusted clock	adjusted clock			adjusted clock	

Delivered to Lab (Date / Time, Initials)	3/17/17 15:40 KY
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 1 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-27	HM-27	HM-27(FB/CO/FS)	CC-27	TY-27	SJ-27	FO-27
Barcode	DPR00396	DPR00397	DPR00398	DPR00399	DPR00400	DPR00401	DPR00402
LIMS ID							
Sample Loaded (Date / Time)	3/15 9:47	3/15 9:00	3/15 9:09	3/15 11:14	3/15 11:50	3/15 12:46	3/15 1:50
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/16 9:14	3/16 8:30	3/16 8:37	3/16 10:20	3/16 11:11	3/16 11:52	3/16 12:54
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1565.0/1588.4	860.3/883.8	771.6/795.1	1998.5/2021.5	694.4/699.7	1120.4/1143.2	1053.9/1077.0
Flow (Start / Stop (SCCM))	517/530	521/446	525/515	524/526	524/535	520/526	521/533

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							
					pump not running upon arrival stopped at 699.7 (old # 4675)	installed pump #4671 start 888.0 ETM	

Delivered to Lab (Date / Time, Initials)	3/17/17 15:40 KY
Delivered Frozen? (Circle Y or N)	Y N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 7 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-28	HM-28	HM-28(FB/CO/FS)	CC-28	TY-28	SJ-28	FO-28
Barcode	DPR00403	DPR00404	DPR00405	DPR00406	DPR00407	DPR00408	DPR00409
LIMS ID							
Sample Loaded (Date / Time)	3/16 9:17	3/16 8:34	3/16 8:40	3/16 10:23	3/16 11:15	3/16 11:55	3/16 12:57
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/17 9:02	3/17 8:17	3/17 8:19	3/17 10:15	3/17 10:47	3/17 11:24 KY	3/17 12:29
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1588.4/1612.2	883.8/907.5	795.1/795.1	2021.6/2045.4	888.0/911.5	1143.2/1167.0	1077.0/1100.5
Flow (Start / Stop (SCCM))	517/511	528/502	/ —	524/527	520/501	523/504 KY	518/542

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	S (L) M H	(S) L M H	(S) L M H	S (L) M H	(S) L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	3/17/17 15:40 KY
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY / SA

Week #: 8 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-29	HM-29	HM-29(FB/CO/FS)	CC-29	TY-29	SJ-29	FO-29
Barcode	DPR00410	DPR00411	DPR00412	DPR00413	DPR00414	DPR00415	DPR00416
LIMS ID							
Sample Loaded (Date / Time)	3/17 9:11	3/17 8:28	KY	3/17 10:20	3/17 10:55	3/17 11:27	3/17 12:32
Sample Start (If Different From Load)	3/20 9:25	3/20 9:00		3/20 10:20	3/20 10:40	3/20 11:15	3/20 12:00
Sample Stop (Date / Time)							
Removed (If Different From Stop)	3/21 08:26	3/21 08:01		3/21 09:21	3/21 09:40	3/21 10:16	3/21 11:00
ETM (Start / Stop (Hours))	1612.2 / 1635.2	907.5 / 930.5	/	2045.4 / 2068.4	911.5 / 934.5	1167.0 / 1189.0	1100.5 / 1123.5
Flow (Start / Stop (SCCM))	527 / 650	525 / 538	/	529 / 523	535 / 523	533 / 540	513 / 558

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	N (L) M H	N L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	S L M H	S (L) M H	S L (M) H	S L (M) H	S (L) M H

Field Notes / Comments:							
TRIP SPIKE 3-17-17 10:20 A.M INITIATED 3-21-17 08:30 AM							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHA

Week #: 8 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-30	HM-30	HM-30(FB/CO/FS)	CC-30	TY-30	SJ-30	FO-30
Barcode	DPR00417	DPR00418	DPR00419	DPR00420	DPR00421	DPR00422	DPR00423
LIMS ID							
Sample Loaded (Date / Time)	3/21 08:27	3/21 08:02	3/21 08:04	3/21 09:22	3/21 09:41	3/21 10:17	3/21 11:01
Sample Start (If Different From Load)		3/22					
Sample Stop (Date / Time)	3/22 08:20	3/2 09:54	3/22 07:58	3/22 09:12	3/22 09:36	3/22 10:00	3/22 10:49
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1635.2 / 1659.1	930.5 / 954.4	795.1 / 819.0	2068.4 / 2092.2	934.5 / 958.4	1189.0 / 1213.8	1123.5 / 1147.4
Flow (Start / Stop (SCCM))	525 / 545	540 / 538	536 / 538	538 / 539	520 / 498	540 / 530	524 / 540

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

rator: CMA

Week #: 8 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-31	HM-31	HM-31(FB/CO/FS)	CC-31	TY-31	SJ-31	FO-31
Barcode	DPR00424	DPR00425	DPR00426	DPR00427	DPR00428	DPR00429	DPR00430
LIMS ID							
Sample Loaded (Date / Time)	3/22 08:23	3/22 07:58	3/22 08:02	3/22 09:15	3/22 09:38	3/22 10:03	3/22 10:52
Sample Start (If Different From Load)		34					
Sample Stop (Date / Time)	3/23 ~~08:85~~ 08:05	3/23 07:38	3/23 07:44	3/23 08:56	3/23 09:17	3/23 09:40	3/23 10:28
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1659.1 / 1682.6	954.4 / 978.1	819.0 / 842.6	2092.2 / 2115.9	958.4 / 982.0	1213.8 / 1237.4	1147.4 / 1170.9
Flow (Start / Stop (SCCM))	524 / 548	532 / 533	543 / 542	548 / 520	530 / 489	528 / 542	544 / 526

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA

Week #: 8 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-32	HM-32	HM-32(FB/CO/FS)	CC-32	TY-32	SJ-32	FO-32
Barcode	DPR00431	DPR00432	DPR00433	DPR00434	DPR00435	DPR00436	DPR00437
LIMS ID							
Sample Loaded (Date / Time)	3/23 08:09	3/23 07:43	3/23 07:45	3/23 08:58	3/23 09:19	3/23 09:43	3/23 10:29
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/24 07:10	3/24 06:47	3/23 07:46	3/24 08:05	3/24 08:26	3/24 08:53	3/24 09:40
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1682.8/1705.8	978.1/1001.1	842.6/842.6	2115.9/2137.0	982.0/1005.1	1237.4/1260.5	1170.9/1194.1
Flow (Start / Stop (SCCM))	533 / 547	522 / 530	0 / 0	528 / 518	549 / 510	543 / 510	527 / 493

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SA/KY

Week #: 9 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-33	HM-33	HM-33(FB/CO/FS)	CC-33	TY-33	SJ-33	FO-33
Barcode	DPR00438	DPR00439	DPR00440	DPR00441	DPR00442	DPR00443	DPR00444
LIMS ID							
Sample Loaded (Date / Time)	3/24 07:14	3/24 06:51		3/24 08:07	3/24 08:29	3/24 08:55	3/24 09:43
Sample Start (If Different From Load)	3/26 10:15	3/26 10:15		3/26 12:15	3/26 13:00	3/26 13:45	3/26 14:45
Sample Stop (Date / Time)	3/27 10:41	3/27 9:45		3/27 11:50	3/27 12:24	3/27 13:05	3/27 14:15
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1705.8 / 1729.3	1001.1 / 1024.7	/	2139.0 / 2162.5	1005.1 / 1028.5	1260.5 / 1281.6	1194.1 / 1217.6
Flow (Start / Stop (SCCM))	531 / 512	537 / 555	/	538 / 555	540 / 646	528 / 527	550 / 578

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							
Trip spike 3/24/17 Field date ~ 3/27/17						adjusted clock	

Delivered to Lab (Date / Time, Initials)	3/30/17 1530 KY
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 9 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-34	HM-34	HM-34(FB/CO/FS)	CC-34	TY-34	SJ-34	FO-34
Barcode	DPR00445	DPR00446	DPR00447	DPR00448	DPR00449	DPR00450	DPR00451
LIMS ID							
Sample Loaded (Date / Time)	3/27 10:46	3/27 10:04	3/27 10:08	3/27 11:52	3/27 12:27	3/27 13:10	3/27 14:18
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/28 9:51	3/28 9:04	3/28 9:11	3/28 11:10	3/28 11:46	3/28 12:22	3/28 13:31
Removed (If Different From Stop)	1729.3						
ETM (Start / Stop (Hours))	KY 1752.3	1024.7/1047.6	842.7/865.7	2162.6/2185.8	1028.6/1050.5	1281.6/1302.9	1217.6/1240.8
Flow (Start / Stop (SCCM))	KY 524 / 543	521 / 521	520 / 546	529 / 514	517 / 543	520 / 523	530 / 537

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L (M) H	S (L) M H	S (L) M H	S L (M) H	S L M (H)	S L (M) H	S (L) M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	3/30/17 1530 KY
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 9 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-35	HM-35	HM-35(FB/CO/FS)	CC-35	TY-35	SJ-35	FO-35
Barcode	DPR00452	DPR00453	DPR00454	DPR00455	DPR00456	DPR00457	DPR00458
LIMS ID							
Sample Loaded (Date / Time)	3/28 10:00	3/28 9:08	3/28 9:17	3/28 11:14	3/28 11:51	3/28 12:25	3/28 13:33
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/29 9.25	3/29 8:30	3/29 8:40	3/29 10:39	3/29 KY 11:12	3/29 11:50	3/29 12:53
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1752.4/1775.6	1047.7/1071.0	865.7/889.1	2185.8/2209.2	1050.5/1072.4	1302.9/1326.3	1240.8/1264.1
Flow (Start / Stop (SCCM))	518 / 524	519 / 509	518 / 537	529 / 500	509 / 496	525 / 486	528 / 527

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	S (L) M H	S (L) M H	S (L) M H	S L (M) H	S (L) M H	S (L) M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	3/30/17 1530 KY
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 9 **Day:** 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-36	HM-36	HM-36(FB/CO/FS)	CC-36	TY-36	SJ-36	FO-36
Barcode	DPR00459	DPR00460	DPR00461	DPR00462	DPR00463	DPR00464	DPR00465
LIMS ID							
Sample Loaded (Date / Time)	3/29 9:32	3/29 8:38	3/29 8:45	3/29 10:44	3/29 11:17	3/29 11:53	3/29 12:56
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	3/30 8:32	3/30 7:47	3/30 7:49	3/30 9:44	3/30 10:17	3/30 10:53	3/30 11:56
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1775.6/1798.7	1071.0/1094.2	889.1 / 889.1	2209.2/2232.2	1072.4/1095.3	1326.3/1349.3	1264.1/1287.1
Flow (Start / Stop (SCCM))	522 / 528	524 / 494	— / —	528 / 505	524 / 496	532 / 520	527 / 562

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	3/30/17 1530 KY
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY/SA

Week #: 10 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-37	HM-37	HM-37(FB/CO/FS)	CC-37	TY-37	SJ-37	FO-37
Barcode	DPR00466	DPR00467	DPR00468	DPR00469	DPR00470	DPR00471	DPR00472
LIMS ID							
Sample Loaded (Date / Time)	3/30 8:36	3/30 7:58		3/30 9:46	3/30 10:19	3/30 10:54	3/30 12:00
Sample Start (If Different From Load)	4/2 9:25	4/2 9:00		4/2 10:20	4/2 10:40	4/2 11:15	4/2 12:00
Sample Stop (Date / Time)							
Removed (If Different From Stop)	4/3 08:25	4/3 08:00		4/3 09:20	4/3 09:40	4/3 10:15	4/3 11:00
ETM (Start / Stop (Hours))	1798.8 / 1821.8	1094.2 / 1117.2	SMA ~~1H~~ /	2232.2 / 2255.2	1095.4 / 1118.3	1349.3 / ~~1183~~ 1372.2 SMA	1287.1 / 1310
Flow (Start / Stop (SCCM))	527 / 549	530 / 540	/	530 / 513	530 / 544	534 / 516	525 / 601

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	N L M H	(N) L M H	(N) L M H	(N) L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	S L M H	S L (M) H	S L (M) H	S L (M) H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	4/6 1300 SMA
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE A.

Week #: 10 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-38	HM-38	HM-38(FB/CO/FS)	CC-38	TY-38	SJ-38	FO-38
Barcode	DPR00473	DPR00474	DPR00475	DPR00476	DPR00477	DPR00478	DPR00479
LIMS ID							
Sample Loaded (Date / Time)	4/3 08:26	4/3 08:01	4/3 07:47	4/3 09:21	4/3 09:41	4/3 10:16	4/3 11:01
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	4/4 07:37	4/4 07:17	4/4 07:11	4/4 08:29	4/4 08:50	4/4 09:16	4/4 10:02
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1821.8/1845.0	1117.2/1140.5	889.1/912.4	2255.2/2278.3	1118.4/1141.5	1372/1395.3	1310.1/1333.1
Flow (Start / Stop (SCCM))	542 / 567	534 / 483	550 / 585	545 / 521	549 / 496	534 / 496	544 / 485

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H

Field Notes / Comments:							
TRIP SPIKE 3-30-17 9:20 AM INITIATED ON 4/3 @ 08:02							

Delivered to Lab (Date / Time, Initials)	4/6 1300 SMA
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE

Week #: 10 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-39	HM-39	HM-39(FB/CO/FS)	CC-39	TY-39	SJ-39	FO-39
Barcode	DPR00480	DPR00481	DPR00482	DPR00483	DPR00484	DPR00485	DPR00486
LIMS ID							
Sample Loaded (Date / Time)	4/4 07:40	4/4 07:20	4/4 07:16	4/4 08:31	4/4 08:51	4/4 09:17	4/4 10:03
Sample Start (If Different From Load)							
Sample Stop (Date / Time)	4/5 07:30	4/5 07:08	4/5 07:05	4/5 08:16	4/5 08:38	4/5 09:00	4/5 09:43
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1845.0 / 1868.0	1140.5 / 1164.3	912.5 / 936.3	2278.3 / 2302.1	1141.5 / 1165.3	1395.3 / 1419.0	1333.1 / 1356.7
Flow (Start / Stop (SCCM))	535 / 538	545 / 539	534 / 531	524 / 490	532 / 551	535 / 509	550 / 546

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	4/6 1500 SMA
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Sheet
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SHERWINE A

Week #: 10 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno
Sample Name (Site-#[-CO/FS/FB])*	HC-40	HM-40	HM-40(FB/CO/FS)	CC-40	TY-40	SJ-40	FO-40
Barcode	DPR00487	DPR00488	DPR00489	DPR00490	DPR00491	DPR00492	DPR00493
LIMS ID							
Sample Loaded (Date / Time)	4/5 07:34	4/5 07:11	4/5 07:12	4/5 08:19	4/5 08:40	4/5 09:02	4/5 09:45
Sample Start (If Different From Load)	SMC		4 SMC				
Sample Stop (Date / Time)	~~4/5~~ 4/6 07:07	4/6 06:45	4/5 07:13	4/6 07:56	4/6 08:20	4/6 08:42	4/6 09:31
Removed (If Different From Stop)							
ETM (Start / Stop (Hours))	1868.0 / 1892.4	1164.3 / 1187.8	936.3 / 936.3	2302.1 / 2325.7	1165.3 / 1188.9	1419.0 / 1442.7	1356.7 / 1380.5
Flow (Start / Stop (SCCM))	541 / 549	542 / 533	0 / 0	550 / 520	540 / 449	545 / 544	549 / 522

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	4/6 13:00 SMA
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA/KY

Week #: 11 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-41	HM-41	HM-41(FB/CO/FS)	CC-41	TY-41	SJ-41	FO-41	
Barcode	DPR00520	DPR00521	DPR00522	DPR00523	DPR00524	DPR00525	DPR00526	DPR00527
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/6 06.11	4/6 05.49		4/6 06:58	4/6 07.22	4/6 07:44	4/6 08:33	~~4/7/17 14:15~~ KY
Sample Start (If Different From Load)	4/9 10:15	4/9 9.15		4/9 11:15	4/9 12.00	4/9 12.45	4/9 13:45	O.K. KY
Sample Stop (Date / Time)	4/10 9:27	4/10 8:35		4/10 10:40	4/10 11 19	4/10 11.50	4/10 12:45	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	KY ~~1892.4~~ / 1939.6	1187.8 / 1211.2	/	2325.7 / 2349.1	1188.9 / 1212.2	1442.7 / 1465.8	1380.5 / 1403.5	
Flow (Start / Stop (SCCM))	546 / 554	536 / 512	/	538 / 532	558 / 648	547 / 540	541 / 588	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	~~(N)~~ L M H KY	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L (M) H	S L (M) H	S L ~~(M)~~ H KY	S L (M) H	S L (M) H	S L (M) H	S L (M) H

Field Notes / Comments:	Day of week on pump display incorrect (Tu); changed to Monday						

Delivered to Lab (Date / Time, Initials)	4/13/17 15:45 KY
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 11 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-42	HM-42	HM-42(FB/CO/FS)	CC-42	TY-42	SJ-42	FO-42	
Barcode	DPR00528	DPR00529	DPR00530	DPR00531	DPR00532	DPR00533	DPR00534	DPR00535
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/10 9:38	4/10 8 49	4/10 8 53	4/10 10:45	4/10 11:21	4/10 11:52	4/10 12 52	KY
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	4/11 8 38	4/11 7 50	4/11 7 55	4/11 9:45	4/11 10 21	4/11 10 52	4/11 11:52	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	1939.6/1962.6	1211.2/1234.2	936.3/959.3	2349.1/2372.1	1212.2/1235.2	1465.8/1488.8	1403.5/1426.5	
Flow (Start / Stop (SCCM))	510 / 515	529 / 495	530 / 521	528 / 504	532 / 522	526 / 512	527 / 452	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	KY N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							
	adjusted pump digital clock (min)			adjusted pump digital clock (min)			

Delivered to Lab (Date / Time, Initials)	4/13/17 15:45 KY
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 11 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-43	HM-43	HM-43(FB/CO/FS)	CC-43	TY-43	SJ-43	FO-43	
Barcode	DPR00536	DPR00537	DPR00538	DPR00539	DPR00540	DPR00541	DPR00542	DPR00543
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/11 8:42	4/11 7:54	4/11 8:01	4/11 9:46	4/11 10:22	4/11 10:56	4/11 11:54	—
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	4/12 7:59	4/12 7:07	4/12 7:13	4/12 8:57	4/12 9:26	4/12 9:59	4/12 10:57	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	1962.6/1985.8	1234.2/1257.4	959.3/982.5	2372.1/2395.3	1235.2/1258.2	1488.8/1511.8	1426.5/1449.6	
Flow (Start / Stop (SCCM))	512/476	533/541	534/512	522/473	534/496	526/490	539/472	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	4/13/17 15:45 KY
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 11 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-44	HM-44	HM-44(FB/CO/FS)	CC-44	TY-44	SJ-44	FO-44	
Barcode	DPR00544	DPR00545	DPR00546	DPR00547	DPR00548	DPR00549	DPR00550	DPR00551
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/12 8:04	4/12 7:12	4/12 7:17	4/12 9:00	4/12 9:29	4/12 10:01	4/12 11:00	—
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	4/13 7:45	4/13 6:58	4/13 7:02	4/13 8:59	4/13 9:30	4/13 10:00	4/13 11:05	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	1985.9/2009.5	1257.4/1281.2	982.5/982.5	2395.3/2419.3	1258.2/1282.2	1511.8/1535.8	1449.6/1473.7	
Flow (Start / Stop (SCCM))	535/638	528/512	— / —	534/557	536/548	528/521	537/587	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	4/13/17 15:45 KY
Delivered Frozen? (Circle Y or N)	Y N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA / KY

Week #: 12 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-45	HM-45	HM-45(FB/CO/FS)	CC-45	TY-45	SJ-45	FO-45	
Barcode	DPR00552	DPR00553	DPR00554	DPR00555	DPR00556	DPR00557	DPR00558	DPR00559
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/13 7:52	4/13 7:09	—	4/13 9:02	4/13 9:34	4/17 10:04	4/13 11:09	
Sample Start (If Different From Load)	4/16 7:20	4/16 7:00	—	4/16 8:00	4/16 8:20	4/16 8:50	4/16 9:40	
Sample Stop (Date / Time)	4/17 6:39	4/17 6:16	—	4/17 7:26	4/17 7:49	4/17 8:12	4/17 9:07	
Removed (If Different From Stop)			—					
ETM (Start / Stop (Hours))	2009.6/2032.9	1281.2 / 1304.5	— / —	2419.3/2442.7	1282.2/1305.7	1535.8 / 1559.2	1473.7/ 1497.1	
Flow (Start / Stop (SCCM))	530 / 535	532 / 563	— / —	527 / 574	526 / 489	526 / 553	528 / 551	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	N L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	S L M H	S (L) M H	S (L) M H	S (L) M H	S (L) M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA

Week #: 12 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-46	HM-46	HM-46(FB/CO/FS)	CC-46	TY-46	SJ-46	FO-46	
Barcode	DPR00560	DPR00561	DPR00562	DPR00563	DPR00564	DPR00565	DPR00566	DPR00567
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/17 6:42	4/17 6:22	4/17 6:24	4/17 7:28	4/17 7:51	4/17 8:14	4/17 9:09	4/14 11:00
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	4/18 6:44	4/18 6:22	4/18 6:25	4/18 7:44	4/18 8:13	4/18 8:36	4/18 9:22	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2032.9/2057.1	1304.5/1328.4	982.5/1006.5	2442.7/2466.9	1305.7/1330.1	1559.2/1583.4	1497.1/1521.3	
Flow (Start / Stop (SCCM))	542 / 539	544 / 549	531 / 547	547 / 548	550 / 665	540 / 586	536 / 546	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							
TRIP SPIKE INITIATED ON 4/17 @ 6:30							

Delivered to Lab (Date / Time; Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA

Week #: 12 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-47	HM-47	HM-47(FB/CO/FS)	CC-47	TY-47	SJ-47	FO-47	
Barcode	DPR00568	DPR00569	DPR00570	DPR00571	DPR00572	DPR00573	DPR00574	DPR00575
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/18 6:46	4/18 6:24	4/18 6:26	4/18 7:28	4/18 8:01	4/18 8:38	4/18 9:23	
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	4/19 6:48	4/19 6:18	4/~~18~~ 19 6:25	4/19 7:38	4/19 8:00	4/19 8:25	4/19 9:09	
Removed (If Different From Stop)			SL					
ETM (Start / Stop (Hours))	2057.1 / 2050.6	1328.4 / 1352.3	983.5 / 1050.5	2442.7 / 2490.3	1305.7 / 1338.8	1558.2 / 1607.4	1497.1 / 1548.1	
Flow (Start / Stop (SCCM))	541 / 495	544 / 578	530 / 544	545 / 528	548 / ~~54~~ SL 511	549 / 501	518 / 531	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	S (L) M H	S (L) M H	S (L) M H	(S) L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA

Week #: 12 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-48	HM-48	HM-48(FB/CO/FS)	CC-48	TY-48	SJ-48	FO-48	
Barcode	DPR00576	DPR00577	DPR00578	DPR00579	DPR00580	DPR00581	DPR00582	DPR00583
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/19 6:52	4/19 6:25	4/19 6:26	4/19 7:39	4/19 8:04	4/19 8:27	4/19 9:10	
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	4/20 5:52	4/20 5:25	4/19 6:27	4/20 6:39	4/20 7:04	4/20 7:28	4/20 8:11	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2081.0 / 2104.0	1352.4 / 1375.4	1030.5 / 1030.5	2490.8 / 2513.8	1353.8 / 1376.8	1607.4 / 1632.4	1545.1 / 1568.1	
Flow (Start / Stop (SCCM))	521 / 562	526 / 519	0 / 0	544 / 548	55 / 546	548 / 577	531 / 560	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	S (L) M H	S (L) M H	S L (M) H	S L (M) H	S L (M) H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

r: SMA / KY

Week #: 13 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-49	HM-49	HM-49(FB/CO/FS)	CC-49	TY-49	SJ-49	FO-49	
Barcode	DPR00584	DPR00585	DPR00586	DPR00587	DPR00588	DPR00589	DPR00590	DPR00591
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/20 5:53	4/20 5:26	~~4/20~~ 4/21 –	4/20 6:40	4/20 7:05	4/20 7:29	4/20 8:12	4/21/17 9:36
Sample Start (If Different From Load)	4/22 10:30	4/22 9:30	~~[illegible]~~ 2 KY –	4/22 11:30	4/22 12:15	4/22 1:00	4/22 2:00	
Sample Stop (Date / Time)	4/23 9:44	4/23 9:21	~~[illegible]~~ KY –	4/23 10:30	4/23 11:15	4/23 12:00	4/23 1:00	
Removed (If Different From Stop)			–					
ETM (Start / Stop (Hours))	2104.0/2127.1	1375.4/1399.2	– / –	2513.2/2536.8	1376.2/1399.7	1630.4/1653.3	1568.1/1591.0	
Flow (Start / Stop (SCCM))	540 / ~~[illegible]~~ 575 KY	538 / 596	– / –	537/505	520/535	535/515	535/837	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	N L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	S L M H	S (L) M H	S ~~(L)~~ (M) H KY	S (L) M H	S L (M) H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	4/26/17 15:35
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 13 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-50	HM-50	HM-50(FB/CO/FS)	CC-50	TY-50	SJ-50	FO-50	
Barcode	DPR00592	DPR00593	DPR00594	DPR00595	DPR00596	DPR00597	DPR00598	DPR00599
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/23 9:47	4/23 9:26	4/23 9:27	4/23 10:33	4/23 11:17	4/23 12:02	4/23 1:02	—
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	4/24 9:37	4/24 8:50	4/24 9:02	4/24 10:46	4/24 11:17	4/24 11:54	4/24 12:59	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2127.1/2150.9	1399.2/1422.6	1030.5/1054.0	2536.8/2560.9	1399.8/1423.7	1653.4/1677.2	1591.0/1605.0	
Flow (Start / Stop (SCCM))	525/530	523/517	530/530	525/516	524/533	526/520	529/511	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	4/26/17 15:35
Delivered Frozen? (Circle Y or N)	Y N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 13 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-51	HM-51	HM-51(FB/CO/FS)	CC-51	TY-51	SJ-51	FO-51	
Barcode	DPR00600	DPR00601	DPR00602	DPR00603	DPR00604	DPR00605	DPR00606	DPR00607
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/24 9:43	4/24 9:00 KY	4/24 9:08	4/24 10:48	4/24 11:19	4/24 11:56	4/24 13:02	—
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	4/25 8:49	4/25 8:00	4/25 8:08	4/25 9:53	4/25 10:27	4/25 10:57	4/25 12:02	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2151.0/2174.1	1422.6/1445.6	1054.0/1077.0	2561.0/2584.0	1423.8/1446.9	1677.2/1700.2	1615.0/1638.0	
Flow (Start / Stop (SCCM))	520/497	527/481	525/507	534/509	528/502	525/501	526/497 KY	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	4/26/17 15:35
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 13 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-52	HM-52	HM-52(FB/CO/FS)	CC-52	TY-52	SJ-52	FO-52	
Barcode	DPR00608	DPR00609	DPR00610	DPR00611	DPR00612	DPR00613	DPR00614	DPR00615
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/25 8:54	4/25 8:04	4/25 8:10	4/25 9:55	4/25 10:30	4/25 11:00	4/25 12:02	—
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	4/26 7:54	4/26 7:04 KY	4/26 7:10	4/26 8:55	4/26 9:30	4/26 10:00	4/26 11:02	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2174.1/2197.1	1475.6/1468.10	1077.0/1077.0	2584.0/2607.0	1446.9/1469.8	1700.2/1723.2	1638.0/1661.0	
Flow (Start / Stop (SCCM))	524/496	529/509	— / —	529/536	524/520	527/497 KY	523/513	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	S (L) M H	S L (M) H	S (L) M H	S (L) M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	4/26/17 15:35
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY/SMA

Week #: 14 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-53	HM-53	HM-53(FB/CO/FS)	CC-53	TY-53	SJ-53	FO-53	
Barcode	DPR00616	DPR00617	DPR00618	DPR00619	DPR00620	DPR00621	DPR00622	DPR00623
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	4/26 7:57	4/26 7:08	—	4/26 8:58	4/26 9:32	4/26 10:02	4/26 11:05	
Sample Start (If Different From Load)	4/30 7:20	4/30 7:00	—	4/30 8:00	4/30 8:20	4/30 8:40	4/30 9:30	
Sample Stop (Date / Time)			—					
Removed (If Different From Stop)	05/01 07:06	05/01 06:29	—	05/01 7:55	05/01 08:15	05/01 08:37	05/01 09:23	
ETM (Start / Stop (Hours))	2197.1 / 2220.9	1468.6 / 1492.1	— / —	2607.0 / 2632.9	1469.9 / 1493.8	1723.2 / 1747.1	1661.0 / ~~09:23~~ 10:34	
Flow (Start / Stop (SCCM))	523 / 561	533 / 530	— / —	529 / 507	534 / 521	532 / 505	533 / 501	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	05/04 13:00 SMA
Delivered Frozen? (Circle Y or N)	Y N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA

Week #: 14 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-54	HM-54	HM-54(FB/CO/FS)	CC-54	TY-54	SJ-54	FO-54	
Barcode	DPR00624	DPR00625	DPR00626	DPR00627	DPR00628	DPR00629	DPR00630	DPR00631
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	05/01 07:09	05/01 06:33	05/01 06:37	05/01 07:56	05/01 08:16	05/01 8:39	05/01 09:25	04/28 @ 10:45
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	05/02 06:45	05/02 06:16	05/02 06:21	05/02 07:34	05/02 07:56	05/02 8:19	05/02 09:03	
Removed (If Different From Stop)		~~05~~						
ETM (Start / Stop (Hours))	2220.9 / ~~2222.~~ 2244.5	1492.1 / 1515.8	1077.0 / 1100.7	2630.9 / 2654.5	1493.9 / 1517.4	1747.1 / 1770.8	1684.8 / 1708.5	
Flow (Start / Stop (SCCM))	534 / ~~526~~ 524	530 / 533	520 / 512	534 / 519	523 / 522	513 / 498	536 / 520	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	S (L) M H	S (L) M H	S L (M) H	S L (M) H	S (L) M H

Field Notes / Comments:
TRIP SPIKE INITIATED ON 05/01 @ 06:30 PST.

Delivered to Lab (Date / Time, Initials)	05/04 (3:00 SMA
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA

Week #: 14 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-55	HM-55	HM-55(FB/CO/FS)	CC-55	TY-55	SJ-55	FO-55	
Barcode	DPR00632	DPR00633	DPR00634	DPR00635	DPR00636	DPR00637	DPR00638	DPR00639
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	05/02 06:48	05/02 06:20	05/02 06:24	05/02 07:36	05/02 07:59	05/02 08:21	05/02 09:05	
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	05/03 06:40	05/03 06:16	05/03 06:20	05/03 07:30	05/03 07:49	05/03 08:11	05/03 09:00	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2249.5 / 2268.4	1515.8 / 1539.7	1100.7 / 1124.6	2654.5 / 2678.4	1517.4 / 1541.2	1770.8 / 1794.2	1708.5 / 1732.4	
Flow (Start / Stop (SCCM))	531 / 516	534 / 508	519 / 514	520 / 515	531 / 535	522 / 508	538 / 529	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	(S) L M H	S (L) M H	S (L) M H	(S) L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	05/04 13:00 SMA
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA

Week #: 14 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-56	HM-56	HM-56 (FB/CO/FS)	CC-56	TY-56	SJ-56	FO-56	
Barcode	DPR00640	DPR00641	DPR00642	DPR00643	DPR00644	DPR00645	DPR00646	DPR00647
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	05/03 06:43	05/03 06:20	05/03 06:21	05/03 07:31	05/03 07:51	05/03 08:13	05/03 09:02 SM	
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	05/04 05:47	05/04 05:24	05/04 06:22	05/04 06:43	05/04 07:06	05/04 07:29	05/04 08:17	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2268.4 / 2291.4	1537.7 / 1562.8	1124.6 / 1124.6	2678.4 / 2701.6	1541.2 / 1564.5	1794.7 / 1817.9	1732.4 / 1755.6	
Flow (Start / Stop (SCCM))	518 / 516	520 / 508	0 / 0	515 / 513	537 / 517	525 / 511	529 / 477	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S (L) M H	S (L) M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	S (L) M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	05/04 13:00 SM
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

te Operator: SMA

Week #: 15 Day: 1

te	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
ample Name (Site-#[-CO/FS/FB])*	HC-57	HM-57	HM-57(FB/CO/FS)	CC-57	TY-57	SJ-57	FO-57	
arcode	DPR00648	DPR00649	DPR00650	DPR00651	DPR00652	DPR00653	DPR00654	DPR00655
MS ID								Trip Spike Created (Date / Time)
ample Loaded (Date / Time)	05/04 05:50 ~~05:50~~	05/04 05:30		05/04 06:45	05/04 07:08	05/04 07:31	05/04 08:20	
ample Start (If Different From Load)	05/06 07:30	05/06 07:00		05/06 08:00	05/06 08:20	05/06 08:40	05/06 09:30	
ample Stop (Date / Time)	05/07 06:21 SM	05/07 06:00 SM		05/07 07:10	05/07 07:32	05/07 07:55	05/07 08:35	
emoved (If Different From Stop)		05/07 SM						
TM (Start / Stop (Hours))	2291.4 ~~1562.8~~ / 2314.4	1562.8 / 1585.8	/	2701.6 / 2724.7	1564.5 / 1587.7	1817.9 / 1841.2	1755.6 / 1778.7	
ow (Start / Stop (SCCM))	~~535~~ / 544	535 / 580	/	522 / 569	522 / 460	539 / 586	543 / 606	
Field Blank (FB), Collocated (CO), Field Spike (FS)	522							

Local Conditions							
ecipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M (H)	N L M (H)	N L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
ind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L (M) H	S L (M) H	S L M H	S L (M) H	S L (M) H	S L (M) H	S (L) M H
eld Notes / Comments:	HEAVY RAIN DURING UNLOADING SAMPLES 05/07						

livered to Lab (Date / Time, Initials)	05/07 12:00 SMA
livered Frozen? (Circle Y or N)	(Y / N)

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA / KY

Week #: 15 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-58	HM-58	HM-58(FB/CO/FS)	CC-58	TY-58	SJ-58	FO-58	
Barcode	DPR00656	DPR00657	DPR00658	DPR00659	DPR00660	DPR00661	DPR00662	DPR00663
LIMS ID								Trip Spike Created (Date / Time) 5/6/17 11:00
Sample Loaded (Date / Time)	05/07 06:23	05/07 06:01	05/07 05:45	05/07 07:13	05/07 07:35	05/07 07:58	05/07 08:39	
Sample Start (If Different From Load)	05/07 10:30	05/07 09:30	05/07 09:40	05/07 11:30	05/07 12:15	05/07 13:15	05/07 14:00	
Sample Stop (Date / Time)	5/8 9:32	5/8 8:33	5/8 8:43	5/8 10:37	5/8 11:15	5/8 12:15	5/8 13:11	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2314.4/2337.5	1585.8/1608.9	1124.6/1147.7	2724.7/2747.8	1587.7/1610.7	1841.2/1864.2	1778.7/1801.9	
Flow (Start / Stop (SCCM))	539/485	545/469	538/527	530/465	545/475	536/470 KY	530/515	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	5/10/17 16:00 KY
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 15 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-59	HM-59	HM-59(FB/CO/FS)	CC-59	TY-59	SJ-59	FO-59	
Barcode	DPR00664	DPR00665	DPR00666	DPR00667	DPR00668	DPR00669	DPR00670	DPR00671
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	5/8 9:38	5/8 8:40	5/8 8:51	5/8 10:40	5/8 11:18	5/8 12:16	5/8 13:13	—
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	5/9 8:38	5/9 7:40	5/9 7:51	5/9 9:40	5/9 10:18	5/9 11:16	5/9 12:13	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2337.5/2360.5	1608.9/1631.9	1147.7/1170.7	2747.8/2770.8 KY	1610.7/1633.7	1864.2/1887.2	1801.9/1824.9	
Flow (Start / Stop (SCCM))	526 / 500	549 / 487	524 / 518	531 / 507	527 / 543	524 / 463	535 / 521	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	(S) L M H	S (L) M H	S (L) M H	S (L) M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	5/10/17 16:00 KY
Delivered Frozen? (Circle Y or N)	(Y) / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY

Week #: 15 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-60	HM-60	HM-60(FB/CO/FS)	CC-60	TY-60	SJ-60	FO-60	
Barcode	DPR00672	DPR00673	DPR00674	DPR00675	DPR00676	DPR00677	DPR00678	DPR00679
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	5/9 8:41	5/9 7:43	5/9 7:52	5/9 9:42	5/9 10:19	5/9 11:17	5/9 12:14	—
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	5/10 7:41	5/10 6:43	5/10 6:52	5/10 8:42	5/10 9:19	5/10 10:17	5/10 11:14	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2360.5/2383.5	1631.9/1654.9	1170.7/1170.7	2770.8/2793.8	1633.7/1656.7	1887.2/1910.2	1824.9/1847.9	
Flow (Start / Stop (SCCM))	530 / 520	533 / 549	— / —	532 / 529	522 / 522	531 / 530	526 / 543	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	5/10/17 16:00 KY
Delivered Frozen? (Circle Y or N)	Y N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: KY / SMA

Week #: 16 Day: 1

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-61	HM-61	HM-61(FB/CO/FS)	CC-61	TY-61	SJ-61	FO-61	
Barcode	DPR00680	DPR00681	DPR00682	DPR00683	DPR00684	DPR00685	DPR00686	DPR00687
LIMS ID			—					Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	5/10 07:42 KY	5/10 06:45 KY	—	5/10 08:43 KY	5/10 09:20	5/10 10:20	5/10 11:15	5-12-17
Sample Start (If Different From Load)	5/14 06:50	5/14 06:30	—	5/14 07:30	5/14 07:45	5/14 08:15	5/14 09:00	
Sample Stop (Date / Time)			—					
Removed (If Different From Stop)	05/15 06:24	05/15 06:03	—	05/15 07:10	05/15 7:34	05/15 07:59	05/15 08:51	
ETM (Start / Stop (Hours))	2383.5/2407.1	1654.9/1678.4	— / —	2793.8/2816.3	1656.7/1680.5	1910.2/1934.0	1847.9/1871.7	
Flow (Start / Stop (SCCM))	525 / 533	527 / 478	— / —	533 / 524	534 / 440	531 / 502	525 / 543	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	N L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	S L M H	(S) L M H	S (L) M H	(S) L M H	S L (M) H

Field Notes / Comments:							
TRIP SPIKE INITIATED 5/15/17 @ 6:30 PST					FARMING EQUIPMENT NEXT TO THE SHELTER UPON ARRIVAL		

Delivered to Lab (Date / Time, Initials)	5/18 12:30 SMR
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA

Week #: 16 Day: 2

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-62	HM-62	HM-62(FB/CO/FS)	CC-62	TY-62	SJ-62	FO-62	
Barcode	DPR00688	DPR00689	DPR00690	DPR00691	DPR00692	DPR00693	DPR00694	DPR00695
LIMS ID	06:27							Trip Spike Created (Date / Time)
Sample Loaded (Date / Time) SMA	05/15 ~~06:09~~	05/15 06:07	05/15 06:09	05/15 07:12	05/15 07:37	05/15 08:02	05/15 08:54	
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	05/16 06:30	05/16 06:04	05/16 06:09	05/16 07:22	05/16 08:03	05/16 08:27	05/16 09:14	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours)) SMA	2407.1 ~~1702.7~~ / 2431.2	1677.4 / 1702.4	1170.7 / 1194.7	2816.3 / 2839.8	1680.5 / 1704.9	1934.0 / 1958.4	1871.7 / 1896.1	
Flow (Start / Stop (SCCM)) SMA	~~538~~ / 510	535 / 581	538 / 522	524 / 578	~~547~~ / 565	547 / 562	546 / 559	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

531

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	(S) L M H	S (L) M H

Field Notes / Comments:							
				POWER FAILURE UPON ARRIVAL,	FARMING EQUIPMENT PARKED NEXT TO THE SHELTER		

Delivered to Lab (Date / Time, Initials)	5/18 12:30 SMA
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA

Week #: 16 Day: 3

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-63	HM-63	HM-63(FB/CO/FS)	CC-63	TY-63	SJ-63	FO-63	
Barcode	DPR00696	DPR00697	DPR00698	DPR00699	DPR00700	DPR00701	DPR00702	DPR00703
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	05/16 06:34	05/16 06:08	05/16 06:12	05/16 07:34	05/16 08:05	05/16 08:29	05/16 09:17	
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	05/17 06:28	05/17 06:02	05/17 06:06	05/17 07:23	05/17 07:49	05/17 08:12	05/17 08:56	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2431.2/2455.1	1702.4/1726.3	1194.7/1218.5	2839.8/2863.6	1704.9/1728.6	1958.4/1982.1	1896.1/1919.7	
Flow (Start / Stop (SCCM))	522 / 501	545 / 563	533 / 522	521 / 509	522 / 530	547 / 521	533 / 558	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H	N L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H	S L M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	5/18 12:30 SMA
Delivered Frozen? (Circle Y or N)	Y / N

Received By Lab (Date / Time, Initials)	

California Air Resources Board / Department of Pesticide Regulation - Laboratory / Field Data Shee
MITC Intensive Seasonal Monitoring Study - Fresno County

Site Operator: SMA

Week #: 16 Day: 4

Site	Huron - Chestnut HS	Huron - Middle School	Huron - Middle School QC	Cantua Creek	Tranquility	San Joaquin	Fresno	Trip Spike
Sample Name (Site-#[-CO/FS/FB])*	HC-64	HM-64	HM-64(FB/CO/FS)	CC-64	TY-64	SJ-64	FO-64	
Barcode	DPR00704	DPR00705	DPR00706	DPR00707	DPR00708	DPR00709	DPR00710	DPR00711
LIMS ID								Trip Spike Created (Date / Time)
Sample Loaded (Date / Time)	5/17 06:32	5/17 06:05	5/17 06:07	5/17 07:26	5/17 07:51	5/17 08:17	5/17 08:58	
Sample Start (If Different From Load)								
Sample Stop (Date / Time)	5/18 05:34	5/18 05:13	5/17 06:08	5/18 06:26	5/18 ~~06:51~~ 06:51	5/18 07:17	5/18 08:03	
Removed (If Different From Stop)								
ETM (Start / Stop (Hours))	2455.1 / ~~2445~~ 2478.1	1726.3 / 1749.4	1218.5 / 1218.5	2863.0 / 2881.7	1728.6 / 1751.0	1982.1 / 2005.1	1919.7 / 1942.8	
Flow (Start / Stop (SCCM))	540 / 560	533 / 508	0 / 0	521 / 523	543 / 549	~~451~~ 521 / 490	539 / 513	

* - Field Blank (FB), Collocated (CO), Field Spike (FS)

Local Conditions							
Precipitation (Circle One): None (N), Light (L), Moderate (M), Heavy (H)	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H	(N) L M H
Wind (Circle One): Still (S) Light (L), Moderate (M), Heavy (H)	(S) L M H	(S) L M H	S (L) M H	(S) L M H	S (L) M H	S (L) M H	S (L) M H

Field Notes / Comments:							

Delivered to Lab (Date / Time, Initials)	5/18 12:30 SMA
Delivered Frozen? (Circle Y or N)	(Y) N

Received By Lab (Date / Time, Initials)	

ATTACHMENT F

Laboratory Standard Operating Procedure

California Environmental Protection Agency

Air Resources Board

Standard Operating Procedure

Title: Air Sampling and Analysis of Methyl Isothiocyanate (MITC)

SOP: NLB SOP SAS 15-01, Version 1

Section: Special Analysis Section

Branch: Northern Laboratory Branch

Division: Monitoring and Laboratory Division

Approval: This SOP has been reviewed and approved by:

Russell Grace, Manager
Special Analysis Section
Northern Laboratory Branch

7-10-15
Date

Michael Werst, Chief
Northern Laboratory Branch

7.15.15
Date

DISCLAIMER: Mention of any trade name or commercial product in this Standard Operating Procedure does not constitute endorsement or recommendation of this product by the Air Resources Board. Specific brand names and instrument descriptions listed in the Standard Operating Procedures are equipment used by the ARB laboratory. Any functionally equivalent instrumentation can be used. This method is restricted to use by or under direct supervision of analysts experienced in the use of air sampling methods and analysis by gas chromatography with mass selective detector (GC/MSD).

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Air Sampling and Analysis of Methyl Isothiocyanate (MITC)

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5. PERSONNEL QUALIFICATIONS 2
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11. DATA MANAGEMENT AND REPORTING 5
12. QUALITY ASSURANCE 5

1. SCOPE

The method uses sorbent tubes and a gas chromatograph/mass selective detector (GC/MSD) for the determination of methyl isothiocyanate (MITC), one of the breakdown products of metam sodium or metam potassium, for application air sample analysis. The Department of Pesticide Regulation (DPR) requested that the Air Resources Board (ARB) conduct application air monitoring of MITC at a target estimated quantitation limit (EQL) of 0.5 micrograms per cubic meter ($\mu g/m^3$).

2. SUMMARY OF METHOD

Coconut based charcoal sorbent tubes are placed on the sampler with the flowrate set at 0.5 liters per minute (LPM) for 24 hours. The samples are stored in an ice chest or refrigerator until extracted with 5 milliliters (ml) of 0.1 percent carbon disulfide (CS_2) in ethyl acetate (EA). The injection volume is 1 microliter (μL). A GC/MSD in the selective ion monitoring (SIM) mode is used for analysis.

3. DEFINITIONS OF TERMS/ACRONYMS

BATCH – an analytical batch is a set of prepared samples (i.e. extracts) analyzed together as a group in an uninterrupted sequence. A preparation (extraction) batch is a set of samples which is processed all in one group using the same equipment, reagents, and staff within a single work shift.

BLANK – a sample that has not been exposed to the sample stream in order to monitor contamination during sampling, transport, storage, extraction, or analysis. The blank is subjected to the usual analytical and measurement process to establish a zero baseline or background value.

CALIBRATION – evaluating and adjusting the precision and accuracy of measurement equipment using known values (standards).

COLLOCATED SAMPLE – a sample used to assess total precision (sampling and analysis) which is located within a specified radius of the primary sampler. The collocated sampler must be identical in configuration and operation to the primary sampler. The collocated sample is processed identically to the primary sample.

CONTINUING CALIBRATION VERIFICATION SAMPLE (CCV) – a sample containing analyte at a known concentration obtained from a source other than that of the calibration standards.

DUPLICATE – two aliquots taken from and representative of the same sample or product and carried through all steps of the sampling and analytical procedures in an identical manner. Duplicate samples are used to assess variance of the total method including sampling and analysis.

ESTIMATED QUANTITATION LIMIT (EQL) – defined as five times the method detection limit (MDL) and used as the lower limit for reporting data.

INTERFERENCE – discrete artifacts or elevated baselines from solvents, reagents, glassware, and other sample processing hardware that may cause misinterpretation of the chromatographic data.

METHOD DETECTION LIMIT (MDL) – the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and statistically different from a blank. It is determined from replicate analyses of a sample in a given matrix containing the analyte.

REPLICATE – a separate analysis of the same sample. The sample extract used for replicate analyses must be chosen at random. Replicate analytical results are used to evaluate analytical precision but not the precision of sampling, preservation, or storage internal to the laboratory.

4. INTERFERENCES/LIMITATIONS

Interferences may be caused by contaminants in solvents, reagents, glassware, and other processing apparatus that can lead to discrete artifacts or elevated baselines. Method blanks, both solvent and sorbent, must be run concurrently with each batch of samples to detect any possible interferences.

5. PERSONNEL QUALIFICATIONS

All analysts performing analyses pursuant to this SOP will be experienced and adequately trained in the use of air sampling methods and analysis by GC/MSD, handling all pertinent solvents and sampling media, and have an understanding of the chemistry involved in the chemical analyses of the target analytes. All analysts will also be trained in proper safety procedures adopted by the laboratory.

6. HEALTH, SAFETY, AND CAUTIONS

This procedure does not address all of the safety concerns associated with chemical analysis. It is the responsibility of the analyst to establish appropriate safety and health practices. For hazard information and guidance, refer to the safety data sheets (SDS) of any chemicals used in this procedure.

7. EQUIPMENT AND CONDITIONS

A. INSTRUMENTATION:

Hewlett-Packard 6890 Series gas chromatograph;

Hewlett-Packard 5973 Network mass selective detector;
Hewlett-Packard 7683 Autosampler/injecton;

MS Transfer line: 280 degrees Celsius (°C);
Injector: 210°C, Splitless, Liner 4 millimeter (mm) single tapered liner;
Column: Restek Rtx-200, 60 meter, 320 micron (μm) inner diameter (i.d.), 0.5 μm film thickness;

GC Temperature Program: Oven initial 40°C, hold 1 minute (min) Ramp to 61°C at (@) 2°C/min, hold 0.2 min, ramp to 240°C @ 25°C/min, hold 0.5 min. Retention time: MITC=11.12 min;

Splitter opens @ 1.0 min;

Flows: Column: Helium (He), 1.6 ml/min, 9.1 pounds per square inch (psi)
Velocity: 32 centimeters per second (cm/sec);
Splitter: 50 ml/min;

Mass Spectrometer: Electron Ionization;
Selective Ion Monitoring: Methyl Isothiocyanate: 73 (quantitative ion 100 percent), 72 (qualitative ion 46 percent), Tuning: PFTBA on masses 69, 219, and 502.

B. Auxiliary Apparatus

i. Precleaned vials, 8 ml capacity with Teflon caps;
ii. Syringe, 5 ml;
iii. Whatman filters, 0.45 μm;
iv. Disposable syringes, 3 ml;
v. Sonicator;
vi. GC vials with septum caps.

C. Reagents

i. Ethyl Acetate (EA), Pesticide grade or better;
ii. Carbon Disulfide (CS_2), 99.9+ percent, less than 100 parts per billion (ppb) benzene, Omnisolve number (#) CX0396-6;
iii. Methyl Isothiocyanate, Chem Service MET-12392A-1G, 99.5 percent;
iv. Coconut charcoal sorbent tubes, SKC, Fullerton, California #226-16;
v. Compressed Helium Grade 5.

8. SAMPLE COLLECTION

A. Samples are collected in the field at a flow rate of 0.5 lpm.

B. After collection, the samples are placed in a glass tube and stored in

a cooler at four °C or less until returned to the laboratory.

C. Samples are stored in the laboratory at 4° C or less until ready for extraction. MITC is stable for at least 28 days while still in the coconut charcoal absorbent. Once the samples are extracted, analysis takes place immediately.

9. EXTRACTION OF SAMPLE

A. Prepare a method blank and two laboratory control sample (LCS) tubes with every batch of field samples, which is not to exceed 20 samples in an analytical batch. The LCS is spiked with 25 μg of MITC before extraction.

B. Carefully score and break the sample coconut charcoal tube just in front of the glass wool plug on the primary section.

C. Remove the glass wool plug using forceps. Pour the coconut charcoal sorbent from the primary section into an 8 ml glass vial.

D. Score the tube in front of the secondary section glass wool. Retain the secondary section for later analysis to check for breakthrough.

E. Using 5 ml of 0.1 percent CS_2 in EA carefully rinse the inside of the primary section into the glass vial containing the sorbent. Cap securely.

F. The extracts are placed in a sonicator for one hour.

G. Filter the samples using a 3 ml disposable syringe and 0.45 μm filter directly.

10. ANALYSIS OF SAMPLES

A. A weekly autotune shall be performed using PFTBA. The instrument is tuned using masses: 69, 219, and 502.

B. A solvent blank is analyzed with each batch of samples. The blank must be free of interferences. A solvent blank must be analyzed after any sample which may result in possible carryover contamination.

C. A seven point calibration curve shall be analyzed with each batch of samples. For MITC the calibration is at 0.05, 0.10, 0.50, 1.00, 3.00, 5.00, and 10.00 μg/ml.

D. With each batch of samples analyzed, a laboratory sorbent blank and 2 laboratory sorbent control spikes will be run concurrently. A laboratory blank is an unexposed charcoal tube prepared and analyzed the same way the samples are analyzed. A laboratory control spike (LCS) is a charcoal tube spiked with a

known amount of standard. The LCS is prepared and analyzed the same way as the samples. The laboratory blank analyte concentration must be below the MDL. If the laboratory blank is not below the MDL, then a new laboratory blank must be prepared and reanalyzed. LCS should have average recoveries that are within 65 to 135 percent of the theoretical spiked value.

E. A calibration check for MITC of 7.0 μg/ml is run after the calibration, after every 10 samples, and at the end of each sample batch. The value of the check must be within plus or minus (±) 3 standard deviations (σ) or ±25 percent of the expected value, whichever is greater. If the calibration check is outside the limit, then those samples in the batch after the last calibration check that was within the limit need to be reanalyzed.

F. The atmospheric concentration is calculated according to:

$$\text{Concentration } (\mu g/m^3) = \frac{\text{Extract Concentration } (\mu g/ml) \times 5 \text{ ml}}{\text{Air Volume Sampled } (m^3)}$$

11. DATA MANAGEMENT AND REPORTING

Data generated from the analysis of samples, solvents, standards, and blanks will be entered into a spreadsheet, where calculations are performed. All data will be reviewed by the analyst prior to the generation of a summary report. The summary report will be reviewed and approved by the laboratory supervisor.

12. QUALITY ASSURANCE

A. A solvent blank must be analyzed with each batch of samples. The solvent blank is an aliquot of the solvent used to extract the samples. The analyte concentration must be below the method detection limit (MDL) established for the method. A solvent blank is analyzed at the beginning of the analytical batch and after the calibration curve or continuing calibration verification (CCV) just prior to sample analysis.
B. A minimum seven point calibration curve is established at the beginning of each project, immediately after major instrument maintenance or repair, and whenever the CCV exceeds the acceptance criteria.
C. A CCV is analyzed at the start of each analytical batch and after every tenth sample to verify the system linearity. The CCV quantitated value must be within ±25 percent (75 to 125 percent) of the actual value.
D. A method blank will be analyzed with each batch of samples. The method blank is a blank coconut charcoal sorbent tube that is analyzed through the entire method. The analyte concentration must be below the MDL established for the method.
E. Two LCSs are analyzed with every batch of samples. The LCS stock standard should come from a different source or lot than the standard used to make the

calibration curve. If a differing lot number is not available, the LCS should be made up independently from the calibration curve standard. The analytical value of the average LCS must be within ±3 σ of its historical mean or within 35 percent (65 to 135 percent) of the expected value, whichever is greater. If the average LCS is outside these limits then the samples in the analytical batch must be reanalyzed.

Attachment G

Laboratory Results Report

California Environmental Protection Agency

Air Resources Board

Methyl Isothiocyanate (MITC) Analytical Results for Air Monitoring Samples Collected in Fresno County in February through May 2017

DATE: October 27, 2017

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This report has been reviewed by staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names of commercial products constitute endorsement or recommendation for use.

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1.0 INTRODUCTION

The Department of Pesticide Regulation (DPR) requested that the Air Resources Board (ARB) conduct air monitoring analysis for Methyl Isothiocyanate (MITC) during the high use period. This report covers the analytical and quality assurance results for MITC during a study in Fresno County in 2017.

2.0 METHOD

2.1 Overview

Air samples were collected using coconut charcoal sorbent tubes. After sampling, the sorbent tubes were stored at or below 4 degrees Celsius (°C) until extraction. Each sorbent tube was extracted with five milliliters (mL) of a 0.1 percent solution of carbon disulfide (CS_2) in ethyl acetate (EA) and desorbed in an ultrasonic bath for 60 minutes. Sample extracts were filtered then analyzed using a gas chromatograph with a mass spectrometer detector (GC/MS). Sample analysis and quantitation used an external calibration method.

2.2 Method Detection Limit (MDL) and Estimated Quantitation Limit (EQL)

The determination of the MDL for this method followed the United States Environmental Protection Agency (U.S. EPA) procedures found in 40CFR Part 136 Appendix B. The MDL was determined by analyzing seven (7) replicates of low level (0.05 µg/mL) matrix spikes for MITC. Using five times the MDL value, the EQL for MITC was determined to be 0.20 µg/sample.

An example calculation for the MDL and EQL are shown below in Table 1.

TABLE 1: Example Calculations for MDL and EQL

For MITC: s = 0.00255µg/mL

*MDL = 3.143 x **s** = 3.143 x 0.00255 µg/mL = 0.008 µg/mL*
*MDL for total µg/sample = 5 mL/sample x 0.008 µg/mL = 0.040 µg/sample**
EQL = 5 x MDL = (5 x 0.008 µg/mL) = 0.040 µg/mL
*EQL for total µg/sample = 5 mL/sample x 0.040 µg/mL = 0.20 µg/sample**

***s** = the standard deviation of the concentration calculated for the seven replicate spikes*
** 5 mL extraction volume*

3.0 MITC RESULTS SUMMARY

Samples were collected between February 13, 2017 and May 23, 2017. The laboratory received a total of 378 application samples plus sixteen field spikes, fourteen field blanks, and sixteen trip spikes. Analyses of all air samples and the corresponding quality control (QC) samples were performed within analytical hold times.

The calibration range was from 0.05 µg/mL to 10 µg/mL for MITC. A seven point calibration curve was analyzed daily prior to sample analysis. All calibrations met or exceed an r^2 value of 0.995.

Results are reported as a concentration, as “ND” (no peak detected above the MDL), or as “trace” (a peak was detected above the MDL but below the EQL).

4.0 ANALYTICAL QUALITY CONTROL RESULTS

4.1 System Blanks

A system blank was analyzed with each analytical batch, at the beginning of the analytical sequence, after every tenth sample, and prior to control or check standards. System blanks were analyzed to ensure the solvent and instrument did not contribute interferences to the analysis and to minimize possible carryover from high level samples. MITC was not detected above the EQL in any system blanks.

4.2 Method Blanks

The method blank is a coconut charcoal sorbent tube prepared and analyzed as described for the application samples with each analytical batch to ensure contamination was not introduced during extraction procedures. Forty method blanks were analyzed. MITC was not detected above the EQL in any method blanks.

4.3 Laboratory Control Spike (LCS)

An LCS is a coconut charcoal sorbent tube spiked with 25 µg of MITC, extracted and analyzed as described for the application samples, for an expected result of 5.0µg/mL. LCS recoveries indicate extraction efficiency. Two LCS standards were analyzed with each analytical batch. The LCS recovery criteria limits are 65 to 135 percent of the expected value.

All LCS results were within the acceptance range with the exception of one LCS recovery at 58.2 percent of the expected value, analyzed on March 15, 2017. The low LCS result

was confirmed by re-analysis on March 21, 2017. Since all other QC, including the other LCS analyzed with the batch on March 15, met criteria, the single low LCS result is attributed to preparation error.

4.4 Continuing Calibration Verification Standards (CCV)

A CCV is a calibration standard which is analyzed after every calibration curve, after every tenth sample, and at the end of each analytical batch to verify stability of the analytical instrument. The CCV acceptance criteria is plus or minus 25 percent of the expected value. All CCV standards met acceptance criteria.

4.5 Laboratory Replicates

For every ten samples in each analytical batch, one replicate sample was analyzed. The precision was calculated as the percent difference of the sample results. All replicate results were within the +/-25 percent criteria.

5.0 FIELD SPIKES, TRIP SPIKES, AND FIELD BLANK RESULTS

5.1 Field Spikes

Sixteen coconut charcoal sorbent tubes were spiked with 5 µg/mL MITC standard to assess matrix effects. One of these spiked tubes was used for sample collection during each sampling week. The percent spike recoveries are calculated as follows:

$$\frac{Spiked\ Sample\ Result - Unspiked\ Sample\ Result}{Spiked\ amount} x100\%$$

Recovery results varied from 2.146 µg/mL to 4.68 µg/mL. Results for the associated unspiked primary samples varied from ND (not detected) to 0.18 µg/mL. The percent recovery for MITC in the field spike samples ranged from 47.2 percent to 93.6 percent. Lower recoveries (<70%) may be attributed to matrix effects or high ambient temperatures during sampling.

5.2 Trip Spikes

Sixteen trip spikes were prepared by spiking coconut charcoal sorbent tubes with 5 µg/mL MITC standard. Trip spikes are used to assess contamination that may be introduced during shipping and handling procedures. The percent spike recovery was calculated as follows:

$$\frac{Spiked\ Sample\ Result}{Spiked\ amount} x100\%$$

Trip spike recoveries ranged from 55.2 percent to 102.6 percent.

5.3 Field Blanks

A field blank is a coconut charcoal sorbent tube that is taken through the sample collection process in the field and connected to an air sampler; however, no actual sample is drawn through the tube. The field blank is treated as a sample by the laboratory. The field blank is used to ensure no contamination of media has occurred through the sample handling and collection process.

No MITC was detected above the EQL in the field blanks.

6.0 DISCUSSION

The overall results for MITC ranged from less than the EQL to 1.75 µg/sample. Sample results are summarized in Table 2. Results above the MDL but below the EQL are reported as “trace”. Results below the MDL are reported as ND (not detected).

Table 3 summarizes the results for the spiked QC samples that were analyzed in this study (field spikes, trip spikes, and laboratory control spikes).

Sixteen collocated samples were analyzed for this study. The RPD between primary and collocated samples ranged from 0.0 percent to 18.2 percent. Results for collocated samples are summarized in Table 4.

63 sample replicates were analyzed for this study. The RPD between primary and replicate samples ranged from 0.0 percent to 6.1 percent. Results for replicate samples are summarized in Table 5.

An MDL study was performed on January 9, 2017. Results of this study are summarized in Table 6.

A breakthrough study was performed in January and February 2017. Results of this study are summarized in Table 7. One breakthrough sample was analyzed on February 21, 2017 to check for breakthrough on a field spike that was sampled at a collection flow rate of 0.75 liters per minute (LPM). A small amount of breakthrough did occur at this flow rate. Both results have been reported.

Table 2: Air Monitoring Results, Fresno County 2017

Cantua Creek

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00217	CC-1	1/30/2017 12:45	0.27	1.35	2/7/2017
DPR00224	CC-2	1/31/2017 13:33	0.07	0.35	2/8/2017
DPR00231	CC-3	2/1/2017 12:59	0.05	0.25	2/9/2017
DPR00238	CC-4	2/2/2017 12:20	trace	trace	2/10/2017
DPR00245	CC-5	2/6/2017 11:45	ND	ND	2/13/2017
DPR00252	CC-6	2/7/2017 14:06	ND	ND	2/14/2017
DPR00259	CC-7	2/8/2017 13:31	0.14	0.70	2/15/2017
DPR00266	CC-8	2/9/2017 12:32	trace	trace	2/17/2017
DPR00273	CC-9	2/13/2017 12:00	trace	trace	2/22/2017
DPR00280	CC-10	2/14/2017 13:29	0.12	0.60	2/21/2017
DPR00287	CC-11	2/15/2017 12:38	0.22	1.10	2/23/2017
DPR00301	CC-13	2/20/2017 11:45	0.05	0.25	2/28/2017
DPR00308	CC-14	2/21/2017 12:55	ND	ND	3/1/2017
DPR00315	CC-15	2/22/2017 11:59	ND	ND	3/2/2017
DPR00322	CC-16	2/23/2017 11:03	ND	ND	3/3/2017
DPR00329	CC-17	2/27/2017 13:00	ND	ND	3/6/2017
DPR00336	CC-18	2/28/2017 12:38	trace	trace	3/7/2017
DPR00343	CC-19	3/1/2017 12:14	ND	ND	3/7/2017
DPR00350	CC-20	3/2/2017 11:19	ND	ND	3/8/2017
DPR00357	CC-21	3/6/2017 10:20	ND	ND	3/14/2017
DPR00364	CC-22	3/7/2017 10:22	ND	ND	3/14/2017
DPR00371	CC-23	3/8/2017 9:50	trace	trace	3/15/2017
DPR00378	CC-24	3/9/2017 9:31	ND	ND	3/15/2017
DPR00385	CC-25	3/13/2017 13:00	trace	trace	3/21/2017
DPR00392	CC-26	3/14/2017 12:02	0.06	0.30	3/21/2017
DPR00399	CC-27	3/15/2017 11:14	0.09	0.45	3/22/2017
DPR00406	CC-28	3/16/2017 10:23	ND	ND	3/22/2017
DPR00413	CC-29	3/20/2017 10:20	trace	trace	3/28/2017
DPR00420	CC-30	3/21/2017 9:22	ND	ND	3/28/2017
DPR00427	CC-31	3/22/2017 9:15	ND	ND	3/29/2017
DPR00434	CC-32	3/23/2017 8:58	trace	trace	3/29/2017
DPR00441	CC-33	3/26/2017 12:15	ND	ND	4/4/2017
DPR00448	CC-34	3/27/2017 11:52	ND	ND	4/4/2017
DPR00455	CC-35	3/28/2017 11:14	trace	trace	4/5/2017
DPR00462	CC-36	3/29/2017 10:44	ND	ND	4/5/2017
DPR00469	CC-37	4/2/2017 10:20	trace	trace	4/10/2017

Table 2: Air Monitoring Results, continued

Cantua Creek

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00476	CC-38	4/3/2017 9:21	trace	trace	4/10/2017
DPR00483	CC-39	4/4/2017 8:31	ND	ND	4/11/2017
DPR00490	CC-40	4/5/2017 8:19	trace	trace	4/11/2017
DPR00523	CC-41	4/9/2017 11:15	ND	ND	4/17/2017
DPR00531	CC-42	4/10/2017 10:45	ND	ND	4/17/2017
DPR00539	CC-43	4/11/2017 9:46	trace	trace	4/18/2017
DPR00547	CC-44	4/12/2017 9:00	ND	ND	4/18/2017
DPR00555	CC-45	4/16/2017 8:00	trace	trace	4/24/2017
DPR00563	CC-46	4/17/2017 7:28	ND	ND	4/24/2017
DPR00571	CC-47	4/18/2017 7:28	ND	ND	4/25/2017
DPR00579	CC-48	4/19/2017 7:39	ND	ND	4/25/2017
DPR00587	CC-49	4/22/2017 11:30	ND	ND	5/1/2017
DPR00595	CC-50	4/23/2017 10:33	ND	ND	5/1/2017
DPR00603	CC-51	4/24/2017 10:48	trace	trace	5/2/2017
DPR00611	CC-52	4/25/2017 9:55	ND	ND	5/2/2017
DPR00619	CC-53	4/30/2017 8:00	ND	ND	5/8/2017
DPR00627	CC-54	5/1/2017 7:56	ND	ND	5/8/2017
DPR00635	CC-55	5/2/2017 7:36	ND	ND	5/12/2017
DPR00643	CC-56	5/3/2017 7:31	ND	ND	5/12/2017
DPR00651	CC-57	5/6/2017 8:00	ND	ND	5/15/2017
DPR00659	CC-58	5/7/2017 11:30	ND	ND	5/15/2017
DPR00667	CC-59	5/8/2017 10:40	ND	ND	5/16/2017
DPR00675	CC-60	5/9/2017 9:42	ND	ND	5/16/2017
DPR00683	CC-61	5/14/2017 7:30	ND	ND	5/22/2017
DPR00691	CC-62	5/15/2017 7:12	ND	ND	5/22/2017
DPR00699	CC-63	5/16/2017 7:34	ND	ND	5/23/2017
DPR00707	CC-64	5/17/2017 7:26	ND	ND	5/23/2017

trace: detections below the EQL but above the MDL
ND: not detected above the MDL

Table 2: Air Monitoring Results, continued

Fresno

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00220	FO-1	1/30/2017 16:16	ND	ND	2/10/2017
DPR00227	FO-2	1/31/2017 16:21	ND	ND	2/8/2017
DPR00234	FO-3	2/1/2017 16:52	trace	trace	2/9/2017
DPR00241	FO-4	2/2/2017 15:52	trace	trace	2/10/2017
DPR00248	FO-5	2/6/2017 14:30	ND	ND	2/13/2017
DPR00255	FO-6	2/7/2017 15:56	ND	ND	2/14/2017
DPR00262	FO-7	2/8/2017 15:35	ND	ND	2/15/2017
DPR00269	FO-8	2/9/2017 14:37	ND	ND	2/17/2017
DPR00276	FO-9	2/13/2017 14:10	ND	ND	2/22/2017
DPR00283	FO-10	2/14/2017 16:16	ND	ND	2/21/2017
DPR00290	FO-11	2/15/2017 15:18	trace	trace	2/23/2017
DPR00304	FO-13	2/20/2017 14:00	ND	ND	2/28/2017
DPR00311	FO-14	2/21/2017 14:48	ND	ND	3/1/2017
DPR00318	FO-15	2/22/2017 13:51	ND	ND	3/2/2017
DPR00325	FO-16	2/23/2017 12:53	ND	ND	3/3/2017
DPR00332	FO-17	2/27/2017 15:45	ND	ND	3/6/2017
DPR00339	FO-18	2/28/2017 15:25	trace	trace	3/7/2017
DPR00346	FO-19	3/1/2017 14:32	ND	ND	3/7/2017
DPR00353	FO-20	3/2/2017 13:38	ND	ND	3/8/2017
DPR00360	FO-21	3/6/2017 12:00	ND	ND	3/14/2017
DPR00367	FO-22	3/7/2017 11:55	ND	ND	3/14/2017
DPR00374	FO-23	3/8/2017 11:34	ND	ND	3/15/2017
DPR00381	FO-24	3/9/2017 11:11	ND	ND	3/15/2017
DPR00388	FO-25	3/13/2017 15:45	ND	ND	3/21/2017
DPR00395	FO-26	3/14/2017 14:48	ND	ND	3/21/2017
DPR00402	FO-27	3/15/2017 13:50	ND	ND	3/22/2017
DPR00409	FO-28	3/16/2017 12:57	ND	ND	3/22/2017
DPR00416	FO-29	3/20/2017 12:00	trace	trace	3/28/2017
DPR00423	FO-30	3/21/2017 11:01	ND	ND	3/28/2017
DPR00430	FO-31	3/22/2017 10:52	ND	ND	3/29/2017
DPR00437	FO-32	3/23/2017 10:29	ND	ND	3/29/2017
DPR00444	FO-33	3/26/2017 14:45	ND	ND	4/4/2017
DPR00451	FO-34	3/27/2017 14:18	ND	ND	4/4/2017
DPR00458	FO-35	3/28/2017 13:33	ND	ND	4/5/2017
DPR00465	FO-36	3/29/2017 12:56	ND	ND	4/5/2017
DPR00472	FO-37	4/2/2017 12:00	ND	ND	4/10/2017
DPR00479	FO-38	4/3/2017 11:01	ND	ND	4/10/2017

Table 2: Air Monitoring Results, continued

Fresno

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00486	FO-39	4/4/2017 10:03	ND	ND	4/11/2017
DPR00493	FO-40	4/5/2017 9:45	trace	trace	4/11/2017
DPR00526	FO-41	4/9/2017 13:45	ND	ND	4/17/2017
DPR00534	FO-42	4/10/2017 12:52	ND	ND	4/17/2017
DPR00542	FO-43	4/11/2017 11:54	ND	ND	4/18/2017
DPR00550	FO-44	4/12/2017 11:00	ND	ND	4/18/2017
DPR00558	FO-45	4/16/2017 9:40	ND	ND	4/24/2017
DPR00566	FO-46	4/17/2017 9:09	ND	ND	4/24/2017
DPR00574	FO-47	4/18/2017 9:23	ND	ND	4/25/2017
DPR00582	FO-48	4/19/2017 9:10	ND	ND	4/25/2017
DPR00590	FO-49	4/22/2017 14:00	ND	ND	5/1/2017
DPR00598	FO-50	4/23/2017 13:02	ND	ND	5/1/2017
DPR00606	FO-51	4/24/2017 13:02	ND	ND	5/2/2017
DPR00614	FO-52	4/25/2017 12:02	ND	ND	5/2/2017
DPR00622	FO-53	4/30/2017 9:30	ND	ND	5/8/2017
DPR00630	FO-54	5/1/2017 9:25	ND	ND	5/8/2017
DPR00638	FO-55	5/2/2017 9:05	ND	ND	5/12/2017
DPR00646	FO-56	5/3/2017 9:02	ND	ND	5/12/2017
DPR00654	FO-57	5/6/2017 9:30	ND	ND	5/15/2017
DPR00662	FO-58	5/7/2017 14:00	ND	ND	5/15/2017
DPR00670	FO-59	5/8/2017 13:13	ND	ND	5/16/2017
DPR00678	FO-60	5/9/2017 12:14	ND	ND	5/16/2017
DPR00686	FO-61	5/14/2017 9:00	ND	ND	5/22/2017
DPR00694	FO-62	5/15/2017 8:54	ND	ND	5/22/2017
DPR00702	FO-63	5/16/2017 9:17	ND	ND	5/23/2017
DPR00710	FO-64	5/17/2017 8:58	ND	ND	5/23/2017

trace: detections below the EQL but above the MDL
ND: not detected above the MDL

Table 2: Air Monitoring Results, continued

Huron – Chestnut High School

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00214	HC-1	1/30/2017 11:38	ND	ND	2/7/2017
DPR00221	HC-2	1/31/2017 12:18	trace	trace	2/8/2017
DPR00228	HC-3	2/1/2017 11:55	trace	trace	2/9/2017
DPR00235	HC-4	2/2/2017 11:19	trace	trace	2/10/2017
DPR00242	HC-5	2/6/2017 10:40	ND	ND	2/13/2017
DPR00249	HC-6	2/7/2017 13:09	ND	ND	2/14/2017
DPR00256	HC-7	2/8/2017 12:26	ND	ND	2/15/2017
DPR00263	HC-8	2/9/2017 11:33	trace	trace	2/17/2017
DPR00270	HC-9	2/13/2017 11:00	trace	trace	2/22/2017
DPR00277	HC-10	2/14/2017 11:57	0.08	0.40	2/21/2017
DPR00284	HC-11	2/15/2017 11:04	0.14	0.70	2/23/2017
DPR00298	HC-13	2/20/2017 11:00	trace	trace	2/28/2017
DPR00305	HC-14	2/21/2017 11:48	ND	ND	3/1/2017
DPR00312	HC-15	2/22/2017 10:54	trace	trace	3/2/2017
DPR00319	HC-16	2/23/2017 9:58	trace	trace	3/3/2017
DPR00326	HC-17	2/27/2017 11:30	trace	trace	3/6/2017
DPR00333	HC-18	2/28/2017 11:55	trace	trace	3/7/2017
DPR00340	HC-19	3/1/2017 11:00	trace	trace	3/7/2017
DPR00347	HC-20	3/2/2017 10:04	trace	trace	3/8/2017
DPR00354	HC-21	3/6/2017 9:25	trace	trace	3/14/2017
DPR00361	HC-22	3/7/2017 9:34	trace	trace	3/14/2017
DPR00368	HC-23	3/8/2017 8:58	trace	trace	3/15/2017
DPR00375	HC-24	3/9/2017 8:37	trace	trace	3/15/2017
DPR00382	HC-25	3/13/2017 11:30	0.09	0.45	3/21/2017
DPR00389	HC-26	3/14/2017 10:42	0.13	0.65	3/21/2017
DPR00396	HC-27	3/15/2017 9:47	trace	trace	3/22/2017
DPR00403	HC-28	3/16/2017 9:17	trace	trace	3/22/2017
DPR00410	HC-29	3/17/2017 9:25	ND	ND	3/28/2017
DPR00417	HC-30	3/21/2017 8:27	0.10	0.50	3/28/2017
DPR00424	HC-31	3/22/2017 8:23	trace	trace	3/29/2017
DPR00431	HC-32	3/23/2017 8:09	0.22	1.10	3/29/2017
DPR00438	HC-33	3/26/2017 11:15	ND	ND	4/4/2017
DPR00445	HC-34	3/27/2017 10:46	ND	ND	4/4/2017
DPR00452	HC-35	3/28/2017 10:00	ND	ND	4/5/2017
DPR00459	HC-36	3/29/2017 9:32	trace	trace	4/5/2017
DPR00466	HC-37	4/2/2017 9:25	trace	trace	4/10/2017
DPR00473	HC-38	4/3/2017 8:26	ND	ND	4/10/2017

Table 2: Air Monitoring Results, continued

Huron – Chestnut High School

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00480	HC-39	4/4/2017 7:40	trace	trace	4/11/2017
DPR00487	HC-40	4/5/2017 7:34	0.21	1.05	4/11/2017
DPR00520	HC-41	4/9/2017 10:15	ND	ND	4/17/2017
DPR00528	HC-42	4/10/2017 9:38	ND	ND	4/17/2017
DPR00536	HC-43	4/11/2017 8:42	ND	ND	4/18/2017
DPR00544	HC-44	4/12/2017 8:04	ND	ND	4/18/2017
DPR00552	HC-45	4/16/2017 7:20	ND	ND	4/24/2017
DPR00560	HC-46	4/17/2017 6:42	ND	ND	4/24/2017
DPR00568	HC-47	4/18/2017 6:46	ND	ND	4/25/2017
DPR00576	HC-48	4/19/2017 6:52	ND	ND	4/25/2017
DPR00584	HC-49	4/22/2017 10:30	trace	trace	5/1/2017
DPR00592	HC-50	4/23/2017 9:47	ND	ND	5/1/2017
DPR00600	HC-51	4/24/2017 9:43	trace	trace	5/2/2017
DPR00608	HC-52	4/25/2017 8:54	ND	ND	5/2/2017
DPR00616	HC-53	4/30/2017 7:20	ND	ND	5/8/2017
DPR00624	HC-54	5/1/2017 7:09	ND	ND	5/8/2017
DPR00632	HC-55	5/2/2017 6:48	ND	ND	5/12/2017
DPR00640	HC-56	5/3/2017 6:43	ND	ND	5/12/2017
DPR00648	HC-57	5/6/2017 7:20	ND	ND	5/15/2017
DPR00656	HC-58	5/7/2017 10:30	ND	ND	5/15/2017
DPR00664	HC-59	5/8/2017 9:38	ND	ND	5/16/2017
DPR00672	HC-60	5/9/2017 8:41	ND	ND	5/16/2017
DPR00680	HC-61	5/14/2017 6:50	ND	ND	5/22/2017
DPR00688	HC-62	5/15/2017 6:27	ND	ND	5/22/2017
DPR00696	HC-63	5/16/2017 6:34	ND	ND	5/23/2017
DPR00704	HC-64	5/17/2017 6:32	ND	ND	5/23/2017

trace: detections below the EQL but above the MDL
ND: not detected above the MDL

Table 2: Air Monitoring Results, continued

Huron Middle School

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00215	HM-1	1/30/2017 11:07	ND	ND	2/7/2017
DPR00222	HM-2	1/31/2017 11:37	trace	trace	2/8/2017
DPR00229	HM-3	2/1/2017 11:19	trace	trace	2/9/2017
DPR00236	HM-4	2/2/2017 10:49	trace	trace	2/10/2017
DPR00243	HM-5	2/6/2017 10:00	ND	ND	2/13/2017
DPR00250	HM-6	2/7/2017 12:49	ND	ND	2/14/2017
DPR00257	HM-7	2/8/2017 11:59	ND	ND	2/15/2017
DPR00264	HM-8	2/9/2017 11:00	trace	trace	2/17/2017
DPR00271	HM-9	2/13/2017 10:30	trace	trace	2/22/2017
DPR00278	HM-10	2/14/2017 10:55	0.10	0.50	2/21/2017
DPR00285	HM-11	2/15/2017 10:06	0.22	1.10	2/23/2017
DPR00299	HM-13	2/20/2017 10:30	trace	trace	2/28/2017
DPR00306	HM-14	2/21/2017 11:25	ND	ND	3/1/2017
DPR00313	HM-15	2/22/2017 10:27	ND	ND	3/2/2017
DPR00320	HM-16	2/23/2017 9:29	trace	trace	3/3/2017
DPR00327	HM-17	2/27/2017 10:30	ND	ND	3/6/2017
DPR00334	HM-18	2/28/2017 10:26	trace	trace	3/7/2017
DPR00341	HM-19	3/1/2017 9:34	trace	trace	3/7/2017
DPR00348	HM-20	3/2/2017 9:04	trace	trace	3/8/2017
DPR00355	HM-21	3/6/2017 9:00	trace	trace	3/14/2017
DPR00362	HM-22	3/7/2017 8:57	trace	trace	3/14/2017
DPR00369	HM-23	3/8/2017 8:28	ND	ND	3/15/2017
DPR00376	HM-24	3/9/2017 8:13	trace	trace	3/15/2017
DPR00383	HM-25	3/13/2017 10:30	0.17	0.85	3/21/2017
DPR00390	HM-26	3/14/2017 9:47	0.18	0.90	3/21/2017
DPR00397	HM-27	3/15/2017 9:00	0.06	0.30	3/22/2017
DPR00404	HM-28	3/16/2017 8:34	trace	trace	3/22/2017
DPR00411	HM-29	3/20/2017 9:00	trace	trace	3/28/2017
DPR00418	HM-30	3/21/2017 8:02	0.11	0.55	3/28/2017
DPR00425	HM-31	3/22/2017 7:58	trace	trace	3/29/2017
DPR00432	HM-32	3/23/2017 7:43	0.20	1.00	3/29/2017
DPR00439	HM-33	3/26/2017 10:15	trace	trace	4/4/2017
DPR00446	HM-34	3/27/2017 10:04	trace	trace	4/4/2017
DPR00453	HM-35	3/28/2017 9:08	ND	ND	4/5/2017
DPR00460	HM-36	3/29/2017 8:38	trace	trace	4/5/2017
DPR00467	HM-37	4/2/2017 9:00	trace	trace	4/10/2017
DPR00474	HM-38	4/3/2017 8:01	ND	ND	4/10/2017

Table 2: Air Monitoring Results, continued

Huron Middle School

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00481	HM-39	4/4/2017 7:20	trace	trace	4/11/2017
DPR00488	HM-40	4/5/2017 7:11	0.35	1.75	4/11/2017
DPR00521	HM-41	4/9/2017 9:15	ND	ND	4/17/2017
DPR00529	HM-42	4/10/2017 8:49	ND	ND	4/17/2017
DPR00537	HM-43	4/11/2017 7:54	trace	trace	4/18/2017
DPR00545	HM-44	4/12/2017 7:12	ND	ND	4/18/2017
DPR00553	HM-45	4/16/2017 7:00	ND	ND	4/24/2017
DPR00561	HM-46	4/17/2017 6:22	ND	ND	4/24/2017
DPR00569	HM-47	4/18/2017 6:24	ND	ND	4/25/2017
DPR00577	HM-48	4/19/2017 6:25	ND	ND	4/25/2017
DPR00585	HM-49	4/22/2017 9:30	ND	ND	5/1/2017
DPR00593	HM-50	4/23/2017 9:26	ND	ND	5/1/2017
DPR00601	HM-51	4/24/2017 9:00	ND	ND	5/2/2017
DPR00609	HM-52	4/25/2017 8:04	ND	ND	5/2/2017
DPR00617	HM-53	4/30/2017 7:00	ND	ND	5/8/2017
DPR00625	HM-54	5/1/2017 6:33	ND	ND	5/8/2017
DPR00633	HM-55	5/2/2017 6:20	ND	ND	5/12/2017
DPR00641	HM-56	5/3/2017 6:20	ND	ND	5/12/2017
DPR00649	HM-57	5/6/2017 7:00	ND	ND	5/15/2017
DPR00657	HM-58	5/7/2017 9:30	ND	ND	5/15/2017
DPR00665	HM-59	5/8/2017 8:40	trace	trace	5/16/2017
DPR00673	HM-60	5/9/2017 7:43	ND	ND	5/16/2017
DPR00681	HM-61	5/14/2017 6:30	ND	ND	5/22/2017
DPR00689	HM-62	5/15/2017 6:07	ND	ND	5/22/2017
DPR00697	HM-63	5/16/2017 6:08	ND	ND	5/23/2017
DPR00705	HM-64	5/17/2017 6:05	ND	ND	5/23/2017

trace: detections below the EQL but above the MDL
ND: not detected above the MDL

Table 2: Air Monitoring Results, continued

San Joaquin

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00219	SJ-1	1/30/2017 14:36	ND	ND	2/10/2017
DPR00226	SJ-2	1/31/2017 15:03	trace	trace	2/8/2017
DPR00233	SJ-3	2/1/2017 15:21	0.07	0.35	2/9/2017
DPR00240	SJ-4	2/2/2017 14:24	trace	trace	2/10/2017
DPR00247	SJ-5	2/6/2017 12:55	trace	trace	2/13/2017
DPR00254	SJ-6	2/7/2017 15:03	ND	ND	2/14/2017
DPR00261	SJ-7	2/8/2017 14:31	ND	ND	2/15/2017
DPR00268	SJ-8	2/9/2017 13:35	trace	trace	2/17/2017
DPR00275	SJ-9	2/13/2017 13:05	ND	ND	2/22/2017
DPR00282	SJ-10	2/14/2017 15:04	trace	trace	2/21/2017
DPR00289	SJ-11	2/15/2017 14:10	0.09	0.45	2/23/2017
DPR00303	SJ-13	2/20/2017 13:00	trace	trace	2/28/2017
DPR00310	SJ-14	2/21/2017 13:50	ND	ND	3/1/2017
DPR00317	SJ-15	2/22/2017 12:52	ND	ND	3/2/2017
DPR00324	SJ-16	2/23/2017 11:54	ND	ND	3/3/2017
DPR00331	SJ-17	2/27/2017 14:45	ND	ND	3/6/2017
DPR00338	SJ-18	2/28/2017 13:58	trace	trace	3/7/2017
DPR00345	SJ-19	3/1/2017 13:25	trace	trace	3/7/2017
DPR00352	SJ-20	3/2/2017 12:33	trace	trace	3/8/2017
DPR00359	SJ-21	3/6/2017 11:15	trace	trace	3/14/2017
DPR00366	SJ-22	3/7/2017 11:07	ND	ND	3/14/2017
DPR00373	SJ-23	3/8/2017 10:48	trace	trace	3/15/2017
DPR00380	SJ-24	3/9/2017 10:21	0.88	4.40	3/15/2017
DPR00387	SJ-25	3/13/2017 14:45	0.12	0.60	3/21/2017
DPR00394	SJ-26	3/14/2017 13:47	0.15	0.75	3/21/2017
DPR00401	SJ-27	3/15/2017 12:46	trace	trace	3/22/2017
DPR00408	SJ-28	3/16/2017 11:55	trace	trace	3/22/2017
DPR00415	SJ-29	3/20/2017 11:15	0.05	0.25	3/28/2017
DPR00422	SJ-30	3/21/2017 10:17	trace	trace	3/28/2017
DPR00429	SJ-31	3/22/2017 10:03	trace	trace	3/29/2017
DPR00436	SJ-32	3/23/2017 9:43	trace	trace	3/29/2017
DPR00443	SJ-33	3/26/2017 13:45	ND	ND	4/4/2017
DPR00450	SJ-34	3/27/2017 13:10	ND	ND	4/4/2017
DPR00457	SJ-35	3/28/2017 12:25	trace	trace	4/5/2017
DPR00464	SJ-36	3/29/2017 11:53	trace	trace	4/5/2017
DPR00471	SJ-37	4/2/2017 11:15	trace	trace	4/10/2017
DPR00478	SJ-38	4/3/2017 10:16	ND	ND	4/10/2017

Table 2: Air Monitoring Results, continued

San Joaquin, continued

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00485	SJ-39	4/4/2017 9:17	trace	trace	4/11/2017
DPR00492	SJ-40	4/5/2017 9:02	trace	trace	4/11/2017
DPR00525	SJ-41	4/9/2017 12:45	ND	ND	4/17/2017
DPR00533	SJ-42	4/10/2017 11:52	ND	ND	4/17/2017
DPR00541	SJ-43	4/11/2017 10:56	trace	trace	4/18/2017
DPR00549	SJ-44	4/12/2017 10:01	ND	ND	4/18/2017
DPR00557	SJ-45	4/16/2017 8:50	ND	ND	4/24/2017
DPR00565	SJ-46	4/17/2017 8:14	ND	ND	4/24/2017
DPR00573	SJ-47	4/18/2017 8:38	ND	ND	4/25/2017
DPR00581	SJ-48	4/19/2017 8:27	ND	ND	4/25/2017
DPR00589	SJ-49	4/22/2017 13:00	ND	ND	5/1/2017
DPR00597	SJ-50	4/23/2017 12:02	ND	ND	5/1/2017
DPR00605	SJ-51	4/24/2017 11:56	ND	ND	5/2/2017
DPR00613	SJ-52	4/25/2017 11:00	ND	ND	5/2/2017
DPR00621	SJ-53	4/30/2017 8:40	ND	ND	5/8/2017
DPR00629	SJ-54	5/1/2017 8:39	ND	ND	5/8/2017
DPR00637	SJ-55	5/2/2017 8:21	ND	ND	5/12/2017
DPR00645	SJ-56	5/3/2017 8:13	ND	ND	5/12/2017
DPR00653	SJ-57	5/6/2017 8:40	trace	trace	5/15/2017
DPR00661	SJ-58	5/7/2017 13:15	ND	ND	5/15/2017
DPR00669	SJ-59	5/8/2017 12:16	ND	ND	5/16/2017
DPR00677	SJ-60	5/9/2017 11:17	ND	ND	5/16/2017
DPR00685	SJ-61	5/14/2017 8:15	ND	ND	5/22/2017
DPR00693	SJ-62	5/15/2017 8:02	ND	ND	5/22/2017
DPR00701	SJ-63	5/16/2017 8:29	ND	ND	5/23/2017
DPR00709	SJ-64	5/17/2017 8:13	ND	ND	5/23/2017

trace: detections below the EQL but above the MDL
ND: not detected above the MDL

Table 2: Air Monitoring Results, continued

Tranquility

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00218	TY-1	1/30/2017 13:34	ND	ND	2/7/2017
DPR00225	TY-2	1/31/2017 14:18	trace	trace	2/8/2017
DPR00232	TY-3	2/1/2017 14:23	trace	trace	2/9/2017
DPR00239	TY-4	2/2/2017 13:24	trace	trace	2/10/2017
DPR00246	TY-5	2/6/2017 12:30	ND	ND	2/13/2017
DPR00253	TY-6	2/7/2017 14:33	ND	ND	2/14/2017
DPR00260	TY-7	2/8/2017 13:38	trace	trace	2/15/2017
DPR00267	TY-8	2/9/2017 13:01	trace	trace	2/17/2017
DPR00274	TY-9	2/13/2017 12:30	ND	ND	2/22/2017
DPR00281	TY-10	2/14/2017 14:23	0.08	0.40	2/21/2017
DPR00288	TY-11	2/15/2017 13:28	0.16	0.80	2/23/2017
DPR00302	TY-13	2/20/2017 12:10	trace	trace	2/28/2017
DPR00309	TY-14	2/21/2017 13:23	ND	ND	3/1/2017
DPR00316	TY-15	2/22/2017 12:25	ND	ND	3/2/2017
DPR00323	TY-16	2/23/2017 11:27	ND	ND	3/3/2017
DPR00330	TY-17	2/27/2017 13:45	ND	ND	3/6/2017
DPR00337	TY-18	2/28/2017 13:13	trace	trace	3/7/2017
DPR00344	TY-19	3/1/2017 12:50	trace	trace	3/7/2017
DPR00351	TY-20	3/2/2017 11:57	ND	ND	3/8/2017
DPR00358	TY-21	3/6/2017 10:40	ND	ND	3/14/2017
DPR00365	TY-22	3/7/2017 10:43	ND	ND	3/14/2017
DPR00372	TY-23	3/8/2017 10:20	ND	ND	3/15/2017
DPR00379	TY-24	3/9/2017 9:56	trace	trace	3/15/2017
DPR00386	TY-25	3/13/2017 13:45	ND	ND	3/21/2017
DPR00393	TY-26	3/14/2017 12:47	0.07	0.35	3/21/2017
DPR00400	TY-27	3/15/2017 11:50	ND	ND	3/22/2017
DPR00407	TY-28	3/16/2017 11:15	0.06	0.30	3/22/2017
DPR00414	TY-29	3/20/2017 10:40	trace	trace	3/28/2017
DPR00421	TY-30	3/21/2017 9:41	trace	trace	3/28/2017
DPR00428	TY-31	3/22/2017 9:38	trace	trace	3/29/2017
DPR00435	TY-32	3/23/2017 9:19	trace	trace	3/29/2017
DPR00442	TY-33	3/26/2017 13:00	ND	ND	4/4/2017
DPR00449	TY-34	3/27/2017 12:27	trace	trace	4/4/2017
DPR00456	TY-35	3/28/2017 11:51	ND	ND	4/5/2017
DPR00463	TY-36	3/29/2017 11:17	0.09	0.45	4/5/2017
DPR00470	TY-37	4/2/2017 10:40	trace	trace	4/10/2017

Table 2: Air Monitoring Results, continued

Tranquility, continued

Barcode	Sample Name	Start Date/Time	MITC (µg/mL)	MITC (µg/sample)	Analysis Date
DPR00477	TY-38	4/3/2017 9:41	ND	ND	4/10/2017
DPR00484	TY-39	4/4/2017 8:51	0.05	0.25	4/11/2017
DPR00491	TY-40	4/5/2017 8:40	trace	trace	4/11/2017
DPR00524	TY-41	4/9/2017 12:00	ND	ND	4/17/2017
DPR00532	TY-42	4/10/2017 11:21	ND	ND	4/17/2017
DPR00540	TY-43	4/11/2017 10:22	trace	trace	4/18/2017
DPR00548	TY-44	4/12/2017 9:29	ND	ND	4/18/2017
DPR00556	TY-45	4/16/2017 8:20	trace	trace	4/24/2017
DPR00564	TY-46	4/17/2017 7:51	trace	trace	4/24/2017
DPR00572	TY-47	4/18/2017 8:01	ND	ND	4/25/2017
DPR00580	TY-48	4/19/2017 8:04	ND	ND	4/25/2017
DPR00588	TY-49	4/22/2017 12:15	trace	trace	5/1/2017
DPR00596	TY-50	4/23/2017 11:17	ND	ND	5/1/2017
DPR00604	TY-51	4/24/2017 11:19	0.05	0.25	5/2/2017
DPR00612	TY-52	4/25/2017 10:30	ND	ND	5/2/2017
DPR00620	TY-53	4/30/2017 8:20	ND	ND	5/8/2017
DPR00628	TY-54	5/1/2017 8:16	trace	trace	5/8/2017
DPR00636	TY-55	5/2/2017 7:59	ND	ND	5/12/2017
DPR00644	TY-56	5/3/2017 7:51	ND	ND	5/12/2017
DPR00652	TY-57	5/6/2017 8:20	ND	ND	5/15/2017
DPR00660	TY-58	5/7/2017 12:15	ND	ND	5/15/2017
DPR00668	TY-59	5/8/2017 11:18	trace	trace	5/16/2017
DPR00676	TY-60	5/9/2017 10:19	ND	ND	5/16/2017
DPR00684	TY-61	5/14/2017 7:45	ND	ND	5/22/2017
DPR00692	TY-62	5/15/2017 7:37	ND	ND	5/22/2017
DPR00700	TY-63	5/16/2017 8:05	trace	trace	5/23/2017
DPR00708	TY-64	5/17/2017 7:51	ND	ND	5/23/2017

trace: detections below the EQL but above the MDL
ND: not detected above the MDL

Table 3: Quality Control Results, Fresno County 2017

Field Spikes

Sample Name	Analysis Date	Spike Amount (µg/mL)	Field Spike Result (µg/mL)	Primary Sample Result (µg/mL)	Percent Spike Recovery
HM-2-FS	2/8/2017	5.0	3.73	0.02	74.3
HM-7-FS	2/15/2017	5.0	3.50	0.00	70.0
HM-10-FS	2/21/2017	5.0	2.99	0.10	58.6
HM-15-FS	3/2/2017	5.0	2.98	0.01	59.5
HM-18-FS	3/7/2017	5.0	3.76	0.02	74.9
HM-23-FS	3/15/2017	5.0	2.70	0.00	54.0
HM-26-FS	3/21/2017	5.0	3.75	0.18	72.4
HM-31-FS	3/29/2017	5.0	3.99	0.02	79.5
HM-34-FS	4/4/2017	5.0	3.87	0.01	77.2
HM-39-FS	4/11/2017	5.0	4.10	0.02	81.7
HM-42-FS	4/17/2017	5.0	4.14	0.01	82.7
HM-47-FS	4/25/2017	5.0	2.14	0.00	42.8
HM-50-FS	5/1/2017	5.0	4.68	0.00	93.6
HM-55-FS	5/12/2017	5.0	2.32	0.00	46.4
HM-59-FS	5/16/2017	5.0	3.05	0.01	60.9
HM-63-FS	5/23/2017	5.0	2.36	0.00	47.2

Trip Spikes

Barcode	Analysis Date	Spike Amount (µg/mL)	MITC (µg/mL)	Percent Spike Recovery
DPR00501	2/13/2017	5.0	4.38	87.6
DPR00502	2/23/2017	5.0	3.89	77.8
DPR00503	2/22/2017	5.0	4.47	89.4
DPR00504	2/28/2017	5.0	3.33	66.6
DPR00505	3/6/2017	5.0	4.72	94.4
DPR00506	3/14/2017	5.0	3.95	79.0
DPR00507	3/21/2017	5.0	5.13	102.6
DPR00508	3/28/2017	5.0	3.85	77.0
DPR00509	4/4/2017	5.0	4.52	90.4
DPR00510	4/10/2017	5.0	4.30	86.0
DPR00527	4/17/2017	5.0	4.59	91.8
DPR00567	4/24/2017	5.0	4.28	85.6
DPR00591	5/1/2017	5.0	4.56	91.2
DPR00631	5/8/2017	5.0	3.80	76.0
DPR00663	5/15/2017	5.0	4.05	81.0
DPR00687	5/22/2017	5.0	2.76	55.2

Laboratory Control Spikes (LCS)

Analysis Date	Spiked Result (µg/mL)	Spike Amount (µg/mL)	Percent Recovery	Relative Percent Difference (RPD)
2/7/2017	4.09	5.0	81.8	3.7
	4.24	5.0	84.8	
2/8/2017	4.35	5.0	87.0	0.0
	4.35	5.0	87.0	
2/9/2017	4.11	5.0	82.2	8.8
	3.75	5.0	75.0	
2/10/2017	4.36	5.0	87.2	0.2
	4.35	5.0	87.0	
2/13/2017	4.3	5.0	86.0	0.7
	4.33	5.0	86.6	
2/14/2017	4.21	5.0	84.2	7.1
	4.51	5.0	90.2	
2/15/2017	4.25	5.0	85.0	1.2
	4.3	5.0	86.0	

Table 3: Laboratory Control Spikes, continued

Analysis Date	Spiked Result (µg/mL)	Spike Amount (µg/mL)	Percent Recovery	Relative Percent Difference (RPD)
2/17/2017	4.2	5.0	84.0	1.7
	4.27	5.0	85.4	
2/21/2007	3.41	5.0	68.2	23.2
	4.2	5.0	84.0	
2/22/2017	4.25	5.0	85.0	5.4
	4.02	5.0	80.4	
2/23/2017	4.47	5.0	89.4	0.7
	4.44	5.0	88.8	
2/28/2017	4.11	5.0	82.2	7.3
	4.41	5.0	88.2	
3/1/2017	5.12	5.0	102.4	4.1
	4.91	5.0	98.2	
3/2/2017	4.33	5.0	86.6	3.7
	4.17	5.0	83.4	
3/3/2017	4.29	5.0	85.8	12.1
	4.81	5.0	96.2	
3/6/2017	4.53	5.0	90.6	4.6
	4.74	5.0	94.8	
3/7/2017	4.39	5.0	87.8	5.5
	4.63	5.0	92.6	
3/8/2017	4.46	5.0	89.2	0.7
	4.43	5.0	88.6	
3/14/2017	4.52	5.0	90.4	2.7
	4.64	5.0	92.8	
3/15/2017	3.92	5.0	78.4	25.8
	2.91	5.0	58.2	
3/21/2017	4.78	5.0	95.6	0.6
	4.75	5.0	95.0	
3/22/2017	4.47	5.0	89.4	0.0
	4.47	5.0	89.4	
3/28/2017	4.16	5.0	83.2	7.9
	4.49	5.0	89.8	
3/29/2017	4.05	5.0	81.0	12.8
	4.57	5.0	91.4	
4/4/2017	4.38	5.0	87.6	5.5
	4.62	5.0	92.4	
4/5/2017	4.65	5.0	93.0	0.6
	4.68	5.0	93.6	

Table 3: Laboratory Control Spikes, continued

Analysis Date	Spiked Result (µg/mL)	Spike Amount (µg/mL)	Percent Recovery	Relative Percent Difference (RPD)
4/10/2017	4.44	5.0	88.8	5.0
	4.22	5.0	84.4	
4/11/2017	4.33	5.0	86.6	6.5
	4.05	5.0	81.0	
4/17/2017	4.48	5.0	89.6	1.6
	4.41	5.0	88.2	
4/18/2017	4.34	5.0	86.8	4.1
	4.52	5.0	90.4	
4/24/2017	4.74	5.0	94.8	14.1
	4.07	5.0	81.4	
4/25/2017	4.53	5.0	90.6	2.4
	4.64	5.0	92.8	
5/1/2017	4.32	5.0	86.4	13.4
	4.9	5.0	98.0	
5/2/2017	4.55	5.0	91.0	3.3
	4.7	5.0	94.0	
5/8/2017	3.85	5.0	77.0	0.8
	3.88	5.0	77.6	
5/12/2017	3.4	5.0	68.0	5.6
	3.59	5.0	71.8	
5/15/2017	4.24	5.0	84.8	1.9
	4.16	5.0	93.2	
5/16/2017	3.95	5.0	79.0	7.1
	4.23	5.0	84.6	
5/22/2017	4.57	5.0	91.4	3.7
	4.74	5.0	94.8	
5/23/2017	3.96	5.0	79.2	11.6
	4.42	5.0	88.4	

4. Collocated Results Summary

Sample Name	Analysis Date	Primary Result (µg/sample)	Collocated Result (µg/sample)	Relative Percent Difference (RPD)
HM-1-CO	2/7/2017	ND	ND	N/A
HM-6-CO	2/14/2017	ND	ND	N/A
HM-11-CO	2/23/2017	1.1	1.15	4.4
HM-14-CO	3/1/2017	ND	ND	N/A
HM-19-CO	3/7/2017	trace	trace	N/A
HM-22-CO	3/14/2017	trace	trace	N/A
HM-27-CO	3/22/2017	0.3	0.25	18.2
HM-30-CO	3/28/2017	0.55	0.55	N/A
HM-35-CO	4/5/2017	ND	ND	N/A
HM-38-CO	4/10/2017	ND	ND	N/A
HM-43-CO	4/18/2017	trace	trace	N/A
HM-46-CO	4/24/2017	ND	ND	N/A
HM-51-CO	5/2/2017	ND	ND	N/A
HM-54-CO	5/8/2017	ND	ND	N/A
HM-58-CO	5/15/2017	ND	ND	N/A
HM-62-CO	5/22/2017	ND	ND	N/A

Table 5. Replicate Samples Summary

Sample Name	Analysis Date	Primary MITC (µg/mL)	Replicate MITC (µg/mL)	RPD
HC-1	2/7/2017	ND	ND	N/A
HM-2	2/8/2017	trace	trace	N/A
HC-3	2/9/2017	trace	trace	N/A
TY-4	2/10/2017	trace	trace	N/A
SJ-5	2/13/2017	trace	trace	N/A
SJ-6	2/14/2017	ND	ND	N/A
FO-7	2/15/2017	ND	ND	N/A
FO-8	2/17/2017	ND	ND	N/A
SJ-10	2/21/2017	trace	trace	N/A
FO-9	2/22/2017	ND	ND	N/A
FO-11	2/23/2017	trace	trace	N/A
HC-13	2/28/2017	trace	0.05	N/A
HM-14	3/1/2017	ND	ND	N/A
CC-15	3/2/2017	ND	ND	N/A
TY-16	3/3/2017	ND	ND	N/A
SJ-17	3/6/2017	ND	ND	N/A
CC-18	3/7/2017	trace	trace	N/A
TY-19	3/7/2017	trace	trace	N/A
TY-20	3/8/2017	ND	ND	N/A
TY-21	3/14/2017	ND	ND	N/A
FO-22	3/14/2017	ND	ND	N/A
SJ-23	3/15/2017	trace	trace	N/A
HC-24	3/15/2017	trace	trace	N/A
TY-25	3/21/2017	ND	trace	N/A
HM-26	3/21/2017	0.18	0.19	5.4
SJ-27	3/22/2017	trace	trace	N/A
FO-28	3/22/2017	ND	ND	N/A
TY-29	3/28/2017	trace	trace	N/A
SJ-30	3/28/2017	trace	trace	N/A
SJ-31	3/29/2017	trace	trace	N/A
CC-32	3/29/2017	trace	trace	N/A
TY-33	4/4/2017	ND	ND	N/A
SJ-34	4/4/2017	ND	ND	N/A
SJ-35	4/5/2017	trace	ND	N/A
HC-36	4/5/2017	trace	trace	N/A

Table 5: Replicate Samples Summary, continued

Sample Name	Analysis Date	Primary MITC (µg/mL)	Replicate MITC (µg/mL)	RPD
CC-37	4/10/2017	trace	trace	N/A
TY-38	4/10/2017	ND	ND	N/A
HC-39	4/11/2017	trace	trace	N/A
HM-40	4/11/2017	0.35	0.36	2.8
HC-41	4/17/2017	ND	ND	N/A
HM-42	4/17/2017	ND	ND	N/A
CC-43	4/18/2017	trace	trace	N/A
TY-44	4/18/2017	ND	ND	N/A
CC-45	4/24/2017	trace	trace	N/A
TY-46	4/24/2017	trace	trace	N/A
SJ-47	4/25/2017	ND	ND	N/A
FO-48	4/25/2017	ND	ND	N/A
HM-49	5/1/2017	ND	trace	N/A
TY-50	5/1/2017	ND	ND	N/A
SJ-51	5/2/2017	ND	ND	N/A
FO-52	5/2/2017	ND	ND	N/A
HM-53	5/8/2017	ND	ND	N/A
SJ-54	5/8/2017	ND	ND	N/A
CC-55	5/12/2017	ND	ND	N/A
TY-56	5/12/2017	ND	ND	N/A
HM-57	5/15/2017	ND	ND	N/A
TY-58	5/15/2017	ND	ND	N/A
HM-59-FS	5/16/2017	3.05	2.87	6.1
HC-60	5/16/2017	ND	ND	N/A
HM-61	5/22/2017	ND	ND	N/A
CC-62	5/22/2017	ND	ND	N/A
TY-63	5/23/2017	trace	trace	N/A
SJ-64	5/23/2017	ND	ND	N/A

Table 6. MDL Study

MITC MDL Study 01/09/17	
Replicates	Conc. (µg/mL)
1	0.028229
2	0.029814
3	0.035108
4	0.034525
5	0.029805
6	0.031952
7	0.031931
Average	0.032
Median	0.032
Std.Dev.	0.00255
Percent RSD (%RSD)	0.080
Students t-Value @ 99%	3.143
	µg/mL
MDL ($t_{01,2}$)	**0.008**
	µg/sample
MDL x 5mL/sample ($t_{01,2}$)	**0.040**

Seven MDL spikes were prepared on 1/9/17 by spiking 2.5uL of the 100ug/mL MITC standard onto sorbent tubes and extracting with 5mL of 0.1% CS2 in EA (0.05µg/mL after extraction)

Table 7. Breakthrough Study

Upper calibration level 10ug/mL

Date	Spike Concentration	0.5LPM Front	0.5LPM Back	1.0LPM Front	1.0 LPM Back	
1/12/2017	8µg/mL	6.05	below RL	6.19	below RL	
1/17/2017	16µg/mL	11.14	below RL	12.38	0.15	
1/18/2017	20µg/mL	14.98	0.57	8.66	7.16	note 1
1/24/2017	12µg/mL	10.81	0.06	9.24	1.95	note 2
1/25/2017	12µg/mL	NA	NA	7.51	2.28	note 3
1/26/2017	10µg/mL	9.17	0	NA	NA	
1/26/2017	12µg/mL	9.55	0	NA	NA	
2/1/2017	15µg/mL	12.66	0)	NA	NA	
2/1/2017	17µg/mL	14.41	0.03	NA	NA	

note 1: samplers ran 46 hours instead of 24 hours
note 2: sampler battery for 1.0 LPM was failing prior to 24 hours – cannot confirm stable flow for full 24 hours
note 3:removed from sampler after 21 hours

Additional Breakthrough Study, 2/23/17

Date	Spike Concentration	0.75LPM Front	0.75LPM Back
2/23/2027	0.5µg/mL	0.36	below RL
2/23/2027	1.0µg/mL	0.74	0.018