Message

From: Sieffert, Margaret [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DBB22FA4A9B14C1E8C634B2E0791CEFA-MSIEFFER]
Sent: 9/25/2018 6:58:54 PM
To: Loukeris, Constantinos [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eaca7c5183174cca80b0b9714d685b17-CLoukeri]
CC: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Subject: FW: OGI and ethylene oxide

Here is what we have heard regarding using the FLIR from OAQPS.

From: Dewees, Jason
Sent: Monday, August 06, 2018 11:47 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: OGI and ethylene oxide

Unless an instrument is directly measuring EtO, it will have some sort of ranging response to the instrument. This would be true for OGI, FID or PID. Even within the family of PIDs, there will be different responses. On top of that, there is also an inherent ability of the instrument to read at certain mass rates. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

From: Sieffert, Margaret
Sent: Monday, August 06, 2018 12:22 PM
To: Dewees, Jason <Dewees.Jason@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: OGI and ethylene oxide

Jason,

Thanks for the additional information as I wasn't aware of the limitations using the FLIR with regard to EtO. I was under the impression that because EtO's wavelength was in the FLIR's range then it could be seen at any concentration. I am not the one certified to use the FLIR but we would have brought an enforcement staff person with to use the FLIR. In our initial discussions, they did not mention this limitation. Is this limitation only for EtO or does this extend to other chemicals as well? We do have a PID as well but we thought the FLIR would give us a better picture of their fugitives. They claimed everything was sealed tightly but without the FLIR or PID we had no way to confirm this. They use a PID when a sensor goes off but they have to figure out what the cause is and we thought a FLIR might point them in the right direction without having the spend time moving the PID all around the equipment in the area.

The LEL sensors located all around the facility near the floor have a range of <1ppm, 1-3ppm (requires a limit of only 15 min inside the area), 3-5ppm (forced air respirator required), and >50ppm (evacuation). There is a common warehouse area between the chambers and the aeration room. They said that when they move the product from the chamber to the aeration room that the sensors go off sometimes. They also were unable to explain where the air in that room would be released to the atmosphere. We asked them to figure out where all their fugitive emission points are and we should be receiving a description sometime soon. . If a sensor goes off would it be considered a large leak?

Margaret

From: Dewees, Jason
Sent: Monday, August 06, 2018 10:21 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: OGI and ethylene oxide

It's not a question of whether it will see it. The question is whether it will see all the leaks that are policy/regulatorily/health effect relevant. So, if that's all you have available, then you can use it to find large leaks. You should just be careful assuming that no leaks found with OGI means there aren't leaks that could be significant (ie they are bigger than the emissions coming out of all the stacks (Enforcement Techniques / Ex. 7(e)).

From: Sieffert, Margaret
Sent: Monday, August 06, 2018 11:16 AM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Dewees, Jason <Dewees.Jason@epa.gov>
Subject: RE: OGI and ethylene oxide

Hi Ned,

We had reached out to Cary Secrest about the [redacted] which is what R5 has inhouse. According to Cary, the camera can see EtO. There was confusion about the camera prior to our meeting/tour and Sterigenics thought that it was only a heat sensing camera and asked us not to bring it. Our main thought in bringing the camera would be to see if it could be used to determine where their fugitive leaks are in the facility and outside the building. We are aware that the camera doesn't give you concentrations of what is being emitted but we were hoping to get a better sense of where they might have fugitives as currently they only use an industry agreed upon percentage and that is how they calculate fugitives.

-Margaret

From: Shappley, Ned
Sent: Monday, August 06, 2018 9:45 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Dewees, Jason <Dewees.Jason@epa.gov>
Subject: OGI and ethylene oxide

Margaret/Alexis,

I meant to follow-up with y'all after the call regarding the use of OGI for EtO leaks. We know that OGI will see an EtO leak but it likely will not be able to see this leak at the "action level" you need. The detection capabilities of the camera will depend on a number of factors, with the compound of interest and background temperature (ΔT) being the most important in this instance. Even in ideal situation, the lowest leak you could see would be in the neighborhood of [redacted]

Enforcement Techniques / Ex. 7(e)

I just wanted to make you aware of the limitations of the camera. Also, I have included Jason Dewees with my group on this email in case you have any questions to the capabilities of the camera for this application. He is the technical lead on OGI measurement for OAQPS.

Thanks,

Ned Shappley | USEPA|OAQPS|AQAD|Measurement Technology Group
109 TW Alexander Drive (E143-02) | Research Triangle Park, NC 27711
email: shappley.ned@epa.gov | Phone (919)541-7903

Message

From: Frank, Nathan [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DD8B205F55AB45DEA0C01F08E714F8C1-NFRANK02]
Sent: 6/18/2018 9:22:48 PM
To: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Subject: RE: EtO Sterigenics

Sure.

From: Cain, Alexis
Sent: Monday, June 18, 2018 1:39 PM
To: Frank, Nathan <frank.nathan@epa.gov>
Subject: RE: EtO Sterigenics

Deliberative Process / Ex. 5 & Enforcement Confidential / Ex. 7(e)

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Frank, Nathan
Sent: Monday, June 18, 2018 1:20 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: EtO Sterigenics

Deliberative Process / Ex. 5 & Enforcement Confidential / Ex. 7(e)

From: Cain, Alexis
Sent: Monday, June 18, 2018 1:10 PM
To: Frank, Nathan <frank.nathan@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: EtO Sterigenics

Deliberative Process / Ex. 5 & Enforcement Confidential / Ex. 7(e)

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Monday, June 18, 2018 12:41 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: RE: EtO Sterigenics

Some responses to the questions below before I leave for the day.

From: Cain, Alexis
Sent: Monday, June 18, 2018 11:57 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: FW: EtO Sterigenics

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Monday, June 18, 2018 11:56 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>
Subject: FW: EtO Sterigenics

FYI. Questions to prepare for Wed.
-Ed

From: Payne, James
Sent: Monday, June 18, 2018 11:03 AM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Mooney, John <Mooney.John@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>; Thiede, Kurt <thiede.kurt@epa.gov>
Subject: RE: EtO Sterigenics

Thanks Ed. Very helpful. And would welcome input below. Jim

Deliberative Process / Ex. 5 & Attorney Client / Ex. 5

Deliberative Process / Ex. 5 & Attorney Client / Ex. 5

From: Nam, Ed
Sent: Monday, June 18, 2018 8:32 AM
To: Thiede, Kurt <thiede.kurt@epa.gov>; Payne, James <payne.james@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Williams, Felicia <Williams.Felicia@epa.gov>; Martinez, Isidra <Martinez.Isidra@epa.gov>
Cc: Mooney, John <Mooney.John@epa.gov>; Breneman, Sara <breneman.sara@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>; King, Suzanne <king.suzanne@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Subject: RE: EtO Sterigenics

Felicia, Isidra,

Attached is the briefing for the RA on Ethylene Oxide and Sterigenics.
This briefing is consistent with the elevation policy. We will present this in lieu of general, so we can cancel the general in the following hour.

Thanks
-Ed

-----Original Appointment-----
From: Thiede, Kurt
Sent: Tuesday, June 12, 2018 1:15 PM
To: Thiede, Kurt; Payne, James; Nam, Ed; Furey, Eileen; Cain, Alexis; Siegel, Kathryn; Bollweg, George; Compher, Michael; Olson, Erik; Shaffer, Loretta; Nwia, Jacqueline; Sieffert, Margaret
Subject: EtO Sterigenics
When: Wednesday, June 20, 2018 10:00 AM-10:45 AM (UTC-06:00) Central Time (US & Canada).
Where: RA's Large Conf. Rm.

Message

From: Siegel, Kathryn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F57A52EFEAD9497CB582B11B8C85F09F-KSIEGE02]
Sent: 10/4/2018 4:15:54 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
CC: Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]
Subject: Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

From: Nam, Ed
Sent: Thursday, October 04, 2018 11:13 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>
Subject: Deliberative Process / Ex. 5

Katie, Alexis,

Deliberative Process / Ex. 5

Thanks,
-Ed

Message

From: Nwia, Jacqueline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D299B56BD7EF46709FB7465FD1E15466-JNWIA]
Sent: 5/17/2018 6:47:42 PM
To: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Subject: FW: Testing in Willowbrook

Hi Alexis,

Are you comfortable with Erik's recommended response? Please confirm to all so I could respond today.

Thanks.

Jackie

From: Olson, Erik
Sent: Thursday, May 17, 2018 1:36 PM
To: Nwia, Jacqueline <nwia.jacqueline@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: Testing in Willowbrook

Hi Jackie,

Deliberative Process /Attorney Client Ex. 5

- Erik

Erik H. Olson
Associate Regional Counsel
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Mailcode C-14J
Chicago, Illinois 60604

olson.erik@epa.gov
(312)886-6829

From: Olson, Erik
Sent: Thursday, May 17, 2018 12:39 PM
To: Nwia, Jacqueline <nwia.jacqueline@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Testing in Willowbrook

This is speculation, but I'm guessing this is our guy:

https://www.linkedin.com/in/ Personal Privacy / Ex. 6

Erik H. Olson
Associate Regional Counsel
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Mailcode C-14J
Chicago, Illinois 60604

olson.erik@epa.gov
(312)886-6829

From: Olson, Erik
Sent: Thursday, May 17, 2018 12:33 PM
To: Nwia, Jacqueline <nwia.jacqueline@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Testing in Willowbrook

Hi Jackie,

Deliberative / Ex. 5 & Attorney Client Privileged / Ex. 5

- Erik

Erik H. Olson
Associate Regional Counsel
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Mailcode C-14J
Chicago, Illinois 60604

olson.erik@epa.gov
(312)886-6829

From: Nwia, Jacqueline
Sent: Thursday, May 17, 2018 12:21 PM
To: Olson, Erik <olson.erik@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: FW: Testing in Willowbrook

Erik,

B
a Deliberative / Ex. 5 & Attorney Client Privileged / Ex. 5

Thanks.

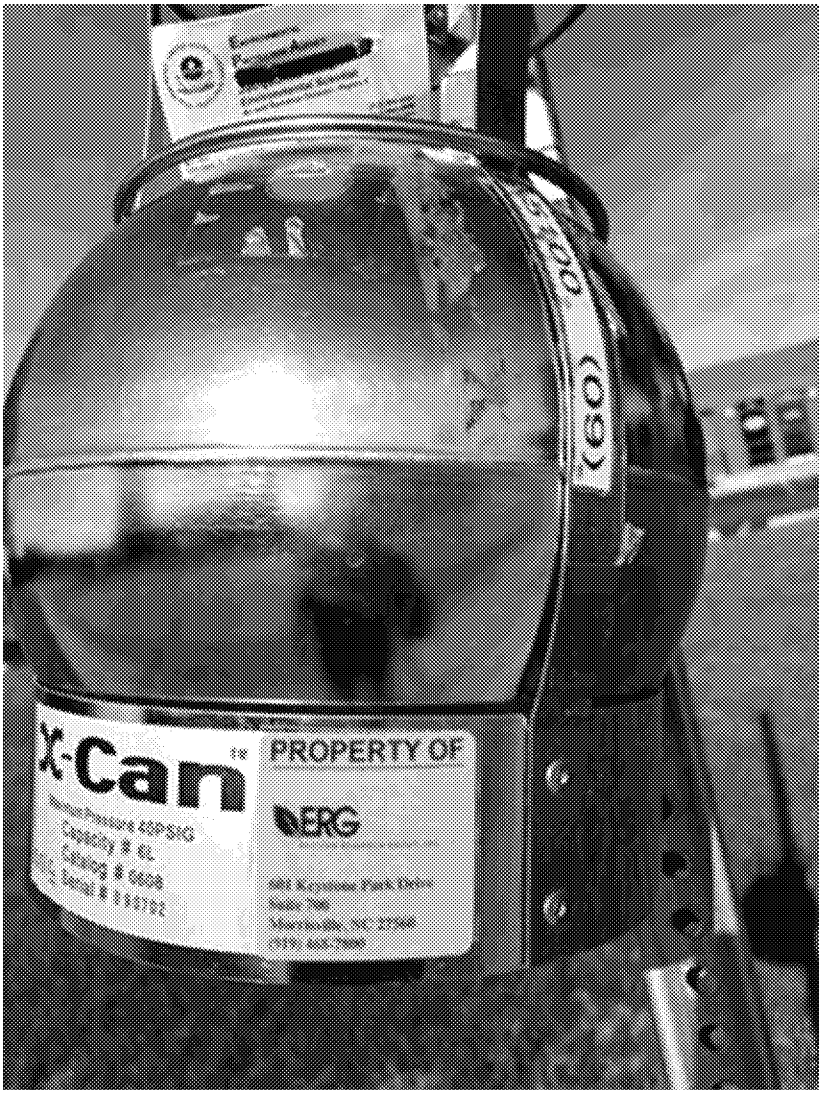
Jackie

From: Sean Stava-Murray Personal Email / Ex. 6
Sent: Thursday, May 17, 2018 10:24 AM
To: Nwia, Jacqueline <nwia.jacqueline@epa.gov>
Subject: Testing in Willowbrook

Hello,

I'm curious about the testing occurring near my place of employment (see pictures). Is this part of a general testing plan or has something specifically triggered testing in this area? The can is approximately here: 41.7503663,-87.938197,18 on Plaza Ct in Willowbrook, IL. Some of my co-workers are worrying types.

Regards,
Sean Murray


X-Can
PROPERTY OF
ERG

Environmental
Protection Agency
Environmental Scientist

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/14/2018 2:08:25 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: Stack Testing - Sterigenics

Ack—see message from Ed.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Friday, September 14, 2018 9:04 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Stack Testing - Sterigenics

Deliberative Process / Ex. 5 & Enforcement Confidential Ex. 7(a)

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Friday, September 14, 2018 8:23 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Stack Testing - Sterigenics

Deliberative Process / Ex. 5 & Enforcement Confidential Ex. 7(a)

From: Cain, Alexis
Sent: Friday, September 14, 2018 8:21 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Stack Testing - Sterigenics

I talked to Ned again and he said that he actually wouldn't mind coming, because it would give him the opportunity to visit a sterilizer and get a sense of where the fugitives might be coming from, which he hasn't done yet.

Deliberative Process / Ex. 5

Thanks

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Friday, September 14, 2018 8:14 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Stack Testing - Sterigenics

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5 & Enforcement Confidential Ex. 7(a)

-Margaret

From: Cain, Alexis
Sent: Friday, September 14, 2018 8:05 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: FW: Stack Testing - Sterigenics

Hi Margaret—I talked with Katie about this, and apparently Ed wants a USEPA presence at the stack test. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Shappley, Ned
Sent: Friday, September 14, 2018 7:58 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: FW: Stack Testing - Sterigenics

Alexis/Margaret,

This is what I received from my Associate Office Director yesterday. I am happy and willing to observe the next weeks testing, just let me know how best I could be of service.

Regards,
Ned

From: Koerber, Mike
Sent: Thursday, 13 September, 2018 16:06
To: Shappley, Ned <Shappley.Ned@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Hemby, James <Hemby.James@epa.gov>; Wayland, Richard <Wayland.Richard@epa.gov>
Subject: FW: Stack Testing - Sterigenics

Ned – Your presence has been requested. I am supportive of your involvement, assuming you are able to travel during the days in question.

Mike

From: Nam, Ed
Sent: Thursday, September 13, 2018 2:33 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>
Subject: RE: Stack Testing - Sterigenics

Hi Mike,

Do you support Ned Shappley coming to witness the stack test? I think my staff have reached out to him directly.

Deliberative Process / Ex. 5 & Enforcement Confidential Ex. 7(a)

Thanks,
-Ed

From: Koerber, Mike
Sent: Thursday, September 13, 2018 11:04 AM
To: Nam, Ed <nam.ed@epa.gov>
Subject: Re: Stack Testing - Sterigenics

Thanks

Sent from my iPhone

On Sep 13, 2018, at 11:56 AM, Nam, Ed <nam.ed@epa.gov> wrote:

> FYI: Stack testing now scheduled for 9/20-21
>
> ---
>
> **From:** Armitage, Julie [mailto:Julie.Armitage@Illinois.gov]
> **Sent:** Thursday, September 13, 2018 9:18 AM
> **To:** Nam, Ed <nam.ed@epa.gov>
> **Subject:** FW: Stack Testing - Sterigenics
>
> Fyi. Likely dates. Kevin has indicated he is available.
>
> ---
>
> **From:** Hoffman, Kathy <KHoffman@sterigenics.com>
> **Sent:** Wednesday, September 12, 2018 6:10 PM
> **To:** Mattison, Kevin <Kevin.Mattison@Illinois.gov>
> **Cc:** Armitage, Julie <Julie.Armitage@Illinois.gov>; Wagner, Kevin <KWagner@sterigenics.com>
> **Subject:** [External] Stack Testing - Sterigenics
>
> Kevin:
>
> Thank you again for your efforts in getting us an approved test protocol last week. I realize that you are out of the office on vacation but I thought it would be good to confirm stack test dates in the event that you might be checking emails. Are you available next Thursday afternoon (September 20th) and Friday morning (September 21st) for the stack testing for the backvent emissions at our Willowbrook 1 and Willowbrook 2 facilities?

We are also available for any further questions or discussions needed on the test protocol, testing conditions, and/or final report expectations prior to this test.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/12/2018 1:58:14 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: EtO in R5 -- TRI and NEI comparison

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Wednesday, September 05, 2018 8:13 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: FW: EtO in R5 -- TRI and NEI comparison

From: Siegel, Kathryn
Sent: Tuesday, August 28, 2018 9:28 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>
Cc: Trine, Rae <trine.rae@epa.gov>; King, Suzanne <king.suzanne@epa.gov>
Subject: RE: EtO in R5 -- TRI and NEI comparison

*correction

- four facilities did not report to TRI
  - Medline
  - Baxter
  - Cardiac Pacemakers
  - Lutheran General

From: Siegel, Kathryn
Sent: Tuesday, August 28, 2018 9:24 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>
Cc: Trine, Rae <trine.rae@epa.gov>; King, Suzanne <king.suzanne@epa.gov>
Subject: EtO in R5 -- TRI and NEI comparison

Darcie,

After the Vantage question came up, Rae and Suzanne began doing a comparison of NEI and TRI for EtO. Rae queried the databases for reported EtO emissions of >200 pounds, summarized in the table below.

			NEI	TRI		
state	**county**	**site name**	**2014**	**2014**	**2015**	**2016**
IL	DuPage	Sterigenics US LLC	5565.964	5241	4899	4205

IL	Lake	Vantage	did not report	6412	11541	11541
IL	Lake	Medline Industries Inc Northpoint Services Div	3057.6	did not report		
MI	Kent	MedPlast Medical Inc.	1170.33	1170	1347	1294
IN	Monroe	Cook, Incorporated	678	678	775	746
IL	Will	Stepan Co	656.145	665	687	464
IL	Lake	Baxter Healthcare Corp	590	did not report		
IL	Cook	Pelron Corp	436.8	443	464	373
WI	Rock	EVONIK MATERIALS CORP	429.4	970[1]	495	518
				793[2]	639	240
MN	Ramsey	Cardiac Pacemakers Inc/Boston Scientific	304.3	did not report		
IL	Macon	Tate & Lyle Ingredients Americas LLC	236.52	312	312	312
IL	Cook	Lutheran General Hospital	206.736	did not report		
MI	Wayne	BASF Corp	did not report	175	284	845

1) 900 S PALM ST, JANESVILLE WISCONSIN 53548 (ROCK)
2) 337 VINCENT ST, MILTON WISCONSIN 53563 (ROCK)

This exercise brought up a couple of additional questions:

- like Vantage, BASF does not show up in NEI for EtO
- Evonik reported EtO emissions to TRI for two addresses in Rock County; the TRI reported levels do not match what is in NEI
- three facilities did not report to TRI
    - Medline
    - Cardiac Pacemakers
    - Lutheran General

Would you like us to start contacting the state emissions contacts to sort of these issues?

Please let us know the best way to coordinate. Thank you!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/24/2018 9:25:46 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]
CC: King, Suzanne [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8718f08e0b5343ec809b1c0f014cc2fa-SKing]
Subject: Company contacts
Attachments: 2014 NATA Target List.xlsx

Here are corporate/facility contact names that I have collected so far—column S in the attached. Suzanne has made inquiries and may have more contacts to fill in next week.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/24/2018 9:22:18 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]
Subject: RE: Comment about modeling data provided by Sterigenics

Thanks! Will do

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nguyen, Phuong
Sent: Friday, August 24, 2018 3:12 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Comment about modeling data provided by Sterigenics

Alexis - If you don't hear back from Steve by the end of the day, I think you can send an email to Sterigenics saying something like :

Deliberative / Ex. 5

From: Cain, Alexis
Sent: Friday, August 24, 2018 2:47 PM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: Comment about modeling data provided by Sterigenics

Thanks. I was going to do it, but I thought I ought to make sure that Steve was okay with me forwarding email. I left him a voicemail.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nguyen, Phuong
Sent: Friday, August 24, 2018 2:23 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: FW: Comment about modeling data provided by Sterigenics

Hi Alexis-
When you have a chance , would you please send Sterigenics an email to ask them for this information as well.

Thanks,
Phuong

Please provide the complete corner coordinates on the rooftop tiers for WB1 (1 tier) and WB2 (2 tiers).

From: King, Steven [mailto:Steven.King@Illinois.gov]
Sent: Tuesday, August 21, 2018 2:56 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Cc: Sprague, Jeff <Jeff.Sprague@Illinois.gov>
Subject: Comment about modeling data provided by Sterigenics

Alexis and Phuong,

I looked over the modeling data provided by Sterigenics.
Perhaps you already noticed this after your review, but there does not appear to be information provided on the heights (or complete corner coordinates) on the rooftop tiers on WB1 (1 tier) and WB2 (2 tiers).
I have attached a power point with the two images the company sent (slides 1 and 3), then put a yellow circle around the two tiers from a Google Earth screen grab (slides 2 and 4).
The stacks on both WB1 WB2 are particularly close to these tiers and will possibly impact the emissions exhausting from the stacks.

My recollection (and estimate) from ground view , and I wish I had taken some pictures with my phone when we were there, is that the tier on WB1 is possibly an extra 18' to 25' above the 25' base roof height.
For WB2, the two tiers aren't as markedly higher than the 23' base roof height, but I'd estimate the highest tier is ~ 15-18' above the base roof.

Warm Regards,

Steven King
847-294-4235

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/4/2018 2:28:01 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]
Subject: FW: Sterigenics - INTERNAL AND DELIBERATIVE

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Tuesday, September 04, 2018 8:55 AM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Witt, Jon <Witt.Jon@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Subject: RE: Sterigenics - INTERNAL AND DELIBERATIVE

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Shappley, Ned
Sent: Tuesday, September 04, 2018 8:39 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Witt, Jon <Witt.Jon@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Subject: RE: Sterigenics - INTERNAL AND DELIBERATIVE

Will do,

Deliberative Process / Ex. 5

Ned

From: Cain, Alexis
Sent: Tuesday, 4 September, 2018 09:30
To: Shappley, Ned <Shappley.Ned@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Witt, Jon <Witt.Jon@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Sterigenics - INTERNAL AND DELIBERATIVE

Thanks Ned. I appreciate this detailed comments! They looks good to me (though I lack expertise in this area). I'm not sure Margaret will be able to look at this before this morning's call, so I would suggest that you go ahead and send these to IEPA.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Shappley, Ned
Sent: Friday, August 31, 2018 12:55 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Witt, Jon <Witt.Jon@epa.gov>
Subject: Sterigenics - INTERNAL AND DELIBERATIVE
Importance: High

All,

Attached are my comments on the Sterigenics test plan with some additional comments on the previous test report. I will walk through these comments on our discussion with Ill. EPA, but I did not want to pass these onto him without your feedback.

Thanks and let me know if you have any questions,

Ned Shappley | USEPA|OAQPS|AQAD|Measurement Technology Group
109 TW Alexander Drive (E143-02) | Research Triangle Park, NC 27711
email: shappley.ned@epa.gov | Phone (919)541-7903

Appointment

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/4/2018 2:27:29 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]

Subject: FW: Sterigenics - Willowbrook
Location: RTP-OAQPS-E141B/RTP-OAQPS-BLDG-E

Start: 9/4/2018 6:30:00 PM
End: 9/4/2018 7:30:00 PM
Show Time As: Tentative

-----Original Appointment-----
From: Shappley, Ned
Sent: Tuesday, August 14, 2018 12:29 PM
To: Shappley, Ned; Mattison, Kevin; Witt, Jon; Cain, Alexis; Sieffert, Margaret; Siegel, Kathryn; RTP-OAQPS-919-541-4248-AQAD/Phone-Line/RTP-OAQPS-BLDG-C; Segall, Robin; Merrill, Raymond
Cc: Thurman, James
Subject: Sterigenics - Willowbrook
When: Tuesday, September 04, 2018 2:30 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: RTP-OAQPS-E141B/RTP-OAQPS-BLDG-E

Kevin,

The meeting is to:

Deliberative Process / Ex. 5

Please feel free to reschedule if this time does not work for you.

Ned

Conference Line for call, **Conference Line / Ex. 6**

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/4/2018 1:58:30 PM
To: Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]; Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]; Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
CC: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]
Subject: Sterigenics Modeling

FYI

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nguyen, Phuong
Sent: Friday, August 31, 2018 10:27 AM
To: Compher, Michael <compher.michael@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: FW: June 27 EPA/IEPA/Sterigenics meeting

Hi Michael-

Deliberative Process / Ex. 5

Phuong

a

From: Cain, Alexis
Sent: Thursday, June 28, 2018 1:33 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Marcus, Danny <marcus.danny@epa.gov>
Cc: Damico, Genevieve <damico.genevieve@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>
Subject: RE: June 27 EPA/IEPA/Sterigenics meeting

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Thursday, June 28, 2018 12:33 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Marcus, Danny <marcus.danny@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Damico, Genevieve <damico.genevieve@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>
Subject: FW: June 27 EPA/IEPA/Sterigenics meeting

sharing with the team…thanks!

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Thursday, June 28, 2018 11:58 AM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Wagner, Kevin <KWagner@sterigenics.com>
Subject: RE: June 27 EPA/IEPA/Sterigenics meeting

Ed:

Thank you for coordinating the call and the follow-up notes.

Attached is a summary of the Willowbrook emissions before and after the backvent connection project that we discussed. The top part of the spreadsheet estimates the maximum potential to emit, using permitted usage amounts and required control efficiencies. The bottom part of the spreadsheet estimates the actual emissions, using current 2017 usage amounts and the control efficiencies from the last compliance test. Both portions of the spreadsheet include our process emissions as well as an estimate of the fugitive emissions.

In addition, I wanted to reiterate our projected timeline for the backvent connection construction project. As indicated during the call yesterday, we estimate that this project will take from 4 to 6 weeks from yesterday. I will provide weekly updates to you on this project.

We are working on the other commitments we agreed to during the meeting.

Let me know if you have any questions on the information provided.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

From: Nam, Ed [mailto:nam.ed@epa.gov]
Sent: Thursday, June 28, 2018 10:09 AM
To: Hoffman, Kathy
Cc: Cain, Alexis; Siegel, Kathryn; Armitage, Julie; Rountree, Jillian
Subject: June 27 EPA/IEPA/Sterigenics meeting

Kathy,

Thank you again for your participation in a first, very productive conference call. We look forward to future meetings, including a presentation and a tour of the Willowbrook facility.

Here is our understanding of the commitments that we made on the call to provide information to you:

- The met data collected during our monitoring efforts in May 2018
- The met data used in the modeling
- The modeling plot files

Alexis Cain provided these in a separate email. Please let me know if there are remaining questions we can address.

Here is our understanding of the commitments that you made to provide information to us:

- Emissions calculations, including fugitive emissions (before and after construction)
- A review of the modeling parameters we used

- A review of the proposed OAQPS monitoring plan
- A description of operations, process flow, cycle times, facility map
- A timeline for the construction project, when available.

My staff will be in contact about scheduling a next meeting and tour.

Thank you,
-Ed

-Edward Nam, PhD
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/21/2018 4:33:11 PM
To: King, Suzanne [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8718f08e0b5343ec809b1c0f014cc2fa-SKing]
Subject: FW: Message from "R5-18-02"
Attachments: 2014 NATA Target List.xlsx

Hi Suzanne-- could you find contacts for the remaining three, not-crossed-out facilities on this list (Cook, Inc, Christ Hospital, Baxter Healthcare). Best would be a corporate VP for Environment, Health, Safety, whatever.
Thanks!

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/21/2018 1:36:25 PM
To: Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]
Subject: RE: Stack Testing

Thanks Ned—we really appreciate your help on this.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Shappley, Ned
Sent: Tuesday, August 21, 2018 8:18 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Stack Testing

Alexis,

I kind of expected this response. I will continue to work on the write-up for Illinois EPA on how to improve the measurement for future testing.

Thanks,
Ned

From: Cain, Alexis
Sent: Tuesday, 21 August, 2018 08:14
To: Shappley, Ned <Shappley.Ned@epa.gov>; Nash, Dave <Nash.Dave@epa.gov>; Mattison, Kevin <Kevin.Mattison@Illinois.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>; Sprague, Jeff <Jeff.Sprague@Illinois.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: FW: Stack Testing

FYI—Sterigenics' response on stack testing.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Monday, August 20, 2018 5:42 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: Stack Testing

Ed:

I just wanted to respond to you about our decision on the stack testing for the Willowbrook project.

We have double checked the NESHAP requirements and our permit. Because the upcoming stack test is required by law to determine compliance with our limits, we will be using the Method 18 as specified in the regulations and permit. The stack testing company we use has substantial experience testing stacks that emit low levels of EO, such as the Willowbrook stacks, but does not have the capabilities/equipment for Method 320. Giving that this is a compliance test, we are not comfortable using what for us is an experimental Method or alternative testers who likely have little or no experience in our sector. We are not opposed to evaluating Method 320 at some future date, but the experiments on its use for the industry seems like a topic that EPA should raise first with our trade organization, EOSA.

I also wanted to let you know that I will be on vacation the rest of this week but will be available for any issues that arise. I will try to monitor emails and phone calls but it might be best to reach me on my cell phone at 847.612.7266 if you have any questions or issues to discuss.

Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/21/2018 1:14:45 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]
Subject: EtO Company Contacts

I collected some contact names and numbers for the companies we will have to or may have to contact today. For some of the corporate contacts, I don't have direct numbers, and we'll have to start with an operator. I couldn't find a US corporate contact for Evonik—they're headquartered in Germany—but I do have the facility manager.

MEDLINE—Northfield IL HQ General #-- (847) 949-5500
Charlie Mills, CEO
Jim Abrams, COO
Facility contact Adriana Thurston
Director – SPT/NPS Operations
Sterile Procedure Tray
Medline Industries, Inc.
847-775-6093 (Phone)
224-441-0080 (Mobile)
athurston@medline.com

MEDTRONIC (HQ in Ireland; Operational HQ in Minneapolis)
General (MN) Number-- (763) 514-4000
Mike Genau—SVP and President, Americas Region.
LUANN PENDY-- SVP, Chief Quality and Regulatory Affairs Officer (I think she's in US office but not sure)
MDEQ's contact at the facility re: emissions has been Mr. Tom Campbell, Sterilization Engineer; 616-643-5563

STERIGENICS
Kathy Hoffman, SVP
KHoffman@sterigenics.com
630-928-1758

EVONIK (HQ in Germany, facility in MI)
Site Manager, JEFFREY LABROZZI, jeffrey.labrozzi@evonik.com. 608-868-8257
Facility Air Permit Contact SONDRA KLIPP-- Sondra.klipp@evonik.com, 608-868-8225

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/22/2018 5:19:40 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Sterigenics US LLC

Hi Ed—it's a one-time release of 12 pounds, Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Friday, June 22, 2018 11:38 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Sterigenics US LLC

Alexis,

It looks like in this IEPA resolution of enforcement case (p2 bullet 6), the facility emitted 12 pounds (it doesn't give date of release)

Deliberative Process / Ex. 5

Thanks
-Ed

From: Nam, Ed
Sent: Friday, June 22, 2018 10:39 AM
To: Sarah Marshall (marshall.sarah@epa.gov) <marshall.sarah@epa.gov>; Sara Breneman (breneman.sara@epa.gov) <breneman.sara@epa.gov>; Nathan Frank (frank.nathan@epa.gov) <frank.nathan@epa.gov>
Subject: FW: Sterigenics US LLC

Sara, Nathan,

Attached are the permit and most recent IEPA enforcement actions. I'll need some FAQs on this for my FAQ list. Please clear the text with IEPA. For example:

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Thanks
-Ed

From: Keppner-Bauman, Yasmine [mailto:Yasmine.Keppner-Bauman@Illinois.gov]
Sent: Friday, June 22, 2018 10:25 AM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Armitage, Julie <Julie.Armitage@Illinois.gov>
Subject: Sterigenics US LLC

Ed,

As requested, please see attached the most recently issued CAAPP permit for Sterigenics US LLC. The permit was issued June 8, 2015, and has an expiration date of June 8, 2020. Also attached are documents relative to the Illinois EPA's prior enforcement case with Sterigenics US LLC; the Violation Notice issued November 12, 2013, and the final order entered September 18, 2015.

Yasmine Keppner-Bauman
Compliance Analyst
Bureau of Air
217/524-0908

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/6/2018 3:36:00 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: OGI and ethylene oxide

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Dewees, Jason
Sent: Monday, August 06, 2018 10:21 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: OGI and ethylene oxide

It's not a question of whether it will see it. The question is whether it will see all the leaks that are policy/regulatorily/health effect relevant. So, if that's all you have available, then you can use it to find large leaks. You should just be careful assuming that no leaks found with OGI means there aren't leaks that could be significant (ie they are bigger than the emissions coming out of all the stacks or >100 in mil).

From: Sieffert, Margaret
Sent: Monday, August 06, 2018 11:16 AM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Dewees, Jason <Dewees.Jason@epa.gov>
Subject: RE: OGI and ethylene oxide

Hi Ned,

We had reached out to Cary Secrest about the FLIR GF320 which is what R5 has inhouse. According to Cary, the camera can see EtO. There was confusion about the camera prior to our meeting/tour and Sterigenics thought that it was only a heat sensing camera and asked us not to bring it. Our main thought in bringing the camera would be to see if it could be used to determine where their fugitive leaks are in the facility and outside the building. We are aware that the camera doesn't give you concentrations of what is being emitted but we were hoping to get a better sense of where they might have fugitives as currently they only use an industry agreed upon percentage and that is how they calculate fugitives.

-Margaret

From: Shappley, Ned
Sent: Monday, August 06, 2018 9:45 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Dewees, Jason <Dewees.Jason@epa.gov>
Subject: OGI and ethylene oxide

Margaret/Alexis,

I meant to follow-up with y'all after the call regarding the use of OGI for EtO leaks. We know that OGI will see an EtO leak but it likely will not be able to see this leak at the "action level" you need. The detection capabilities of the camera will depend on a number of factors, with the compound of interest and background temperature (ΔT) being the most important in this instance. Even in ideal situation, the lowest leak you could see would be in the neighborhood of 20-60 g/hr (375 – 1000 lbs/yr).

I just wanted to make you aware of the limitations of the camera. Also, I have included Jason Dewees with my group on this email in case you have any questions to the capabilities of the camera for this application. He is the technical lead on OGI measurement for OAQPS.

Thanks,

Ned Shappley | USEPA|OAQPS|AQAD|Measurement Technology Group
109 TW Alexander Drive (E143-02) | Research Triangle Park, NC 27711
email: shappley.ned@epa.gov | Phone (919)541-7903

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/10/2018 4:55:15 PM
To: Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]
Subject: RE: DRAFT Sterigenics News Release

Looks good.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Kelley, Jeff
Sent: Friday, August 10, 2018 11:31 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: RE: DRAFT Sterigenics News Release

Here's a clean version … at least for now, I'm Deliberative Process / Ex. 5

- Deliberative Process / Ex. 5

If there aren't any deal-breakers with this draft, I think we should go ahead and share with OAQPS and HQ public affairs (and Kurt and Cathy).

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Kelley, Jeff
Sent: Friday, August 10, 2018 11:14 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: RE: DRAFT Sterigenics News Release

Let me take the pen here to try to synthesize comments and send around a clean version.

Jeff Kelley
Director, Office of External Communications

U.S. EPA Region 5
ph: 312-353-1159

From: Cain, Alexis
Sent: Friday, August 10, 2018 11:08 AM
To: Rountree, Jillian <Rountree.Jillian@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: RE: DRAFT Sterigenics News Release

Some comments on the comments.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Rountree, Jillian
Sent: Friday, August 10, 2018 10:07 AM
To: Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: RE: DRAFT Sterigenics News Release

Hello,

Attorney Client & Deliberative / Ex. 5

Jill

ATTORNEY CLIENT PRIVILEGED; DELIBERATIVE

Jillian Rountree
Air and Radiation Division Detail Attorney
U.S. EPA Region 5
77 W. Jackson Blvd. (C-14J), Cube 18010
Chicago, Illinois 60604
312-353-3849
rountree.jillian@epa.gov

Some of my email messages and attachments contain information that is privileged, confidential, or prohibited from disclosure under applicable law. If you believe you may have received this message in error, please inform the sender immediately. Further, do not read, print, or distribute any messages or attachments received in error. Immediately delete and otherwise destroy any such messages and attachments. Thank you.

From: Nam, Ed
Sent: Friday, August 10, 2018 8:08 AM
To: Singer, Joshua <Singer.Joshua@epa.gov>

Cc: Furey, Eileen <furey.eileen@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Re: DRAFT Sterigenics News Release

There is a newer version with Cathy and Kuts additions. We will send around soon after cleaning it up a bit
Ed

Sent from my iPhone

On Aug 9, 2018, at 5:08 PM, Singer, Joshua <Singer.Joshua@epa.gov> wrote:

Ed and Eileen and Jill,

Please Attorney Client & Deliberative / Ex. 5
Attorney Client & Deliberative / Ex. 5 Thank you.

Josh Singer
U.S. EPA, Region 5
phone: 312-353-5069
singer.joshua@epa.gov

<image001.jpg>

EPA Working with Willowbrook, Ill., Company to Reduce Public Health Risk of Air Emissions

Attorney Client & Deliberative / Ex. 5

<DRAFT Sterigenics EtO Press Release Revised August 9.docx>

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/26/2018 6:18:09 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]
CC: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: Sterigenics Enforcement History
Attachments: Sterigenics Stack Test 12-12_13-16.pdf

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Monday, June 25, 2018 1:26 PM
To: Nam, Ed <nam.ed@epa.gov>; Marshall, Sarah <marshall.sarah@epa.gov>
Cc: Breneman, Sara <breneman.sara@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>; Damico, Genevieve <damico.genevieve@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Sterigenics Enforcement History

Attached is the 2016 stack test that David O. forwarded to us on June 20 along with tests from 2003 and 2005. I forwarded all the tests to Phuong on June 21.

-Margaret

From: Nam, Ed
Sent: Monday, June 25, 2018 1:21 PM
To: Marshall, Sarah <marshall.sarah@epa.gov>
Cc: Breneman, Sara <breneman.sara@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>; Damico, Genevieve <damico.genevieve@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Sterigenics Enforcement History

Sara, Sarah, Genevieve,

On today's call with Julie Armitage, she mentioned that there was a stack test conducted recently that showed compliance with the permit. Do we have access to this stack test? If so, can someone please get it? I'd like to know the date, and I'm sure Phuong can use it for her next round of modeling.

Thanks
-Ed

From: Marshall, Sarah
Sent: Friday, June 22, 2018 3:17 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Breneman, Sara <breneman.sara@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>; Damico, Genevieve

<damico.genevieve@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Sterigenics Enforcement History

Ed,
For the first one, I would put 2002 (the date of the AO) instead of 2004.

Sarah Marshall
Section Chief
Air Enforcement and Compliance Assurance Section (MI/WI)
U.S. Environmental Protection Agency, Region 5
(312) 886-6797

From: Nam, Ed
Sent: Friday, June 22, 2018 2:24 PM
To: Marshall, Sarah <marshall.sarah@epa.gov>
Cc: Breneman, Sara <breneman.sara@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>; Damico, Genevieve <damico.genevieve@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Sterigenics Enforcement History

Thanks Sarah for the quick and excellent summary. Here's how I shortened it on my timeline. (not sure we even need to include the ATT dry bed reactor request (#2)... I will port this to the FAQ if you are ok with my summary.

Milestone	Date
ARD enforcement action concludes with facility agreeing to install continuous monitoring system on aeration room vents	2004
ARD approves facility request to use ATT dry bed reactor when AAT scrubber is under repair or maintenance	2009
IEPA issues NOV for excess EtO emissions from Sterilization Chamber B in violation of CAAP permit requiring 99% reductions (also water and soil release)	11/12/13
IEPA issues CAAP permit, good for 5 years	6/8/15
IEPA/IAG resolved referred enforcement action: $50,000 penalty, site remediation plan completed.	9/8/15
EPA updated EtO from a "probable human carcinogen" to a "human carcinogen"	12/2016

From: Marshall, Sarah
Sent: Friday, June 22, 2018 11:35 AM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Breneman, Sara <breneman.sara@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>; Damico, Genevieve <damico.genevieve@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Sterigenics Enforcement History

I added the IEPA violations below.

Sarah Marshall
Section Chief
Air Enforcement and Compliance Assurance Section (MI/WI)

U.S. Environmental Protection Agency, Region 5
(312) 886-6797

From: Nam, Ed
Sent: Friday, June 22, 2018 10:44 AM
To: Marshall, Sarah <marshall.sarah@epa.gov>
Cc: Breneman, Sara <breneman.sara@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>
Subject: RE: Sterigenics Enforcement History

Thanks Sarah,

It looks like our emails crossed. Can you (or someone else) please add a brief summary of the IEPA enforcement actions that I sent you to the nice talking points below? I assume it corresponds to your last bullet. This is going into the FAQ, so it should be brief and consumable to the public and congressionals.

Thanks,
-Ed

From: Marshall, Sarah
Sent: Friday, June 22, 2018 10:37 AM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Breneman, Sara <breneman.sara@epa.gov>
Subject: Sterigenics Enforcement History

Ed,

There are two facilities in Illinois, Willowbrook and Schaumburg. Those are the only two facilities located in Region 5. There are other facilities in other regions. There is no enforcement history at Schaumburg.

At Willowbrook, EPA's last inspection was in 2002. A violation was found and an unilateral Administrative Order was issued to the facility to correct the following violations of 40 C.F.R. Part 63 Subpart O -Ethylene Oxide Emissions Standards for Sterilization Facilities:

- Failed to install and operate a continuous monitoring system to measure emissions and process parameters from the aeration room vents;
- Failed to monitor emissions from the aeration room; and
- Failed to maintain records.

The case was closed in 2004.

In 2009, there was a determination request submitted to EPA for approval to use the ATT dry bed reactor(SC-2) whenever the AAT Scrubber (SC-1) is under repair or maintenance, therefore a Revised AAT Dry Bed Monitoring Plan for Willowbrook 1 and 11 Facilities.

According to ECHO, at the Willowbrook facility, the last state FCE was in 2016. IEPA reported that there were deviations reported in the Title V certification.

IEPA settled an air enforcement case on 9/18/15 for violations at the Willowbrook facility. There were also violations related to a release of ethylene glycol into the soil and groundwater.

- On October 21, 2013, the facility released 12 pounds of ethylene oxide to the atmosphere.
- IEPA issued a violation notice on November 12, 2013 for the following violations:
    - Caused, threatened or allowed the discharge of ethylene oxide into the atmosphere from Sterilization Chamber B, so as to cause air pollution;
    - Failed to remove Sterilization Chamber B from service or take other actions to cease excess emissions;

    - Failed to reduce ethylene oxide by 99% during the event;
    - Failed to reduce volatile organic matter by 81% during the event.
- The facility paid a $50,000 penalty

There is no IEPA enforcement history at the Schaumburg facility.

Hope this helps.

Sarah Marshall
Section Chief
Air Enforcement and Compliance Assurance Section (MI/WI)
U.S. Environmental Protection Agency, Region 5
(312) 886-6797

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/18/2018 6:08:24 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]
CC: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: EtO Sterigenics

FYI

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Monday, June 18, 2018 1:07 PM
To: Ogulei, David <Ogulei.David@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: FW: EtO Sterigenics

Deliberative / Ex. 5

Thanks

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Monday, June 18, 2018 12:41 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: RE: EtO Sterigenics

Some responses to the questions below before I leave for the day.

From: Cain, Alexis
Sent: Monday, June 18, 2018 11:57 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: FW: EtO Sterigenics

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Monday, June 18, 2018 11:56 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>
Subject: FW: EtO Sterigenics

FYI. Questions to prepare for Wed.
-Ed

From: Payne, James
Sent: Monday, June 18, 2018 11:03 AM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Mooney, John <Mooney.John@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>; Thiede, Kurt <thiede.kurt@epa.gov>
Subject: RE: EtO Sterigenics

Thanks Ed. Very helpful. And would welcome input below. Jim

Regulatory requirements

- Deliberative / Ex. 5
-

Risk (George could you help answer these questions?)

- Deliberative / Ex. 5
-
-

Enforcement (Should AECAB help with this question. We have not specifically asked OECA to weigh in here. They are invited to our national calls but were not on the call when we shared the results to the other regions.)

Deliberative / Ex. 5

From: Nam, Ed
Sent: Monday, June 18, 2018 8:32 AM
To: Thiede, Kurt <thiede.kurt@epa.gov>; Payne, James <payne.james@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Williams, Felicia <Williams.Felicia@epa.gov>; Martinez, Isidra <Martinez.Isidra@epa.gov>
Cc: Mooney, John <Mooney.John@epa.gov>; Breneman, Sara <breneman.sara@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>; King, Suzanne <king.suzanne@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Subject: RE: EtO Sterigenics

Felicia, Isidra,

Attached is the briefing for the RA on Ethylene Oxide and Sterigenics.
This briefing is consistent with the elevation policy. We will present this in lieu of general, so we can cancel the general in the following hour.

Thanks
-Ed

-----Original Appointment-----
From: Thiede, Kurt
Sent: Tuesday, June 12, 2018 1:15 PM
To: Thiede, Kurt; Payne, James; Nam, Ed; Furey, Eileen; Cain, Alexis; Siegel, Kathryn; Bollweg, George; Compher, Michael; Olson, Erik; Shaffer, Loretta; Nwia, Jacqueline; Sieffert, Margaret
Subject: EtO Sterigenics
When: Wednesday, June 20, 2018 10:00 AM-10:45 AM (UTC-06:00) Central Time (US & Canada).
Where: RA's Large Conf. Rm.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 10/3/2018 4:02:00 PM
To: Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
CC: Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: what lab method was used for Willowbrook ethylene oxide

Good point, Michael. Deliberative / Ex. 5

Deliberative / Ex. 5

Regarding Motria's offer to review monitoring plans, I would pass that on to OAQPS, since they're in charge of the monitoring study.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Compher, Michael
Sent: Wednesday, October 03, 2018 10:55 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: what lab method was used for Willowbrook ethylene oxide

Margaret and Jackie – Deliberative / Ex. 5

Deliberative / Ex. 5

Katie or Alexis - feel free to provide your insights....

Michael Compher
Chief, Air Monitoring and Analysis Section
Region 5 Air and Radiation Division
U.S. Environmental Protection Agency
Phone: 312-886-5745

From: Caudill, Motria
Sent: Wednesday, October 03, 2018 10:33 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: Re: what lab method was used for Willowbrook ethylene oxide

We're getting a lot of follow-up inquiries, so I'm helping Mark with responses.

Please keep us in the loop about what is being done and timelines. I'm happy to offer any review or input on monitoring plans.

Has Sterigenics completed the stack test? Is OAQPS also modeling other facilities in R5 and other Regions? May we have a contact name for that effort?

Thank you!

From: Sieffert, Margaret
Sent: Wednesday, October 3, 2018 6:38 AM
To: Whipple, Wayne; Caudill, Motria
Cc: Nwia, Jacqueline; Compher, Michael; Cain, Alexis
Subject: RE: what lab method was used for Willowbrook ethylene oxide

Are you filling in for Michelle? Yes ERG lab and TO-15 used. Plans change pretty frequently and no plan yet on monitoring (except that there will be some sort of monitoring). OAQPS wants to remodel first after Sterigenics sends EPA their recent stack test results. Let Jackie or I know if you have questions.

-Margaret

From: Whipple, Wayne
Sent: Tuesday, October 02, 2018 4:25 PM
To: Caudill, Motria <caudill.motria@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: what lab method was used for Willowbrook ethylene oxide

I am confident it was ERG that did it. I had spoken with them about 6 months or more ago about their method and had received a canister of their standard to test our current methodology out. Right now our detection limits (estimated if we were to try it) are too high, around 500 pptv. The column in the instrument has water in it so I am hoping switching to another column will work. We have been stagnant because our group has shrunk to two full time people, we lost two chemists to other divisions over the past couple of months. I have to maintain the current methods and have little time for more. Our data is backed up and growing more so.

I really do wish I could help. I have lots of ideas for getting it working and we have a standard in house now for the compound but no people to do anything about it.

Wayne

Wayne Whipple, Ph.D.
US EPA R5 CRL
Chemist
REG; 05; RMD

312-353-9063 Work
Whipple.Wayne@epa.gov
536 S Clark St
10th Floor
Chicago, IL 60605

From: Caudill, Motria
Sent: Tuesday, October 02, 2018 3:49 PM
To: Whipple, Wayne <whipple.wayne@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: what lab method was used for Willowbrook ethylene oxide

Hi guys. I'm pinch hitting on Sterigenics stuff this month. None of the documents I've received indicate who did the lab analysis for May 16-18 sampling and how? Mark thinks it was ERG. Was it TO-15 or some modification? What is the plan method-wise for ethylene oxide moving forward? Thanks.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 3/29/2018 9:00:49 PM
To: Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]
Subject: RE: April 2, 2018 1:1 w/ GB, 8:30 am

Thanks George—it's possible I may have to reschedule this for later in the morning. I'll let you know Monday am.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Bollweg, George
Sent: Thursday, March 29, 2018 3:59 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: April 2, 2018 1:1 w/ GB, 8:30 am

FYI

_____

April 2, 2017
Current Toxics and Global Atmosphere Section tasks – George Bollweg

Deliberative Process / Ex. 5

2. Toxicology/risk assessment support

Deliberative Process / Ex. 5

- **Ethylene oxide (EtO)** initiative: with Margaret Sieffert and Jackie Nwia, will visit potential Willowbrook air monitoring sites this week

Deliberative Process / Ex. 5

3. Ongoing miscellaneous:

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/14/2018 1:37:50 PM
To: Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]
CC: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]
Subject: FW: Confidential Internal Deliberative - Sterigenics
Attachments: DRAFT 20180809-sterigenic_news_release-v2.1_ATSDR.DOCX

Hi Darcie—The latest version of the Sterigenics news release is attached. Your comments on any aspect of it are welcome **Deliberative / Ex. 5** Anything you could suggest on that would be much appreciated.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Monday, August 13, 2018 5:16 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Confidential Internal Deliberative - Sterigenics

Thanks Jeff.

Mark Johnson had the following edits to the news release. We concur with edits.

Thanks
-Ed

From: Kelley, Jeff
Sent: Monday, August 13, 2018 1:43 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: FW: Confidential Internal Deliberative - Sterigenics
Importance: High

Not sure what edits Kurt made, but these should be considered the current versions, I guess

---

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Thiede, Kurt
Sent: Monday, August 13, 2018 9:53 AM
To: Kelley, Jeff <kelley.jeff@epa.gov>
Subject: FW: Confidential Internal Deliberative - Sterigenics
Importance: High

Can you please send these versions on to NG? I made a few tweaks to the press release and comms plan based on conversations at the end of last week.

Thanks,
Kurt

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/20/2018 9:23:37 PM
To: Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]
Subject: FW: willowbrook draft EtO note?

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Thursday, June 14, 2018 8:24 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: willowbrook draft EtO note?

Yes that is correct.

From: Cain, Alexis
Sent: Thursday, June 14, 2018 8:04 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: willowbrook draft EtO note?

So: **Deliberative / Ex. 5** Right?

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Thursday, June 14, 2018 7:50 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: willowbrook draft EtO note?

Deliberative / Ex. 5

From: Cain, Alexis
Sent: Wednesday, June 13, 2018 3:11 PM
To: Marrero, Jeanette <Marrero.Jeanette@epa.gov>; Batka, Sheila <Batka.Sheila@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: FW: willowbrook draft EtO note?

Hi Jeanette and Sheila—thanks for your help in thinking about how indoor air levels of EtO might be different than outdoor air levels, and how HVAC might impact that. Have your heard back from your HQ contact?

I don't want to say anything beyond what is supportable—the bolded statement below (fourth paragraph) is an attempt to summarize our best estimate of the likely situation; please let me know if you think this is accurate. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Bollweg, George
Sent: Wednesday, June 13, 2018 10:01 AM
To: Cain, Alexis <cain.alexis@epa.gov>

Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: willowbrook draft EtO note?

I was re-reading Alexis' Tuesday, June 12, 2018 8:28 AM draft note for Willowbrook below and had a few edits (in red).

From: Bollweg, George
Sent: Tuesday, June 12, 2018 8:58 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: willowbrook draft EtO note?

IMO your revision is much better for present purposes

From: Cain, Alexis
Sent: Tuesday, June 12, 2018 8:28 AM
To: Bollweg, George <bollweg.george@epa.gov>
Subject: RE: willowbrook draft EtO note?

Thanks George—I think it might be too technical. Let me know what you think of this version, I'll share it more broadly after I get your feedback.

Draft note to EPA Willowbrook staff re short term EtO air monitoring

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Bollweg, George
Sent: Monday, June 11, 2018 3:46 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: willowbrook draft EtO note?

Not sure if this is headed in the right direction. Or consistent with Margaret's draft?

_____

June 11, 2018
Draft note to EPA Willowbrook staff re short term EtO air monitoring

Deliberative Process / Ex. 5

Message

From: Sasser, Erika [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=477638FE84004800BFDF8E62FE3CAFC8-ESASSER]
Sent: 6/22/2018 5:39:22 PM
To: Palma, Ted [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f7bef4a695c944f089bf3e14f199f8aa-Palma, Ted]; Shelow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3859abc25e634d418478f3d3ca569c79-Shelow, David]; Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]
CC: Rimer, Kelly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=123a21a46d0e4e53a590798cdcc3fb47-KRIMER]; Wayland, Richard [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d69f0a870909402ebd66847003aa6437-Wayland, Chet]; Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
Subject: RE: Question

I did a quick google search—this facility is 9 miles from Sterigenics, and has been flagged by several environmental groups as high-risk facility for EtO (see, e.g., https://www.greenpeace.org/usa/the-environmentalist-12-chemical-facilities-putting-the-most-americans-at-risk/). Note the R5 modeling results below—suggest that the area may have more than one source contributing to EtO risk.

From: Palma, Ted
Sent: Friday, June 22, 2018 1:36 PM
To: Shelow, David <Shelow.David@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>; Wayland, Richard <Wayland.Richard@epa.gov>
Subject: Re: Question

I found in NATA,

it does emit EtO, currently about 0.2 tpy, its a Synthetic Minor, Polyols manufacturers; permitted for 2.8 TPY HAP (EtO).

It is not currently (2014 NATA) contributing to a tract with a risk greater than 100 in a M

Ted Palma

USEPA
OAQPS/HEID/ATAG
MD C539-02
RTP, NC 27711

From: Shelow, David
Sent: Friday, June 22, 2018 1:25 PM
To: Sasser, Erika; Shappley, Ned
Cc: Rimer, Kelly; Palma, Ted; Wayland, Richard
Subject: RE: Question

I think they are a chemical company making many product. Ted is going to look into it on NATA to see if they are a source of ETO

David M. Shelow
Physical Scientist
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Ambient Air Monitoring Group C304-06
Research Triangle Park, NC 27711
Phone: 919-541-3776
Fax:: 919-541-1903
Email: shelow.david@epa.gov

From: Sasser, Erika
Sent: Friday, June 22, 2018 1:21 PM
To: Shelow, David <Shelow.David@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Wayland, Richard <Wayland.Richard@epa.gov>
Subject: RE: Question

Thanks, Dave. All- what is Pelron? Is this EtO?

From: Shelow, David
Sent: Friday, June 22, 2018 12:33 PM
To: Sasser, Erika <Sasser.Erika@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Wayland, Richard <Wayland.Richard@epa.gov>
Subject: RE: Question

Hi Erika,
Here are a couple of items for you

1. The actual results spreadsheet
2. Time series plot of 12 hour sample and grab samples. (Will be another email to follow)

Below are the modeling results that Region 5 provided to me:

Deliberative Process / Ex. 5

David M. Shelow
Physical Scientist
U.S. Environmental Protection Agency

Office of Air Quality Planning and Standards
Ambient Air Monitoring Group C304-06
Research Triangle Park, NC 27711
Phone: 919-541-3776
Fax:: 919-541-1903
Email: shelow.david@epa.gov

From: Sasser, Erika
Sent: Friday, June 22, 2018 12:24 PM
To: Shelow, David <Shelow.David@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>
Subject: Question
Importance: High

Can someone provide the following info:

Deliberative Process / Ex. 5

Any specifics you have would be helpful. Thanks

Message

From: Shappley, Ned [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5FC7FDE372054AB5AC38F24B9072B73D-SHAPPLEY, N]
Sent: 9/13/2018 8:07:35 PM
To: Hemby, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6deabe7daccd45f3b32a6291293686d8-JHEMBY]
CC: Johnson, Steffan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eba5c0dfc5fc4593afa62ce7c3dd6f02-Johnson, Steffan]; Wayland, Richard [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d69f0a870909402ebd66847003aa6437-Wayland, Chet]
Subject: FW: Stack Testing - Sterigenics

FYI

From: Koerber, Mike
Sent: Thursday, 13 September, 2018 16:06
To: Shappley, Ned <Shappley.Ned@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Hemby, James <Hemby.James@epa.gov>; Wayland, Richard <Wayland.Richard@epa.gov>
Subject: FW: Stack Testing - Sterigenics

Ned – Your presence has been requested. I am supportive of your involvement, assuming you are able to travel during the days in question.

Mike

From: Nam, Ed
Sent: Thursday, September 13, 2018 2:33 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>
Subject: RE: Stack Testing - Sterigenics

Hi Mike,

Do you support Ned Shappley coming to witness the stack test? I think my staff have reached out to him directly.

Deliberative Process / Ex. 5

Thanks,
-Ed

From: Koerber, Mike
Sent: Thursday, September 13, 2018 11:04 AM
To: Nam, Ed <nam.ed@epa.gov>
Subject: Re: Stack Testing - Sterigenics

Thanks

Sent from my iPhone

On Sep 13, 2018, at 11:56 AM, Nam, Ed <nam.ed@epa.gov> wrote:

FYI: Stack testing now scheduled for 9/20-21

From: Armitage, Julie [mailto:Julie.Armitage@Illinois.gov]
Sent: Thursday, September 13, 2018 9:18 AM
To: Nam, Ed <nam.ed@epa.gov>
Subject: FW: Stack Testing - Sterigenics

Fyi. Likely dates. Kevin has indicated he is available.

From: Hoffman, Kathy <KHoffman@sterigenics.com>
Sent: Wednesday, September 12, 2018 6:10 PM
To: Mattison, Kevin <Kevin.Mattison@Illinois.gov>
Cc: Armitage, Julie <Julie.Armitage@Illinois.gov>; Wagner, Kevin <KWagner@sterigenics.com>
Subject: [External] Stack Testing - Sterigenics

Kevin:

Thank you again for your efforts in getting us an approved test protocol last week. I realize that you are out of the office on vacation but I thought it would be good to confirm stack test dates in the event that you might be checking emails. Are you available next Thursday afternoon (September 20th) and Friday morning (September 21st) for the stack testing for the backvent emissions at our Willowbrook 1 and Willowbrook 2 facilities?

We are also available for any further questions or discussions needed on the test protocol, testing conditions, and/or final report expectations prior to this test.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

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The content image001.jpg of type has been blocked.

Message

From: Shappley, Ned [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5FC7FDE372054AB5AC38F24B9072B73D-SHAPPLEY, N]
Sent: 9/14/2018 8:27:16 PM
To: Weinstock, Lewis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=df30e068efb24a24b35d63be0596ad9b-LWEINS02]; Johnson, Steffan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eba5c0dfc5fc4593afa62ce7c3dd6f02-Johnson, Steffan]; Hemby, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6deabe7daccd45f3b32a6291293686d8-JHEMBY]
Subject: FW: EtO action items

FYI

From: Koerber, Mike
Sent: Friday, 14 September, 2018 10:31
To: Caparoso, Jennifer <Caparoso.Jennifer@epa.gov>; Lassiter, Penny <Lassiter.Penny@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Cortelyou-Lee, Jan <Cortelyou-Lee.Jan@epa.gov>
Cc: Sasser, Erika <Sasser.Erika@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Wayland, Richard <Wayland.Richard@epa.gov>
Subject: EtO action items

After talking with Clint yesterday, he's asked that we do the following:

- Set-up meeting/phone call between OAR and Sterigenics. Please reach out the appropriate person in Sterigenics, such as Kathy Hoffman – or do you have another contact? It would be good to have this meeting next week, if possible.

- Set-up meeting/phone call between OAR and ATSDR. This should be with folks at the ATSDR Headquarters level. This meeting, too, would be good to have next week, if possible.

- Begin to get ready for the small meeting with elected officials in Chicago, which will possibly be next week. For example, let's draft our plan for what we want to discuss and appropriate messaging. Also, Clint just received a draft pager from ORD on their IRIS assessment, which he will share with us. He's considering whether ORD should be part of this meeting, but will need to identify an appropriate ORD POC.

Deliberative Process / Ex. 5

Please let me know if you have questions about any of this.

Mike

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 10/17/2017 2:11:49 PM
To: Houyoux, Marc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=85f15bdaeaf34a57b3448a775cada35d-Houyoux, Marc]; Hemby, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6deabe7daccd45f3b32a6291293686d8-JHEMBY]
Subject: meeting on ethylene-oxide related activites with Mike Koerber is tomorrow at 1pm (1-2)
Attachments: EtO Pager for Mike K and DDs 10 05 17.docx

Importance: High

Marc and James

I just noticed that no one from AQAD management is on the invitation for tomorrow's briefing with Mike Koerber on ethylene oxide and there are several AQAD staff participating in this effort (Dave Shelow, Ray Merrill, and me).

The purpose is to update Mike on the Region 2-led work group and work to review the emissions and suggest future work.

The latest one-pager is attached.

The meeting participants:

Koerber, Mike <Koerber.Mike@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Shelow, David <Shelow.David@epa.gov>; Lavoie, Tegan <lavoie.tegan@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>; Bremer, Kristen Bremer.Kristen@epa.gov

Cc: Alston, Lala <Alston.Lala@epa.gov>; Shryock, Alice <shryock.alice@epa.gov>; Mozingo, Kristal <Mozingo.Kristal@epa.gov>; Joseph, Wanda <joseph.wanda@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

Message

From: Wayland, Richard [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D69F0A870909402EBD66847003AA6437-WAYLAND, CHET]
Sent: 6/26/2018 11:39:05 PM
To: Hemby, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6deabe7daccd45f3b32a6291293686d8-JHEMBY]
Subject: Fwd: NATA Results: Materials in prep for tomorrow's briefing with Bill W
Attachments: 2014 NATA Results Briefing 06_27_18.pptx; ATT00001.htm

Richard A. "Chet" Wayland
Sent from my iPhone

Begin forwarded message:

From: "South, Peter" <South.Peter@epa.gov>
To: "Harnett, Bill" <Harnett.Bill@epa.gov>, "Koerber, Mike" <Koerber.Mike@epa.gov>, "McKinney, Voronina" <mckinney.voronina@epa.gov>, "OAQPS WOPS" <OAQPS_WOPS@epa.gov>, "OAR Briefings" <OAR_Briefings@epa.gov>
Cc: "Sasser, Erika" <Sasser.Erika@epa.gov>, "Langdon, Robin" <Langdon.Robin@epa.gov>, "Houyoux, Marc" <Houyoux.Marc@epa.gov>, "Jones, Rhea" <Jones.Rhea@epa.gov>, "Mozingo, Kristal" <Mozingo.Kristal@epa.gov>, "Wayland, Richard" <Wayland.Richard@epa.gov>, "Bremer, Kristen" <Bremer.Kristen@epa.gov>, "Tsirigotis, Peter" <Tsirigotis.Peter@epa.gov>, "Koerber, Mike" <Koerber.Mike@epa.gov>, "Harnett, Bill" <Harnett.Bill@epa.gov>, "Riha, Kristin" <Riha.Kristin@epa.gov>, "Smith, Darcie" <Smith.Darcie@epa.gov>
Subject: NATA Results: Materials in prep for tomorrow's briefing with Bill W

I have attached the briefing materials in prep for tomorrow's NATA meeting with Bill.

Please call me or Mike with any questions relating to this information.

Thank you.

Pete South
OAR/OAQPS/IO
U.S. EPA
office: 919 541-5359
cell: 919 599-7213

Message

From: Sasser, Erika [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=477638FE84004800BFDF8E62FE3CAFC8-ESASSER]
Sent: 6/26/2018 3:40:54 PM
To: Wayland, Richard [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d69f0a870909402ebd66847003aa6437-Wayland, Chet]; Hemby, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6deabe7daccd45f3b32a6291293686d8-JHEMBY]
CC: Koerber, Mike [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9c513901d4fd49f9ab101a6f7a7a863e-Koerber, Mike]; Lassiter, Penny [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c3f6bf2e31d4492b9658b7c5c1583c09-PLASSITE]; Jones, Rhea [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8d213054092e4312bf031a52d13aafb8-RJONES02]; Langdon, Robin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8dfd5fbd46a7494c82e49aeb435bfa8d-Langdon, Robin]
Subject: FW: Monitoring Options for R5

FYI—happy to set this up if you can tell us who needs to be there. We might want to have SPPD present also.

From: Cain, Alexis
Sent: Tuesday, June 26, 2018 11:29 AM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Marcus, Danny <marcus.danny@epa.gov>
Cc: Sasser, Erika <Sasser.Erika@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Jones, Rhea <Jones.Rhea@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Langdon, Robin <Langdon.Robin@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Subject: RE: Monitoring Options for R5

Thanks Mike. This is great. **Deliberative Process / Ex. 5**

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5 Could we find a time? Not sure who on your end needs to be involved—Margaret is essential on our end, and she's available except for say 11:45-12:15 Central time. I'd like to participate if possible as well as Danny Marcus, but I'm not essential.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Koerber, Mike
Sent: Monday, June 25, 2018 4:12 PM
To: Nam, Ed <nam.ed@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Sasser, Erika <Sasser.Erika@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Jones, Rhea <Jones.Rhea@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Langdon, Robin <Langdon.Robin@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Subject: Monitoring Options for R5

As a follow-up to conversations last week, attached please find our thoughts about monitoring. Let me know if you have any questions. If you wish, then we'd be happy to talk through this on Tuesday.

Mike

Message

From: Houyoux, Marc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=85F15BDAEAF34A57B3448A775CADA35D-HOUYOUX, MARC]
Sent: 8/1/2017 3:46:51 PM
To: Wayland, Richard [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d69f0a870909402ebd66847003aa6437-Wayland, Chet]
CC: Hemby, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6deabe7daccd45f3b32a6291293686d8-JHEMBY]
Subject: FW: EtO Pager for Mike K and DDs 08 01 17.docx
Attachments: EtO Pager for Mike K and DDs 08 01 17.docx

FYI

Marc Houyoux
Group Leader
Emissions Inventory and Analysis Group
EPA/OAQPS/AQAD
919-541-3649

From: Rimer, Kelly
Sent: Tuesday, August 01, 2017 11:24 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>; Houyoux, Marc <Houyoux.Marc@epa.gov>
Subject: EtO Pager for Mike K and DDs 08 01 17.docx

All,

Here is the final pager for the mtg today on EtO. Thanks for your work pulling this together.

Kelly

Message

From: Hemby, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6DEABE7DACCD45F3B32A6291293686D8-JHEMBY]
Sent: 10/22/2018 2:48:33 PM
To: Johnson, Steffan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eba5c0dfc5fc4593afa62ce7c3dd6f02-Johnson, Steffan]; Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]
Subject: FW: Sterigenics US LLC

James Hemby | Associate Director, Air Quality Assessment Division | Office of Air Quality Planning & Standards | U.S. EPA | Mail Code C304-02 | RTP, NC 27711 | 919.541.5459 (desk) | 919.699.8040(mobile)

From: Fox, Tyler
Sent: Monday, October 22, 2018 9:46 AM
To: Hemby, James <Hemby.James@epa.gov>
Subject: FW: Sterigenics US LLC

FYI

From: Koerber, Mike
Sent: Monday, October 22, 2018 8:14 AM
To: Wayland, Richard <Wayland.Richard@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Fox, Tyler <Fox.Tyler@epa.gov>
Subject: RE: Sterigenics US LLC

Thanks, Chet. Deliberative Process / Ex. 5

Deliberative & Attorney Client / Ex. 5

Mike

From: Wayland, Richard
Sent: Monday, October 22, 2018 7:55 AM
To: Woods, Clint <woods.clint@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Fox, Tyler <Fox.Tyler@epa.gov>
Subject: FW: Sterigenics US LLC

Clint,

Deliberative & Attorney Client / Ex. 5

Thanks
Chet

Richard A. "Chet" Wayland | Director | Air Quality Assessment Division - Mail Code C304-02 | Office of Air Quality Planning & Standards | U.S. Environmental Protection Agency | Research Triangle Park, NC 27711 | Desk: 919-541-4603 | Cell: 919-606-0548 |

From: Kim, John J. [mailto:John.J.Kim@Illinois.gov]
Sent: Thursday, October 11, 2018 2:25 PM
To: Wayland, Richard <Wayland.Richard@epa.gov>
Subject: Sterigenics US LLC

Thank you for taking time to speak with me on the phone today. To recap, my request was for a phone call with you or your staff so that interested government representatives in Illinois (from the Illinois EPA and the Illinois Attorney General's Office) can better understand what the scope and parameters of modeling to be done based on recent stack test results from the Sterigenics facility in Willowbrook, Illinois.

We are interested in learning about what goals are being pursued, estimates of timelines, relation of modeling to ambient air modeling, and related subjects. This would help greatly with the State's efforts to effectively respond to the conditions at the Sterigenics facility in an appropriate manner.

I look forward to hearing from you.

John K.

- -

John J. Kim
Chief Legal Counsel
Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, IL 62794-9276
217.785.8628
217.782.9807 (Fax)
E-mail: john.j.kim@illinois.gov

State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all attachments. Receipt by an unintended recipient does not waive attorney-client privilege, attorney work product privilege, or any other exemption from disclosure.

Message

From: Hemby, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6DEABE7DACCD45F3B32A6291293686D8-JHEMBY]
Sent: 10/17/2018 8:10:26 PM
To: Johnson, Steffan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eba5c0dfc5fc4593afa62ce7c3dd6f02-Johnson, Steffan]
Subject: FW: EtO Overview
Attachments: Sampling and Modeling Plan - EtO - Sterigenics Willowbrook_Oct 17.docx; ATT00001.htm

James Hemby | Associate Director, Air Quality Assessment Division | Office of Air Quality Planning & Standards | U.S. EPA | Mail Code C304-02 | RTP, NC 27711 | 919.541.5459 (desk) | 919.699.8040(mobile)

From: Wayland, Richard
Sent: Wednesday, October 17, 2018 4:10 PM
To: Fox, Tyler <Fox.Tyler@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Thurman, James <Thurman.James@epa.gov>; Hemby, James <Hemby.James@epa.gov>
Subject: Fwd: EtO Overview

FYI

Richard A. "Chet" Wayland
Sent from my iPhone

Begin forwarded message:

> **From:** "Koerber, Mike" <Koerber.Mike@epa.gov>
> **Date:** October 17, 2018 at 3:41:13 PM EDT
> **To:** "Woods, Clint" <woods.clint@epa.gov>
> **Cc:** "Lewis, Josh" <Lewis.Josh@epa.gov>, "Wayland, Richard" <Wayland.Richard@epa.gov>, "Smith, Darcie" <Smith.Darcie@epa.gov>, "Rimer, Kelly" <Rimer.Kelly@epa.gov>, "Davis, Alison" <Davis.Alison@epa.gov>, "Bremer, Kristen" <Bremer.Kristen@epa.gov>
> **Subject: EtO Overview**
>
> Clint: Here is the 1-page summary you requested the other day. Please let me know if you have any comments or questions.
>
> Mike

Message

From: Hemby, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6DEABE7DACCD45F3B32A6291293686D8-JHEMBY]
Sent: 10/17/2018 3:34:40 PM
To: Fox, Tyler [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=021c57f288da44738d9dea325aadad85-TFOX]
Subject: FW: Sampling and Modeling Plan - EtO - Sterigenics Willowbrook .docx
Attachments: Sampling and Modeling Plan - EtO - Sterigenics Willowbrook .docx

James Hemby | Associate Director, Air Quality Assessment Division | Office of Air Quality Planning & Standards | U.S. EPA | Mail Code C304-02 | RTP, NC 27711 | 919.541.5459 (desk) | 919.699.8040(mobile)

From: Wayland, Richard
Sent: Wednesday, October 17, 2018 11:34 AM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>
Cc: Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Thurman, James <Thurman.James@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Hemby, James <Hemby.James@epa.gov>
Subject: Sampling and Modeling Plan - EtO - Sterigenics Willowbrook .docx

Mike,

Here is the 1-pager that Clint requested to share with Alec in IL prior to any call we might have with technical staff on the modeling and monitoring. If you are comfortable with this version, please share with Clint.

Thanks
Chet

Message

From: Nam, Ed [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A2653F1DDD59470688BA557DD84D9690-NAM, ED]
Sent: 8/6/2018 8:41:02 PM
To: Perez, Idalia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=03b7a08fdfbe4934911f17550d78491d-IPEREZ]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]; Koerber, Mike [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9c513901d4fd49f9ab101a6f7a7a863e-Koerber, Mike]
Subject: RE: Special Purpose Call: NATA - Next steps on EtO facilities
Attachments: ATSDR Sterigenics EtO Consult Letter-final.pdf

Hi Idalia,

Attached is the ATSDR letter for Region 5's update on Wednesday's special purpose call on EtO. I may not be able to make this meeting as I'll be out of the office, but Katie and Eileen should be able to cover the topic well.

Here is a little blurb that goes along with the letter to provide some context:

Deliberative Process / Ex. 5

Thanks,
-Ed

From: Perez, Idalia
Sent: Friday, August 03, 2018 4:10 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Subject: RE: Special Purpose Call: NATA - Next steps on EtO facilities

Hi Ed,

Mike K. mentioned the letter to me earlier. Please send to me and I will share.

Thanks,
-Idalia

Idalia M. Pérez, Ph.D. | OAR Lead Region Coordinator
U.S. Environmental Protection Agency – Region 9

75 Hawthorne St. (AIR-1), San Francisco, CA 94105
P: 415.972.3248 | email: perez.idalia@epa.gov
OAR Lead Region SharePoint Site

Our mission is to protect human health and the environment.

From: Nam, Ed
Sent: Friday, August 03, 2018 2:00 PM
To: Perez, Idalia <Perez.Idalia@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: Special Purpose Call: NATA - Next steps on EtO facilities

Idalia,

I understand that the other Regions would like to see the ATSDR letter re: our ethylene oxide facility in Region5. Mike Koerber informed me that I could distribute it for this upcoming Wednesday meeting. Would you like me to send it out prior to the meeting, or shall I send it to you to send out?

By the way, I am out on this day and may have to miss the meeting. If I do miss it, my Branch chief Katie Siegel or my Deputy Eileen Furey should be able to talk about the letter and present any updates from Region 5 on this issue.

Thanks
-Ed

-----Original Appointment-----
From: Perez, Idalia
Sent: Tuesday, July 31, 2018 10:48 AM
To: Perez, Idalia; Air Division Directors and Deputies; Koerber, Mike; Whitlow, Jeff; Smith, Darcie; Sasser, Erika; Jones, Rhea; Rimer, Kelly
Cc: Filippelli, John; Stenger, Wren; Smith, John; Wortman, Eric; Hestmark, Martin; Smith, Mark A.
Subject: Special Purpose Call: NATA - Next steps on EtO facilities
When: Wednesday, August 08, 2018 1:00 PM-2:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Line 866-299-3188 code: Personal Email / Ex. 6

This is a follow-up discussion to yesterday's ADD call.

Appointment

From: Nam, Ed [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A2653F1DDD59470688BA557DD84D9690-NAM, ED]
Sent: 9/27/2018 2:17:29 PM
To: Koerber, Mike [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9c513901d4fd49f9ab101a6f7a7a863e-Koerber, Mike]; Rimer, Kelly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=123a21a46d0e4e53a590798cdcc3fb47-KRIMER]

Subject: FW: Sterigenics de-briefing with OAQPS
Location: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Start: 9/27/2018 7:00:00 PM
End: 9/27/2018 8:00:00 PM
Show Time As: Tentative

Mike, Kelly,

I understand that Ned has already briefed you on his portion of the agenda, however we have information to report as well and would like you there for that portion of the meeting. Feel free to come to either the first or second half of the meeting for our update.

Thanks
-Ed

-----Original Appointment-----
From: Sieffert, Margaret
Sent: Wednesday, September 26, 2018 8:45 AM
To: Sieffert, Margaret; Nam, Ed; Siegel, Kathryn; Cain, Alexis; Nwia, Jacqueline; Shappley, Ned
Subject: Sterigenics de-briefing with OAQPS
When: Thursday, September 27, 2018 2:00 PM-3:00 PM (UTC-06:00) Central Time (US & Canada).
Where: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Conference Line Personal Email / Ex. 6 Code Personal Email / Ex. 6

Message

From: Dewees, Jason [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=38CC35D204824B6BB3FB95693F7316EA-DEWEES, JASON]
Sent: 7/30/2018 4:56:53 PM
To: Caparoso, Jennifer [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=78412d4056534ef288fb8ce390b4bf17-Caparoso, J]; Lavoie, Tegan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eb301a7c4e8f47ef898c1dab1dcf4e3b-Lavoie, Teg]
Subject: FW: Sterigenics update
Attachments: 18.07.18 - USEPA Process Overview Presentation - V2.pptx

Not sure whether you got this already **Deliberative Process / Ex. 5**

From: Shappley, Ned
Sent: Monday, July 30, 2018 12:25 PM
To: Dewees, Jason <Dewees.Jason@epa.gov>
Subject: FW: Sterigenics update

FYI

From: Sieffert, Margaret
Sent: Monday, 30 July, 2018 10:12
To: Smith, Darcie <Smith.Darcie@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Subject: Sterigenics update

Darcie, Jon, and Ned,

Attached is the presentation given to several R5 and IEPA staff during R5's July 18th visit to Sterigenics in Willowbrook. The original presentation they sent had confidential on it so we had to double check with them and confirmed the presentation was not CBI and therefore they revised it and removed the confidential. The back vent project was completed last Friday, July 27. The stack tests haven't been scheduled yet nor have they agreed to do the stack tests suggested by OAQPS. Sterigenics wants to hold one call to talk about their questions related to monitoring, stack testing methods and modeling. Considering the stack testing methods were suggested by OAQPS, we would like to invite you to the call to help answer any questions they may have. Let me know if you would like to be on the call and I will forward you the suggested dates and times. Kathy Hoffman, our contact at Sterigenics, is very involved in the Ethylene Oxide Sterilizer Association. She was president for a long time. She recently suggested during a call on Friday to confirm completion of their back vent project that there might be opportunities to address EtO issues on an industry-wide basis through them. If these opportunities are offered we will keep you updated and will invite you to participate.

Other items we learned during our meeting/tour that answer some questions you have asked in the past:

- By the end of this year, all their US facilities will have completed a back vent project and routing emissions to a scrubber. The only one left after Willowbrook is completed is the Salt Lake City, UT facility.
- Willowbrook I has 15 chambers
- Willowbrook II has 4 chambers
- Have ¼ pallet to 26 pallet chambers
- They operate 24/7 and have 1 week shutdown a year
- The employee shifts are 12 hours long and they cycle their days. On a couple then off a couple.
- The cycle times range from 8 hours to 20 hours depending on the product. Currently they have 4 chambers that are underutilized here. Not all chambers are operating at one time.
- EtO comes from one supplier Arc Chemical (Balchem Corporation) out of either facility in Verona, MO or outside Charleston, South Carolina. They get weekly deliveries but CA gets more frequent deliveries.

Let me know if you have any additional questions,
Margaret

Message

From: Dewees, Jason [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=38CC35D204824B6BB3FB95693F7316EA-DEWEES, JASON]
Sent: 6/14/2018 3:14:34 PM
To: Caparoso, Jennifer [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=78412d4056534ef288fb8ce390b4bf17-Caparoso, J]; Lavoie, Tegan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eb301a7c4e8f47ef898c1dab1dcf4e3b-Lavoie, Teg]
CC: Shine, Brenda [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=af5901af23c444f8ae77220210db12e2-BSHINE]
Subject: EtO Ambient Sampling
Attachments: FW: Sampling Plan - Still making revisions on the QAPP; FW: EtO monitoring; FW: Sterigenics_QAPP_1.0; FW: R5 EtO Sampling Plan

Message

From: Shelow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3859ABC25E634D418478F3D3CA569C79-SHELOW, DAVID]
Sent: 6/14/2018 2:03:39 PM
To: Dewees, Jason [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=38cc35d204824b6bb3fb95693f7316ea-Dewees, Jason]
Subject: FW: EtO monitoring

David M. Shelow
Physical Scientist
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Ambient Air Monitoring Group C304-06
Research Triangle Park, NC 27711
Phone: 919-541-3776
Fax:: 919-541-1903
Email: shelow.david@epa.gov

From: Sieffert, Margaret
Sent: Thursday, March 08, 2018 12:20 PM
To: Shelow, David <Shelow.David@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Hamilton, Scott <hamilton.scott@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: EtO monitoring

Per discussion with Jackie here are the revised sampling numbers. Let us know if you have further adjustments to this request.

Deliberative Process / Ex. 5

The paperwork has just started to go through for the recalibration of the portable met tower. We will update you once the tower has reached the vendor and get an estimated return time so you know when to let ERG send the canisters to R5.

Thanks, Margaret

From: Shelow, David
Sent: Wednesday, March 07, 2018 11:52 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: EtO monitoring

Hi Margaret,
Can you call me real quick, I have just a couple of questions.
Dave

David M. Shelow
National Air Toxics Ambient Monitoring Program Manager
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Ambient Air Monitoring Group C304-06
Research Triangle Park, NC 27711
Phone: 919-541-3776
Fax:: 919-541-1903
Email: shelow.david@epa.gov

From: Sieffert, Margaret
Sent: Wednesday, March 07, 2018 11:31 AM
To: Shelow, David <Shelow.David@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Hamilton, Scott <hamilton.scott@epa.gov>
Subject: RE: EtO monitoring

Sorry for the delay. Please let us know your thoughts on this since it was described differently in the draft sampling plan.

Deliberative Process / Ex. 5

Please let me know if this is amenable.

From: Shelow, David
Sent: Tuesday, March 06, 2018 6:42 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Hamilton, Scott <hamilton.scott@epa.gov>
Subject: RE: EtO monitoring

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5 How many canister samples are we thinking for the screening study? That will help me determine how much cost to put on ERG contract.
Dave

David M. Shelow
National Air Toxics Ambient Monitoring Program Manager
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Ambient Air Monitoring Group C304-06
Research Triangle Park, NC 27711
Phone: 919-541-3776
Fax:: 919-541-1903
Email: shelow.david@epa.gov

From: Sieffert, Margaret
Sent: Monday, March 05, 2018 4:32 PM
To: Shelow, David <Shelow.David@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Hamilton, Scott <hamilton.scott@epa.gov>
Subject: EtO monitoring

Hi Dave,

Just checking in on if you were able to find funding to use ERG. We were not able to find another calibrated met station and are getting ready to submit the paperwork to get funding to get ours recalibrated. We will keep you updated on the status of that so we can plan the monitoring period.

Thanks, Margaret

Message

From: Shelow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3859ABC25E634D418478F3D3CA569C79-SHELOW, DAVID]
Sent: 6/14/2018 1:57:04 PM
To: Dewees, Jason [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=38cc35d204824b6bb3fb95693f7316ea-Dewees, Jason]
Subject: FW: R5 EtO Sampling Plan
Attachments: sterignics.kmz; Ele.kmz; 2018Feb16-draftEtOSamplingPlan.docx

David M. Shelow
Physical Scientist
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Ambient Air Monitoring Group C304-06
Research Triangle Park, NC 27711
Phone: 919-541-3776
Fax:: 919-541-1903
Email: shelow.david@epa.gov

From: Sieffert, Margaret
Sent: Friday, February 16, 2018 10:42 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Shelow, David <Shelow.David@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: R5 EtO Sampling Plan

Dave, As a way to prepare for a conference call with Wayne, we (Jackie, George, and I) thought it was best to figure out a plan before talking to Wayne. Attached is a sampling plan we drafted Deliberative Process / Ex. 5 Deliberative Process / Ex. 5 We wanted to share it with you for review and then we will share with Wayne when scheduling the conference call later next week. Please share with others if you think necessary.

Ted and Darcie, we included you so you can review and Deliberative Process / Ex. 5 Deliberative Process / Ex. 5

Also included is the sterigenics kmz file so you can zoom in and out of the area in google earth.

Here is the summary of the modeling:

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

-Margaret

Message

From: Furey, Eileen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5AAA3A0EE58047D983897C53C1EB283E-EFUREY]
Sent: 6/27/2018 6:41:08 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Cohen, Eric [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=545800040a904d3e9ccfa22400b0f5fa-Eocohen]
CC: Nelson, Leverett [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2229a07c2cb442b182332d9dcc325f13-LNelson]
Subject: RE: Proposed agenda for tomorrow's technical call with Sterigenics

Deliberative Process / Attorney Client Ex. 5

Eileen L. Furey
Deputy Director
Air and Radiation Division
U.S. EPA Region 5
(312) 886-7950

From: Nam, Ed
Sent: Wednesday, June 27, 2018 1:39 PM
To: Cohen, Eric <cohen.eric@epa.gov>
Cc: Nelson, Leverett <nelson.leverett@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: Proposed agenda for tomorrow's technical call with Sterigenics

Thanks,

Deliberative Process / Attorney Client Ex. 5

-Ed

From: Cohen, Eric
Sent: Wednesday, June 27, 2018 1:34 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Nelson, Leverett <nelson.leverett@epa.gov>
Subject: RE: Proposed agenda for tomorrow's technical call with Sterigenics

Ed:

Deliberative Process / Attorney Client Ex. 5

eric

From: Nam, Ed
Sent: Wednesday, June 27, 2018 1:24 PM
To: Thiede, Kurt <thiede.kurt@epa.gov>; Payne, James <payne.james@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Proposed agenda for tomorrow's technical call with Sterigenics

Kurt and Jim,

We just had a very interesting and productive technical call with Sterigenics. It was the first of a series. On the call, we had our toxics and permitting team (not enforcement nor counsel), IEPA (Air Director and staff), and from the company the Sr VP on environment (global) and her director.

I assured them that this was not an enforcement call, and let them know that we have no reason to expect that they are not compliant with standards. I also mentioned that we appreciate how proactive they are in submitting a permit for controls, and agreeing to conduct stack testing post control. They seem open to proactively reducing the risk to the community, potentially going "well beyond compliance".

There is too much to report, but here are some interesting highlights of the call:

- They expect to have new permitted controls in place in 4- 6 weeks.
- While they expect the controls to reduce emissions significantly, they believe that there may still be some fugitive emissions, though these estimates are extremely rough.
- Based on their estimates, we believe that there may still be reason for concern. However, before we can conclude this, we'd need to do more analysis and monitoring.
- They are open to helping to conduct post control ambient monitoring.
- They were concerned about a level playing field and were suspicious that some of their competitors don't report their emissions. I told them that we would be looking into this.
- We are scheduling a follow-up (deeper dive) meeting, which will include a tour of the facility.

Let me know if you'd like a briefing.
Thanks,
-Ed

From: Thiede, Kurt
Sent: Tuesday, June 26, 2018 5:57 PM
To: Payne, James <payne.james@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Cc: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>
Subject: Re: Proposed agenda for tomorrow's technical call with Sterigenics

Looks good. No changes. I won't be participating.

Thanks!

Sent from my iPhone

On Jun 26, 2018, at 5:55 PM, Payne, James <payne.james@epa.gov> wrote:

> Reads well to me, thanks.
>
> If it isn't already know, it would be helpful of course to confirm or learn more about whether any other uncontrolled EtO sources will remain at the facility, fugitive or otherwise, after the construction.
>
> Kurt might have further input.
>
> ---
>
> **From:** Furey, Eileen
> **Sent:** Tuesday, June 26, 2018 3:41 PM
> **To:** Thiede, Kurt <thiede.kurt@epa.gov>; Payne, James <payne.james@epa.gov>

Cc: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>
Subject: Proposed agenda for tomorrow's technical call with Sterigenics

Kurt and Jim-

Ed is traveling back from Lansing and asked that I send this proposed agenda to the two of you for your review. The call tomorrow is at 11:00 – please let us know if you would like to participate. Sterigenics does not intend to have counsel on the line.

We will share the agenda with Illinois EPA as soon as we've heard back from you.

As an additional heads-up, Illinois EPA is issuing the construction permit to Sterigenics today. Illinois EPA included as permit terms many suggestions from the R5 team and OAQPS about stack testing.

Sterigenics 6-27-18 Agenda

- Introductions
- Sterigenics questions for EPA about modeling and monitoring
- EPA questions for Sterigenics about modeling parameters
- Timeline for construction project
- Estimated emissions after construction project
- Potential monitoring/stack tests
- Future meetings

Please feel free to give Katie Siegel (6-3006) or me a call if you have any questions.

Eileen

Eileen L. Furey
Deputy Director
Air and Radiation Division
U.S. EPA Region 5
(312) 886-7950

Message

From: Sieffert, Margaret [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DBB22FA4A9B14C1E8C634B2E0791CEFA-MSIEFFER]
Sent: 9/5/2018 4:15:31 PM
To: Rimer, Kelly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=123a21a46d0e4e53a590798cdcc3fb47-KRIMER]
Subject: RE: Rimer, Kelly wants to access 'Air Toxics and Assessment Branch'

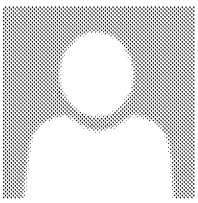
Hi Kelly,

Sorry I was on leave when your request came in but you do have access to the sterigenics folder so not sure what happened. Here is the link again.

Go to Sterigenics

-Margaret

From: Rimer, Kelly [mailto:no-reply@sharepointonline.com]
Sent: Wednesday, August 29, 2018 8:54 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Rimer, Kelly wants to access 'Air Toxics and Assessment Branch'



I thought I had approval for this site, but I guess I don't yet. Could ya'll add me? thanks

Accept or Decline this request

Requested resource: https://usepa.sharepoint.com/sites/R5/ARD/ATAB

Message

From: Verhalen, Frances [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DA20B77D29D744A3AAEC0CF67C7718BA-VERHALEN, FRANCES]
Sent: 1/26/2018 2:19:33 PM
To: Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]; Rimer, Kelly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=123a21a46d0e4e53a590798cdcc3fb47-KRIMER]
CC: Parker, Cindy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b2a4068e15e442b5bc310ba08acfb492-Parker, Cindy]; Madden, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dfcb5e16e56a4858b75551a6326a0fb0-Madden, Jos]
Subject: FW: Sterigenics Santa Teresa - who did the review

NATA – I realize NATA is based on 2014 data. The NATA risk for this facility is modeled over 100-in-1M with 2014 data.

In 2015, Sterigenics Santa Teresa reduced their TRI by about 90%. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Frances Verhalen, P.E., Chief
Air Monitoring/Grants Section
US Environmental Protection Agency
1445 Ross Avenue (MC 6MM-AM)
Dallas, TX 75202
214-665-2172
verhalen.frances@epa.gov

From: Parker, Cindy
Sent: Friday, January 26, 2018 7:56 AM
To: Verhalen, Frances <verhalen.frances@epa.gov>; Larson, Darrin <Larson.Darrin@epa.gov>
Cc: Madden, Joshua <madden.joshua@epa.gov>
Subject: FW: Sterigenics Santa Teresa - who did the review

FYI –
Our Sterigenics facility reported their data through TRI. But, unfortunately, didn't get included in the list that the TRI effort (that's who Velu is) where HQ would call the facility to ask/verify data.
Fran, yesterday on the call, R5 mentioned a letter they had sent to their EtO facilities back in December, mentioning the cancer risk change and requesting a meeting. Their Sterigenics location declined their request for a meeting, but said they had figured a way to capture back vent and close out vent and it went to a wet scrubber (Darrin, add in here if I missed something), and that they had also done that with their New Mexico facility.

Deliberative Process / Ex. 5

Darrin, I'm not sure I understood Margaret's explanation of Sterigenics' process, and was writing very fast, but she talked faster. Please add in, if I missed something.
Josh was also on the call. Chime in.
I talked with Madeleine after the call, hence the follow-up email below.
Cindy

From: Strum, Madeleine
Sent: Thursday, January 25, 2018 4:45 PM
To: Parker, Cindy <parker.cindy@epa.gov>

Cc: Witt, Jon <Witt.Jon@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>
Subject: Sterigenics Santa Teresa - who did the review

Hi Cindy

Deliberative Process / Ex. 5

Consistent with the information from Region V at today's call about Sterigenics implementing emission reduction strategies, TRI does show (their TRI id is 88008GRFFT2400A) huge decreases in their emissions from 2014. Per the table below, ethylene oxide decreased from a total (stack plus fugitive) of 5761 lbs to 967 lbs in 2016 (83% reduction). I will add that to the updated-from-2014 list that I am keeping to track changes in emissions after 2014.

Deliberative Process / Ex. 5

Chemical Name	Media	Unit Of Measure	2016	2015	2014	2013
ETHYLENE GLYCOL (TRI Chemical ID: 000107211)	AIR FUG	Pounds	0	0	0	0
ETHYLENE GLYCOL (TRI Chemical ID: 000107211)	AIR STACK	Pounds	0	0	0	0
ETHYLENE OXIDE (TRI Chemical ID: 000075218)	AIR FUG	Pounds	508	537	505	517
ETHYLENE OXIDE (TRI Chemical ID: 000075218)	AIR STACK	Pounds	459	466	5256	9565

Madeleine

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

Message

From: Rimer, Kelly [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=123A21A46D0E4E53A590798CDCC3FB47-KRIMER]
Sent: 9/11/2018 2:16:46 PM
To: Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]
Subject: RE: Pre and post control maps

Thank you Ned

From: Shappley, Ned
Sent: Tuesday, September 11, 2018 8:56 AM
To: Rimer, Kelly <Rimer.Kelly@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Cc: Hemby, James <Hemby.James@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: FW: Pre and post control maps

Kelly/Mike,

Attached are the results of the additional modeling Region 5 did for Sterigenics based on the assumed reduction when routing the "backvent" to the existing APCD. **Deliberative Process / Ex. 5**

Deliberative Process / Ex. 5

Thanks,
Ned

From: Cain, Alexis
Sent: Tuesday, 4 September, 2018 10:00
To: Shappley, Ned <Shappley.Ned@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: FW: Pre and post control maps

Results from AERMOD version 1621R
Five year of met data (2012-2016) from Midway Airport
All sources were modeled as stacks (point sources) , No fugitives emissions
Based on NATA 2014 emissions
All emissions are came from Building #1

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nguyen, Phuong
Sent: Friday, August 31, 2018 12:41 PM
To: Compher, Michael <compher.michael@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: Pre and post control maps

Hi Michael and Katie-
Attached are the isopleth concentration maps for the pre and post controls for Sterignics (maps are not the same scale).
The modeling receptor grid extended out to 1.0 km from the facility in all four directions
For the three cities, they are not in the modeling receptor domain.
Burr Ridge is about 1.5 km to the east of the facility
Darien is about 3.0 km to the west of the facility
And Hinsdale is about 5.5 km north of the facility

Deliberative Process / Ex. 5

Hope this helps. Let me know if you have any questions.

Phuong

From: Compher, Michael
Sent: Friday, August 31, 2018 9:58 AM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: are you working today?

Good morning Phuong,

I'm hoping to have you send me the modeling isopleth maps, pre and post controls, for Sterigenics.

Michael Compher
Chief, Air Monitoring and Analysis Section
Region 5 Air and Radiation Division
U.S. Environmental Protection Agency
Phone: 312-886-5745

Appointment

From: Rimer, Kelly [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=123A21A46D0E4E53A590798CDCC3FB47-KRIMER]
Sent: 8/29/2018 1:08:46 PM
To: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]; Fruh, Steve [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f47a02a00d3642aea6de691e3015b188-SFRUH]

Subject: FW: Meeting with Mayor of Willowbrook, IL on Sterigenics and EtO
Location: RTP-C400A-Max40/RTP-Bldg-C

Start: 8/29/2018 5:30:00 PM
End: 8/29/2018 6:30:00 PM
Show Time As: Tentative

-----Original Appointment-----
From: Cortelyou-Lee, Jan
Sent: Wednesday, August 29, 2018 8:54 AM
To: Cortelyou-Lee, Jan; Rimer, Kelly; Smith, Darcie; Koerber, Mike; Bremer, Kristen; Shappley, Ned; Caparoso, Jennifer
Cc: Johnson, Steffan; Lassiter, Penny
Subject: Meeting with Mayor of Willowbrook, IL on Sterigenics and EtO
When: Wednesday, August 29, 2018 1:30 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: RTP-C400A-Max40/RTP-Bldg-C

EPA Region 5 and ATSDR will lead this meeting.

Here are some of my questions so far.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Message

From: Sasser, Erika [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=477638FE84004800BFDF8E62FE3CAFC8-ESASSER]
Sent: 6/22/2018 5:39:22 PM
To: Palma, Ted [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f7bef4a695c944f089bf3e14f199f8aa-Palma, Ted]; Shelow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3859abc25e634d418478f3d3ca569c79-Shelow, David]; Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]
CC: Rimer, Kelly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=123a21a46d0e4e53a590798cdcc3fb47-KRIMER]; Wayland, Richard [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d69f0a870909402ebd66847003aa6437-Wayland, Chet]; Alison Davis [Davis.Alison@epa.gov]
Subject: RE: Question

I did a quick google search—this facility is 9 miles from Sterigenics, and has been flagged by several environmental groups as high-risk facility for EtO (see, e.g., https://www.greenpeace.org/usa/the-environmentalist-12-chemical-facilities-putting-the-most-americans-at-risk/). Deliberative Process / Ex. 5 & Enforcement/Investigatory / Ex. 7(a) & Enforcement Techniques / Ex. 7(e)

Deliberative Process / Ex. 5 & Enforcement/Investigatory / Ex. 7(a) & Enforcement Techniques / Ex. 7(e)

From: Palma, Ted
Sent: Friday, June 22, 2018 1:36 PM
To: Shelow, David <Shelow.David@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>; Wayland, Richard <Wayland.Richard@epa.gov>
Subject: Re: Question

I found in NATA,

it does emit EtO, currently about 0.2 tpy, its a Synthetic Minor, Polyols manufacturers; permitted for 2.8 TPY HAP (EtO).

It is not currently (2014 NATA) contributing to a tract with a risk greater than 100 in a M

Ted Palma
USEPA

OAQPS/HEID/ATAG
MD C539-02
RTP, NC 27711

From: Shelow, David
Sent: Friday, June 22, 2018 1:25 PM
To: Sasser, Erika; Shappley, Ned
Cc: Rimer, Kelly; Palma, Ted; Wayland, Richard
Subject: RE: Question

I think they are a chemical company making many product. Ted is going to look into it on NATA to see if they are a source of ETO

David M. Shelow
Physical Scientist
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Ambient Air Monitoring Group C304-06
Research Triangle Park, NC 27711
Phone: 919-541-3776
Fax:: 919-541-1903
Email: shelow.david@epa.gov

From: Sasser, Erika
Sent: Friday, June 22, 2018 1:21 PM
To: Shelow, David <Shelow.David@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Wayland, Richard <Wayland.Richard@epa.gov>
Subject: RE: Question

Thanks, Dave. All- what is Pelron? Is this EtO?

From: Shelow, David
Sent: Friday, June 22, 2018 12:33 PM
To: Sasser, Erika <Sasser.Erika@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Wayland, Richard <Wayland.Richard@epa.gov>
Subject: RE: Question

Hi Erika,
Here are a couple of items for you

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

David M. Shelow
Physical Scientist
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Ambient Air Monitoring Group C304-06

Research Triangle Park, NC 27711
Phone: 919-541-3776
Fax:: 919-541-1903
Email: shelow.david@epa.gov

From: Sasser, Erika
Sent: Friday, June 22, 2018 12:24 PM
To: Shelow, David <Shelow.David@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>
Subject: Question
Importance: High

Can someone provide the following info:

1. What were the specific grab sample levels monitored in R5—how many were there, and exactly what levels for each? Is 9 the average, or the highest?
2. What levels were modeled by R5, and where? There is reference to 2 ug at a residence, but is this monitored or modeled value? What was the highest modeled concentration?

Any specifics you have would be helpful. Thanks

Message

From: Shappley, Ned [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5FC7FDE372054AB5AC38F24B9072B73D-SHAPPLEY, N]
Sent: 8/14/2018 2:06:42 PM
To: Mattison, Kevin [Kevin.Mattison@Illinois.gov]
CC: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
Subject: RE: 043110AAC - Sterigenics

Kevin,

Thank you for the prompt response. The end of this week will not work due to some scheduling conflicts. Could you let me know when your availability the week of Labor Day?

Thanks,
Ned

From: Mattison, Kevin [mailto:Kevin.Mattison@Illinois.gov]
Sent: Tuesday, 14 August, 2018 09:38
To: Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Witt, Jon <Witt.Jon@epa.gov>
Subject: RE: 043110AAC - Sterigenics

Ned,

I should be available Wed – Fri this week.

Kevin

From: Shappley, Ned [mailto:Shappley.Ned@epa.gov]
Sent: Monday, August 13, 2018 4:45 PM
To: Mattison, Kevin <Kevin.Mattison@Illinois.gov>
Cc: Witt, Jon <Witt.Jon@epa.gov>
Subject: [External] 043110AAC - Sterigenics

Kevin,

I recently left you a voicemail as well. When you get a chance could you let me know your availability to discuss your recent visit to the Sterigenics facility in Willowbrook. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Thanks,

Ned Shappley | USEPA|OAQPS|AQAD|Measurement Technology Group
109 TW Alexander Drive (E143-02) | Research Triangle Park, NC 27711
email: shappley.ned@epa.gov | Phone (919)541-7903

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Message

From: Sieffert, Margaret [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DBB22FA4A9B14C1E8C634B2E0791CEFA-MSIEFFER]
Sent: 8/14/2018 1:57:49 PM
To: Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]
Subject: RE: EtO

Thanks. Personal Privacy / Ex. 6

From: Shappley, Ned
Sent: Tuesday, August 14, 2018 8:55 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: EtO

If I cannot get it scheduled this week, we can wait until after labor day for this discussion. I just wanted to talk through my concerns before the next performance test which I assume is still another couple months out.

I hope you are going somewhere fun on your trip/vacation!

Ned

From: Sieffert, Margaret
Sent: Tuesday, 14 August, 2018 08:48
To: Shappley, Ned <Shappley.Ned@epa.gov>
Subject: RE: EtO

Ned,

Yes I would like to be on the call. Could you also add Alexis and Katie to the call as I am on leave from Aug 20-Sept 3. So depending on when the call is scheduled I may or may not be available. Deliberative Process / Ex. 5

Personal Privacy / Ex. 6

Margaret

From: Shappley, Ned
Sent: Monday, August 13, 2018 4:40 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: EtO

Margaret,

Deliberative Process / Ex. 5

Thanks,
Ned

From: Sieffert, Margaret
Sent: Monday, 13 August, 2018 08:11
To: Shappley, Ned <Shappley.Ned@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Nash, Dave <Nash.Dave@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: EtO

Ned,

You had mentioned that you were going to share your concerns with IEPA as well. Just wondering if you had and if not will you still be doing that or could we share your concerns with them.

-Margaret

From: Shappley, Ned
Sent: Saturday, August 11, 2018 10:39 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Nash, Dave <Nash.Dave@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Re: EtO

Alexis,

Yes, the rant was for the internal audience, please only send the word document. Below are a couple of testing firms and POC that are capable of doing this work, this list is not considered an endorsement but a recognition that these companies capabilities.

Prism Analytical - Phil Kauppi

Montrose Environmental - Don Chapman

Clean Air Engineering - Robert Doran

Spectrum Environmental Solutions - Steve Hall

TRC - Tom Dunder

Thanks,

Ned

From: Cain, Alexis
Sent: Friday, August 10, 2018 1:15:40 PM
To: Nash, Dave; Shappley, Ned
Cc: Sieffert, Margaret; Siegel, Kathryn
Subject: RE: EtO

One additional question—Ned—can you provide some names of contractors capable of doing the testing?
Thanks

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Friday, August 10, 2018 12:02 PM
To: Nash, Dave <Nash.Dave@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: EtO

Much appreciated, Ned and Dave! This is extremely useful.

Deliberative Process / Ex. 5

Thanks.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nash, Dave
Sent: Friday, August 10, 2018 7:57 AM
To: Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: EtO

Ok, guys, here's my edited write up. Let Ned and me know if you have any other questions.
Dave

From: Shappley, Ned
Sent: Friday, August 10, 2018 12:00 AM
To: Nash, Dave <Nash.Dave@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: EtO

All,

Sorry for my delayed response, somehow my work computer is no longer recognizing my domain, so I had to rewrite this thing when I got home tonight. (Bad excuse I know)

Dave, as we discussed earlier could you please give this write-up for your quick review and edit in the morning when you get in. I tried really hard not to get in the weeds.

Alexis and Margaret,

Deliberative Process / Ex. 5

Have a great weekend and I will talk to y'all next week.

Ned

Message

From: Shappley, Ned [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5FC7FDE372054AB5AC38F24B9072B73D-SHAPPLEY, N]
Sent: 8/13/2018 9:45:10 PM
To: Mattison, Kevin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=userff092538]
CC: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
Subject: Sterigenics

Kevin,

I recently left you a voicemail as well. When you get a chance could you let me know your availability to discuss your recent visit to the Sterigenics facility in Willowbrook Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Thanks,

Ned Shappley | USEPA|OAQPS|AQAD|Measurement Technology Group
109 TW Alexander Drive (E143-02) | Research Triangle Park, NC 27711
email: shappley.ned@epa.gov | Phone (919)541-7903

Message

From: Shappley, Ned [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5FC7FDE372054AB5AC38F24B9072B73D-SHAPPLEY, N]
Sent: 6/22/2018 12:01:08 PM
To: Palma, Ted [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f7bef4a695c944f089bf3e14f199f8aa-Palma, Ted]
Subject: RE: Sterigenics

Thanks Ted

From: Palma, Ted
Sent: Friday, 22 June, 2018 07:56
To: Shappley, Ned <Shappley.Ned@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>
Subject: Re: Sterigenics

Ned

Deliberative Process / Ex. 5

Ted

Ted Palma
USEPA
OAQPS/HEID/ATAG
MD C539-02
RTP, NC 27711

From: Shappley, Ned
Sent: Thursday, June 21, 2018 7:03 PM
To: Smith, Darcie; Witt, Jon; Palma, Ted
Subject: RE: Sterigenics

Deliberative Process / Ex. 5

Ned

From: Smith, Darcie
Sent: Thursday, 21 June, 2018 15:29
To: Langdon, Robin <Langdon.Robin@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>
Subject: FW: Sterigenics

Darcie Smith
U.S. EPA/OAQPS/ATAG
919.541.2076
smith.darcie@epa.gov

From: Sieffert, Margaret
Sent: Thursday, June 21, 2018 3:21 PM
To: Palma, Ted <Palma.Ted@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>
Subject: Sterigenics

I wanted to share the construction permit application with you. It was shared with us last week by IEPA. Also yesterday IEPA shared various stack test reports with us as well and I have attached them.

-Margaret

Message

From: Witt, Jon [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=EA00BC6F645B438682026A77A8D4267C-WITT, JONAT]
Sent: 9/12/2018 8:39:44 PM
To: Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]
Subject: RE: Sterilizers

I think Region 8 might be doing additional actions for Terumo. I think recently finished up with ambient air sampling, and the facility used to route backvent emissions to a scrubber, so I would imagine it wouldn't be too much a lift for them to go back to that. And of course, there's the work Region 2 is doing in PR, but that's all that I'm aware of at the moment. I got a question from the state of Georgia about the Sterigenics facility there, so they may be focusing on additional actions for that facility.

From: Shappley, Ned
Sent: Wednesday, September 12, 2018 4:36 PM
To: Witt, Jon <Witt.Jon@epa.gov>
Subject: Sterilizers

Jon,

Deliberative Process / Ex. 5

Had the thought, just wanted to put it in writing or I would forget.

Thanks,.

Ned Shappley | USEPA|OAQPS|AQAD|Measurement Technology Group
109 TW Alexander Drive (E143-02) | Research Triangle Park, NC 27711
email: shappley.ned@epa.gov | Phone (919)541-7903

Appointment

From: Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]
Sent: 9/4/2018 12:24:37 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]

Subject: FW: Sterigenics - Willowbrook
Location: RTP-OAQPS-E141B/RTP-OAQPS-BLDG-E

Start: 9/4/2018 6:30:00 PM
End: 9/4/2018 7:30:00 PM
Show Time As: Tentative

-----Original Appointment-----
From: Shappley, Ned
Sent: Tuesday, 14 August, 2018 13:29
To: Shappley, Ned; Mattison, Kevin; Witt, Jon; Cain, Alexis; Sieffert, Margaret; Siegel, Kathryn; RTP-OAQPS-919-541-4248-AQAD/Phone-Line/RTP-OAQPS-BLDG-C; Robin Segall (Segall.Robin@epa.gov); Merrill, Raymond
Subject: Sterigenics - Willowbrook
When: Tuesday, 4 September, 2018 2:30 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: RTP-OAQPS-E141B/RTP-OAQPS-BLDG-E

Kevin,

The meeting is to:

1) Discuss your thoughts on whether the aeration room and sterilization chamber could meet Method 204 requirements for a PTE.
2) Sampling methodology for EtO moving forward and suggested improvements to these methodologies for the measurement of EtO.

Please feel free to reschedule if this time does not work for you.

Ned

Conference Line for cal **Conf. Line / Ex. 6**

Message

From: Shappley, Ned [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5FC7FDE372054AB5AC38F24B9072B73D-SHAPPLEY, N]
Sent: 10/16/2018 8:44:41 PM
To: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
Subject: FW: NAICS code/TRI question

FYI

From: Strum, Madeleine
Sent: Tuesday, 16 October, 2018 16:04
To: Shappley, Ned <Shappley.Ned@epa.gov>
Subject: FW: NAICS code/TRI question

From: Turk, David
Sent: Tuesday, October 2, 2018 6:10 PM
To: Senthil, Velu <Senthil.Velu@epa.gov>; Griffin, Stephanie <griffin.stephanie@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Devito, Steve <Devito.Steve@epa.gov>
Subject: RE: NAICS code/TRI question

To add to what Velu and Steph provided:

TRI added solvent recovery facilities in 1997 by adding SIC code 7389 and limiting it to facilities that are primarily engaged in solvent recovery services on a contract or fee basis. When we switched to include the NAICS system, we focused on certain NAICS codes, which perhaps isn't too surprising given how we characterized this addition in the 1997 rulemaking.

Deliberative Process / Ex. 5

-Dave

From: Senthil, Velu
Sent: Tuesday, October 02, 2018 5:28 PM
To: Griffin, Stephanie <griffin.stephanie@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Devito, Steve <Devito.Steve@epa.gov>; Turk, David <Turk.David@epa.gov>; Senthil, Velu <Senthil.Velu@epa.gov>
Subject: RE: NAICS code/TRI question

I wonder whether this industry might be one of those got left out when we changed from SIC to NAICS.

Velu Senthil

From: Senthil, Velu
Sent: Tuesday, October 02, 2018 5:21 PM
To: Griffin, Stephanie <griffin.stephanie@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>

Cc: Devito, Steve <Devito.Steve@epa.gov>; Turk, David <Turk.David@epa.gov>; Senthil, Velu <Senthil.Velu@epa.gov>
Subject: RE: NAICS code/TRI question

Ethylene oxide sterilizers in general fall under NAICS 561910 and it is not covered under TRI. We might have to go through rulemaking to add this industry.
[
NAICS 561910
Packaging and labeling services
2007 NAICS Definition

- **Product sterilization and packaging services**

]

Hope this is helpful.

Velu Senthil

From: Griffin, Stephanie
Sent: Tuesday, October 02, 2018 4:57 PM
To: Senthil, Velu <Senthil.Velu@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Devito, Steve <Devito.Steve@epa.gov>; Turk, David <Turk.David@epa.gov>
Subject: RE: NAICS code/TRI question

Hi Velu & Madeleine-
It's unclear exactly what exemption they're talking about; we don't have one specifically for ethylene oxide sterilizers, so I imagine they're talking about whether or not a specific use exemption applies.
But, yes, a change to a reporting requirement (whether it's exempting an industry, or changing a use exemption) would require a rulemaking.

From: Senthil, Velu
Sent: Tuesday, October 02, 2018 4:24 PM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Devito, Steve <Devito.Steve@epa.gov>; Turk, David <Turk.David@epa.gov>; Griffin, Stephanie <griffin.stephanie@epa.gov>; Senthil, Velu <Senthil.Velu@epa.gov>
Subject: RE: NAICS code/TRI question

Hi Madeleine,
That's my understanding.
David / Stephanie – any suggestions?
Thanks
Velu Senthil

From: Strum, Madeleine
Sent: Tuesday, October 02, 2018 4:20 PM
To: Senthil, Velu <Senthil.Velu@epa.gov>
Subject: FW: NAICS code/TRI question

Do you need a rule to remove the exemption for ethylene oxide sterilizers to report to TRI?

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

From: Sieffert, Margaret
Sent: Tuesday, October 2, 2018 4:15 PM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: NAICS code/TRI question

I talked to Darcie about this and she suggested I work with you to see if this is something we should consider.

Deliberative Process / Ex. 5

Let me know if you would like to discuss this further before talking to your contact,
Margaret

Message

From: Shappley, Ned [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5FC7FDE372054AB5AC38F24B9072B73D-SHAPPLEY, N]
Sent: 10/15/2018 1:27:34 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: RE: Next Steps

James,

I too am confused on the roles, it is my understanding that you will run the models to determine the placement of the ambient samplers and that HEID will do the long-term risk modeling with you (AQAD) providing input.

I am working through the raw data sent by Sterigenics and will update the modeling file with new assumptions for you by hopefully this afternoon.

Thanks,
Ned

From: Thurman, James
Sent: Friday, 12 October, 2018 15:20
To: Shappley, Ned <Shappley.Ned@epa.gov>
Subject: RE: Next Steps

Ned,

Deliberative Process / Ex. 5

For this case, we can model now with unit emission rates for the sources and scale post-modeling by actual emissions. Maybe we should have a short meeting Tuesday or Wednesday (I'm out the other days) to discuss the modeling needed. I've been confused about AQAD's vs. HEID's roles in the modeling and what modeling is being done and by whom.

James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Shappley, Ned
Sent: Friday, October 12, 2018 3:12 PM

To: Thurman, James <Thurman.James@epa.gov>
Subject: RE: Next Steps

James,

Deliberative Process / Ex. 5

I ask because I doubt I will get data into later next week, and I wanted to provide you enough input to start your modeling effort.

Ned

From: Thurman, James
Sent: Friday, 12 October, 2018 10:51
To: Rimer, Kelly <Rimer.Kelly@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Morris, Mark <Morris.Mark@epa.gov>
Subject: RE: Next Steps

I don't have anything. I was curious about their choice of urban population.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Rimer, Kelly
Sent: Thursday, October 11, 2018 5:38 PM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Morris, Mark <Morris.Mark@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Subject: FW: Next Steps

Ned, Mark and James,

See below. Is there any additional information Mike Koerber should know about the call yesterday?

Is there anything else we need from Sterigenics?

Thanks,
Kelly

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Thursday, October 11, 2018 5:32 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>
Cc: bftaylor@Sidley.com
Subject: Next Steps

Mike / Kelly:

Thank you again for getting your staff to immediately review our model information and start the risk assessment. It sounds like the initial model runs match our results. We owe them some further detailed information (tomorrow) and the final stack test reports (next week) so they can finalize the model. I was wondering if we can schedule a call to discuss next steps and possible timing.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

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Message

From: Shappley, Ned [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5FC7FDE372054AB5AC38F24B9072B73D-SHAPPLEY, N]
Sent: 9/24/2018 8:27:17 PM
To: Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]
Subject: RE: Internal and Deliberate - another sterilizer

Yes, although it will not be very long. I am going to work on a more formal twenty minute talk for Thursday that I can give to my management and to Region 5 as a follow-up. Wanted to run some topics by Mike before giving my brief to Region 5 staffing.

Hope you had a good weekend!

Ned

From: Smith, Darcie
Sent: Monday, 24 September, 2018 16:17
To: Shappley, Ned <Shappley.Ned@epa.gov>
Subject: RE: Internal and Deliberate - another sterilizer

I'm planning on sticking around after the 8:30 to hear about your trip. Is that still the plan?

Darcie Smith
U.S. EPA/OAQPS/ATAG
919.541.2076
smith.darcie@epa.gov

From: Shappley, Ned
Sent: Monday, September 24, 2018 4:00 PM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Smith, Darcie <Smith.Darcie@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>
Subject: Internal and Deliberate - another sterilizer

Madeline,

Deliberative Process / Ex. 5

5725 Harold Gatty Dr, Salt Lake City, UT 84116

Regards,

Ned Shappley | USEPA|OAQPS|AQAD|Measurement Technology Group
109 TW Alexander Drive (E143-02) | Research Triangle Park, NC 27711

email: shappley.ned@epa.gov | Phone (919)541-7903

Appointment

From: Sieffert, Margaret [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DBB22FA4A9B14C1E8C634B2E0791CEFA-MSIEFFER]
Sent: 9/26/2018 1:44:29 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]
BCC: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=userd9a8a38a]

Subject: Sterigenics de-briefing with OAQPS
Location: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Start: 9/27/2018 7:00:00 PM
End: 9/27/2018 8:00:00 PM
Show Time As: Tentative

Conference Line Personal Privacy / Ex. 6 Code Personal Privacy / Ex. 6

Message

From: Colledge, Michelle [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=20FA592058B44FA4B2FC724A8DB2241B-MCOLLEDG]
Sent: 9/14/2018 9:01:47 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Johnson, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fa0bb816084b41598201f9335c5155fb-Mojohnso]
Subject: OAQPS Meeting ??s
Attachments: OAQPS Meeting Questions v.9.14.18.docx

Hello Katie and Mark-

Please see the info for the OAQPS meeting Margaret and I just finished discussing for review and comment.

Have a great weekend!
Michelle

Michelle A. Colledge MPH, PhD
CAPT, U.S. Public Health Service
Agency for Toxic Substances and Disease Registry/NCEH/CDC, Region 5
77 W. Jackson Blvd., Room 413
Mailstop ATSD-4J
Chicago, Illinois 60604
Tel: 312-886-1462
Fax: 312-886-6066

please consider the environment before printing this email

Message

From: Delisio, Edward [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9319E61692214D5897DE4181B1D61D67-EDELISIO]
Sent: 9/4/2018 6:53:01 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: sterigenics risk calcs
Attachments: STERI_8ER_PERALL.PLT; Sterigenics_postcontrol.csv

Hi Margaret, can you double check the data in the .csv file? the original is also attached. thanks. Ed

Edward Delisio
USEPA Region 5
Chicago, Illinois
ph.312-886-1303
fx. 312-692-2044
delisio.edward@epa.gov

From: Nguyen, Phuong
Sent: Tuesday, September 04, 2018 1:32 PM
To: Delisio, Edward <delisio.edward@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: looking for Sterigenics data file.

Hi Ed,
Just got back. Here is the file for post control (92% reduction). You might want to open the file in notepad and save it in excel before using it in GIS. Make sure It converted/saved correctly . Let me know if you need anything else.

Phuong

From: Delisio, Edward
Sent: Tuesday, September 04, 2018 1:18 PM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: looking for Sterigenics data file.

Hi Phuong. I don't have much time before tomorrow morning, so if you can get me the data asap – I would appreciate it.

Thanks, Ed

Edward Delisio
USEPA Region 5
Chicago, Illinois
ph.312-886-1303
fx. 312-692-2044
delisio.edward@epa.gov

```
Column1,x,y,conc,risk,,
,421367.10000,4621723.10000,0.00673,33.65,,
,421417.10000,4621723.10000,0.00739,36.95,,
,421467.10000,4621723.10000,0.00835,41.75,,"conc(ug/m3)*0.005(1/(ug/m3))*1,000,000 =
risk in a million"
,421517.10000,4621723.10000,0.00966,48.3,,
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,421667.10000,4621723.10000,0.01345,67.25,,
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,421917.10000,4621723.10000,0.01303,65.15,,
,421967.10000,4621723.10000,0.01251,62.55,,
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,422067.10000,4621723.10000,0.01172,58.6,,
,422117.10000,4621723.10000,0.01158,57.9,,
,422167.10000,4621723.10000,0.01149,57.45,,
,422217.10000,4621723.10000,0.01133,56.65,,
,422267.10000,4621723.10000,0.01105,55.25,,
,422317.10000,4621723.10000,0.01070,53.5,,
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Message

From: Olson, Erik [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B05E7846315E4BF4B9D0DF0AFDB3EB43-EOLSON02]
Sent: 7/11/2018 2:03:01 PM
To: Rountree, Jillian [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7d304e5e55a54908b24b17e57ecdbf3c-JRountre]
CC: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: Sterigenics Modeling Parameters
Attachments: Ele letter.pdf; Sterigenics letter.pdf

Erik H. Olson
Associate Regional Counsel
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Mailcode C-14J
Chicago, Illinois 60604

olson.erik@epa.gov
(312)886-6829

From: Sieffert, Margaret
Sent: Wednesday, March 07, 2018 2:08 PM
To: Olson, Erik <olson.erik@epa.gov>
Subject: RE: Sterigenics Modeling Parameters

From: Olson, Erik
Sent: Wednesday, March 07, 2018 2:07 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Sterigenics Modeling Parameters

Thanks for relaying all these emails Margaret. Can you please send me a copy of each letter we sent to the facilities in December.

Erik H. Olson
Associate Regional Counsel
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Mailcode C-14J
Chicago, Illinois 60604

olson.erik@epa.gov
(312)886-6829

From: Sieffert, Margaret
Sent: Wednesday, March 07, 2018 1:44 PM

To: Olson, Erik <olson.erik@epa.gov>
Subject: FW: Sterigenics Modeling Parameters

From: Sieffert, Margaret
Sent: Wednesday, January 31, 2018 9:56 AM
To: 'kwagner@sterigenics.com' <kwagner@sterigenics.com>
Subject: Sterigenics Modeling Parameters

Kevin,

Thank you again for agreeing to review the modeling information pertaining to the Willowbrook facility. Per our conversation, below are the questions to try and correct regarding the modeling parameters. We provided some information on the second building for your review but know that EPA only has all emissions coming from one of the buildings.

EPA used google earth to obtain these values. Let us know if Sterigenics is in agreement with them.
-For building #1's address (7775 Quincy St., Willow brook, IL), please verify building #1's corners (lat/long) and building height.
lat/long. Building height of 23.2 feet.
1. 41.748181; -87.939061
2. 41.748163; -87.939499
3. 41.748141; -87.939500
4. 41.748124; -87.940454
5. 41.748006; -87.940453
6. 41.748001; -87.940513
7. 41.747787; -87.940508
8. 41.747786; -87.940444
9. 41.747667; -87.940441
10. 41.747674; -87.939042

EPA would like to separate the emissions by building. Again we used google earth to obtain these values. For building #2's address (830 Midway Dr. Willowbrook, IL), please verify building #2's corners (lat/long) and building height:
lat/long Building height of 12.3 feet
1. 41.748865; -87.941666
2. 41.748877; -87.941221
3. 41.748956; -87.941226
4. 41.748945; -87.941667

Sterigenics/IEPA has the 6 listed stacks in the same location at the following lat/long located withing building #1's area: lat (41.747990) ; long (-87.939730). For modeling purposes, our modeler had to move these stacks 1.0 meter apart as shown below in the table. We are pretty sure that the stacks aren't located at these locations, so if you can provide the lat/long for each of the stacks, or if easier you can mark each stacks location for building 1 and 2 on a map (created using google maps or something similar) and share a screenshot. Also for modeling purposes, EPA has the facility operating 24/7 for 365 days but if this is incorrect, please let us know your annual operating hours.

For each stack that emits EtO, EPA needs the following information: stack lat/long, stack emission rate, stack height, stack exit temperature, stack flow rate, stack diameter, and if the stack is vertical or horizontal. Do you have process fugitive emissions not ducted to a vent or stack not listed in table below? Table below lists the input parameters we used in the modeling. The stack parameter information could be found in a permit application, a stack test, or from manufacturer specifications. With regard to the projected facility emissions after the back vent project, please provide the same information.

Unit ID	Process ID	Stack ID	Lat	Long	2014 Emission Rate (TPY)	Stack Height (m)	Stack Temperature (k)	Stack Exit Velocity (m/s)	Stack Diameter (m)	Vertical or Horizontal Stack?
39469613	45489714	Stack#1	41.747989	-87.939729	0.030576	12.192	308.15	2.29	0.229	V
39469713	45489614	Stack#2	41.747989	-87.939741	0.069888	12.192	308.15	2.29	0.229	V
39469813	45489514	Stack#3	41.747989	-87.939753	1.39776	12.497	310.90	4.69	0.372	V
39469913	45489414	Stack#4	41.747998	-87.939729	0.6552	12.497	310.90	4.69	0.372	V
39470013	45489314	Stack#5	41.748007	-87.939729	0.00056784	10.058	293.00	11.14	0.914	V
39470113	45489214	Stack#6	41.74798	-87.939729	0.62899	12.912	308.15	2.29	0.229	V

Finally, could you provide a property boundary of the facility that includes both buildings? This could be as simple as marking up a map (created using google maps or something similar) and sharing a screenshot.

Not sure how long this will take you to review, but suggests a potential completion date of February 23. If you need additional time, please let me know. Thank you again for your assistance in reviewing the modeling parameters and please don't hesitate to email or call me if you have any questions,

Margaret

Margaret Sieffert | U.S. Environmental Protection Agency R5
Air & Radiation Division | Air Toxics and Assessment Branch
77 W. Jackson Blvd. (AT-18J) | Chicago, IL 60604 | 312.353.1151

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
12:10	4.3	35.2
12:15	5.6	37.5
12:20	4.9	27.4
12:25	4.5	29.6
12:30	5.4	30.9
12:35	5	43.2
12:40	3.9	22.2
12:45	3.7	29.9
12:50	4.7	40
12:55	4.6	45.6
13:00	4.4	33.7
13:05	4.2	32.1
13:10	3.4	41.2
13:15	3.4	25.5
13:20	2.9	36.2
13:25	3.6	54.9
13:30	3.2	65
13:35	3.3	69.5
13:40	3.9	59.3
13:45	2.8	83.6
13:50	3.4	68.3
13:55	3.7	59.1
14:00	3.6	61.3
14:05	2.9	67.3
14:10	2.7	68
14:15	3.4	82.1
14:20	4	63.5
14:25	4.3	53.4
14:30	3.4	46.4
14:35	3.9	54.9
14:40	4.6	61.6
14:45	4.5	62.4
14:50	3.6	57.5
14:55	4.5	59.5
15:00	5	53.9
15:05	5.1	53.8
15:10	4.6	53.9
15:15	3.9	46.2
15:20	4.6	29.4
15:25	4.8	16.5
15:30	4.5	14.4

5/15/2018 - Day 135 > AUTOMET < Station ID: 1

	3	4	5	6	7		8	Rain	Sigma
XXX		XXX	XXX	XXX	XXX	XXX		RA	
XXX		XXX	XXX	XXX	XXX	XXX		XXX	Deg
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	2	323.5	0	0	0		1	0	11.2
	2	323.1	0	0	0		1	0	16.4
	2	322.9	0	0	0		1	0	14.1
	2	323.1	0	0	0		1	0	12.2
	2	323.1	0	0	0		1	0	11.4
	2	322.4	0	0	0		1	0	15.6
	2	322.2	0	0	0		1	0	17.6
	2	322.6	0	0	0		1	0	9.3
	2	322.6	0	0	0		1	0	13.6
	2	322.5	0	0	0		1	0	12.8
	2	322.4	0	0	0		1	0	15.6
	2	322.1	0	0	0		1	0	17.6
	2	321.9	0	0	0		1	0	12.9
	2	321.6	0	0	0		1	0	14.8
	2	321.8	0	0	0		1	0	10.2
	2	321.7	0	0	0		1	0	16.2
	2	321.6	0	0	0		1	0	17
	2	322	0	0	0		1	0	10.3
	2	321.6	0	0	0		1	0	19.3
	2	321.7	0	0	0		1	0	12.6
	2	321.9	0	0	0		1	0	16.5
	2	321.8	0	0	0		1	0	16
	2	321.5	0	0	0		1	0	19.9
	2	321.4	0	0	0		1	0	19.8
	2	321.6	0	0	0		1	0	17
	2	321.8	0	0	0		1	0	17.9
	2	321.8	0	0	0		1	0	14.8
	2	321.5	0	0	0		1	0	17
	2	321.8	0	0	0		1	0	14.1
	2	322	0	0	0		1	0	13.7
	2	322	0	0	0		1	0	13
	2	321.8	0	0	0		1	0	14.3
	2	322.1	0	0	0		1	0	16.3
	2	322.5	0	0	0		1	0	10.5
	2	322.6	0	0	0		1	0	13.4
	2	322.5	0	0	0		1	0	15.4
	2	322.2	0	0	0		1	0	16.8
	2	322.4	0	0	0		1	0	16.6
	2	322.5	0	0	0		1	0	12.7
	2	322.5	0	0	0		1	0	14.8

15:35	4.7	35.8
15:40	4	23.7
15:45	4.4	12.7
15:50	4.2	11.9

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

15:55	4.6	3.3
16:00	4.7	19.1
16:05	4.3	16.2
16:10	4.6	18.4
16:15	4.2	22.8
16:20	4	11
16:25	3.7	358.7
16:30	4.1	13.7
16:35	4.6	351.5
16:40	4.5	358.2
16:45	4.6	8.8
16:50	3.7	8.2
16:55	4	352.4
17:00	4.4	12.3
17:05	4.3	17
17:10	4	16.4
17:15	2.7	4.6
17:20	4	354.5
17:25	4.3	353.1
17:30	4.1	359.4
17:35	4.7	4
17:40	5.1	350.5
17:45	4.5	354.7
17:50	4.5	11.1
17:55	4.9	9.7
18:00	4.5	3.1
18:05	4.8	352.4
18:10	4.5	1.6
18:15	4.3	16.3
18:20	4.6	21.7
18:25	4.8	15.6
18:30	4.6	14.9
18:35	4.1	4.8
18:40	4.6	4
18:45	4.7	14.6

2	322.5	0	0	0	1	0	13.5
2	322.4	0	0	0	1	0	15.4
2	322.4	0	0	0	1	0	13
2	322.5	0	0	0	1	0	16.4

5/15/2018 - Day 135 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	322.5	0	0	0	1	0	14.9
2	322.6	0	0	0	1	0	13.7
2	322.5	0	0	0	1	0	14.5
2	322.7	0	0	0	1	0	12.9
2	322.7	0	0	0	1	0	10.1
2	322.6	0	0	0	1	0	15.2
2	322.5	0	0	0	1	0	15.3
2	322.6	0	0	0	1	0	12.3
2	322.9	0	0	0	1	0	13.6
2	323.1	0	0	0	1	0	14.4
2	323.2	0	0	0	1	0	13.5
2	322.9	0	0	0	1	0	14
2	322.8	0	0	0	1	0	13.3
2	323.2	0	0	0	1	0	14.7
2	323.3	0	0	0	1	0	11.5
2	323.2	0	0	0	1	0	12
2	322.2	0	0	0	1	0	18.3
2	322.7	0	0	0	1	0	13.1
2	323	0	0	0	1	0	13
2	322.7	0	0	0	1	0	13.8
2	322.9	0	0	0	1	0	12.6
2	323.2	0	0	0	1	0	11.8
2	322.7	0	0	0	1	0	17.3
2	322.7	0	0	0	1	0	13.3
2	323.1	0	0	0	1	0	11.7
2	323.1	0	0	0	1	0	13.8
2	323.2	0	0	0	1	0	13.1
2	323.1	0	0	0	1	0	14.1
2	322.9	0	0	0	1	0	13.5
2	323.1	0	0	0	1	0	13.2
2	323.3	0	0	0	1	0	12.4
2	323.3	0	0	0	1	0	13
2	323.2	0	0	0	1	0	13.8
2	323.3	0	0	0	1	0	13.6
2	323.5	0	0	0	1	0	13.8

18:50	4.6	14.4
18:55	5.2	13.6
19:00	4.2	5.4
19:05	3.4	1.3
19:10	4.3	358
19:15	4.2	4.5
19:20	3.6	5.1
19:25	3.7	5.5
19:30	4.2	6.9
19:35	4	13.3

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

19:40	3.9	8.4
19:45	4.1	3.3
19:50	4.2	4
19:55	4.5	9.9
20:00	4	12
20:05	3.5	14
20:10	3.6	13.3
20:15	3.5	12.5
20:20	3.8	13.9
20:25	3.1	16.9
20:30	3.1	9.9
20:35	2.5	8.4
20:40	3	8.2
20:45	3.4	12.2
20:50	4	16.2
20:55	4.4	18.6
21:00	4.9	17.2
21:05	4.7	26.5
21:10	4.5	26.4
21:15	4.2	26.3
21:20	3.8	28
21:25	3.5	28.5
21:30	2.9	32.4
21:35	2.5	35
21:40	3.8	26.4
21:45	3.3	32.8
21:50	2.7	28
21:55	2.3	38.2
22:00	2.7	38

2	323.6	0	0	0	1	0	12
2	323.8	0	0	0	1	0	11
2	323.6	0	0	0	1	0	13.5
2	323.1	0	0	0	1	0	15.8
2	323.5	0	0	0	1	0	12
2	323.6	0	0	0	1	0	12.2
2	323.2	0	0	0	1	0	18.5
2	323.3	0	0	0	1	0	15.6
2	323.9	0	0	0	1	0	14.2
2	323.9	0	0	0	1	0	12.2

5/15/2018 - Day 135 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	323.9	0	0	0	1	0	14.3
2	324	0	0	0	1	0	16.1
2	324.4	0	0	0	1	0	13.8
2	324.5	0	0	0	1	0	12.9
2	324.7	0	0	0	1	0	14.3
2	324.3	0	0	0	1	0	16.4
2	324.5	0	0	0	1	0	13
2	324.5	0	0	0	1	0	14.5
2	325	0	0	0	1	0	11.8
2	324.7	0	0	0	1	0	11.8
2	324.4	0	0	0	1	0	11.9
2	324.3	0	0	0	1	0	10.3
2	324.3	0	0	0	1	0	11.7
2	325	0	0	0	1	0	13.5
2	325.5	0	0	0	1	0	10.7
2	326.2	0	0	0	1	0	12.3
2	326.8	0	0	0	1	0	13.8
2	327.3	0	0	0	1	0	13
2	326.9	0	0	0	1	0	12.9
2	326.8	0	0	0	1	0	12.8
2	326.2	0	0	0	1	0	11.5
2	326	0	0	0	1	0	12.3
2	325.5	0	0	0	1	0	12.2
2	324.8	0	0	0	1	0	13.7
2	325.5	0	0	0	1	0	11.2
2	325.9	0	0	0	1	0	11.8
2	325.7	0	0	0	1	0	13
2	324.7	0	0	0	1	0	12.8
2	325.1	0	0	0	1	0	12.3

22:05	2.8	28.1
22:10	2.7	33.6
22:15	2.9	25.7
22:20	2.3	35.6
22:25	2.9	41
22:30	2.4	31
22:35	2	31.5
22:40	2.1	31.3
22:45	2.2	30.3
22:50	2.7	31.2
22:55	2.8	33.2
23:00	2.2	37.3
23:05	2	34
23:10	2.5	34.5
23:15	2.1	36.2
23:20	1.9	31.4

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

23:25	2.6	27.9
23:30	1.9	29.2
23:35	2.1	24.4
23:40	1.8	25.1
23:45	1.9	24.3
23:50	1.9	29.6
23:55	1.8	25.6
0:00	1.8	26

Totals	n/a	
Savg		3.8
Vavg		0

Data Recovery

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

2	325.1	0	0	0	1	0	12.8
2	325.5	0	0	0	1	0	11.4
2	325.6	0	0	0	1	0	11.8
2	325.2	0	0	0	1	0	14.1
2	325.4	0	0	0	1	0	12.2
2	325.3	0	0	0	1	0	13.5
2	324.8	0	0	0	1	0	11.4
2	324.7	0	0	0	1	0	13.1
2	324.7	0	0	0	1	0	15.9
2	325.3	0	0	0	1	0	13.6
2	325.5	0	0	0	1	0	12.9
2	325.4	0	0	0	1	0	14.5
2	324.9	0	0	0	1	0	13.8
2	325	0	0	0	1	0	10.1
2	325.1	0	0	0	1	0	13.6
2	324.8	0	0	0	1	0	12.4

5/15/2018 - Day 135 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	325.3	0	0	0	1	0	9.5
2	325	0	0	0	1	0	12.6
2	325.1	0	0	0	1	0	10
2	324.8	0	0	0	1	0	15.5
2	324.7	0	0	0	1	0	14.4
2	324.7	0	0	0	1	0	14.2
2	324.7	0	0	0	1	0	13.8
2	324.7	0	0	0	1	0	11.7

n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	n/a	
53.4	2	323.6	0	0	0	1	n/a	13.7	
25.4	0	323.6	0	0	0	0	n/a	n/a	

49.7 %

5/16/2018 - Day 136 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg

==========

0:05	1.8	18.5
0:10	1.5	6.1
0:15	1.6	14
0:20	1.7	16.9
0:25	1.6	18.9
0:30	1.5	22
0:35	1.1	33.6
0:40	1.4	12.9
0:45	1.3	6.9
0:50	1.4	22.7
0:55	1.3	15.7
1:00	1.2	9.4
1:05	1.6	15.6
1:10	1.5	10.8
1:15	1.6	5.5
1:20	1.4	7.2
1:25	1.5	6.9
1:30	1.5	15.4
1:35	1.1	8.7
1:40	1	10.3
1:45	1.2	16.7
1:50	1.2	10.5
1:55	1	10.1
2:00	1.3	22.9
2:05	1.4	21.5
2:10	1.3	10.5
2:15	1.1	18.6
2:20	1.3	17
2:25	1.2	13.6
2:30	1.2	14.1
2:35	1.4	22.2
2:40	1.4	14.1
2:45	1.2	18.7
2:50	1.3	12.7
2:55	1.6	18.5
3:00	1.6	15.2
3:05	1.7	15.5
3:10	1.6	21.6
3:15	1.5	12.9
3:20	1.4	18.3
3:25	1.3	24.5
3:30	1.1	19
3:35	1.1	11
3:40	0.9	14.7
3:45	0.9	20.6

2	324.8	0	0	0	1	0	12.2
2	324.6	0	0	0	1	0	12.4
2	324.5	0	0	0	1	0	10.9
2	324.7	0	0	0	1	0	11.4
2	324.6	0	0	0	1	0	9.1
2	324.7	0	0	0	1	0	8.6
2	324.2	0	0	0	1	0	12.1
2	324.3	0	0	0	1	0	11.8
2	324.2	0	0	0	1	0	12.2
2	324.4	0	0	0	1	0	12.4
2	324.6	0	0	0	1	0	11.4
2	324.4	0	0	0	1	0	12.5
2	324.7	0	0	0	1	0	10.4
2	324.8	0	0	0	1	0	11.6
2	325	0	0	0	1	0	12.8
2	324.7	0	0	0	1	0	12.7
2	324.9	0	0	0	1	0	13.8
2	325	0	0	0	1	0	12.9
2	324.7	0	0	0	1	0	16.6
2	324.4	0	0	0	1	0	14.3
2	324.4	0	0	0	1	0	9.3
2	324.5	0	0	0	1	0	12.1
2	324.4	0	0	0	1	0	14.9
2	324.5	0	0	0	1	0	8.6
2	324.8	0	0	0	1	0	7.2
2	324.8	0	0	0	1	0	10
2	324.7	0	0	0	1	0	11.8
2	324.7	0	0	0	1	0	8.8
2	324.7	0	0	0	1	0	12.2
2	324.7	0	0	0	1	0	9
2	324.8	0	0	0	1	0	8.1
2	325.1	0	0	0	1	0	9.2
2	324.8	0	0	0	1	0	11.6
2	324.8	0	0	0	1	0	9.6
2	325.1	0	0	0	1	0	8
2	325.5	0	0	0	1	0	8.7
2	325.5	0	0	0	1	0	8.3
2	325.5	0	0	0	1	0	7.2
2	325.4	0	0	0	1	0	10.1
2	325.1	0	0	0	1	0	10.2
2	325.1	0	0	0	1	0	8.8
2	324.7	0	0	0	1	0	12.9
2	324.5	0	0	0	1	0	12.6
2	324.3	0	0	0	1	0	13.6
2	324.2	0	0	0	1	0	11.3

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
3:50	1	16.8
3:55	1.1	3.9
4:00	1.1	6.5
4:05	1	10.5
4:10	1.2	22.2
4:15	1.2	18.5
4:20	1.2	21.4
4:25	1	42.7
4:30	1.1	30
4:35	1.3	26.2
4:40	1.1	30
4:45	1	27.8
4:50	0.8	34.9
4:55	1.1	29.6
5:00	1	40.5
5:05	0.9	43.1
5:10	1.1	11.1
5:15	1.7	348.4
5:20	1.5	353.4
5:25	1.5	3.3
5:30	1.6	8.5
5:35	1.5	357
5:40	1.4	358.1
5:45	1.3	359.3
5:50	1.1	354
5:55	1	2.8
6:00	1.2	355.9
6:05	1.3	359.9
6:10	1.2	1.8
6:15	1.3	356.8
6:20	1	5.8
6:25	1.2	12.7
6:30	1.5	17
6:35	1.2	19.5
6:40	1.2	26.7
6:45	1.3	35.3
6:50	1.5	30.2
6:55	1.5	31.8
7:00	1.9	30.9
7:05	1.6	19.5

5/16/2018 - Day 136 > AUTOMET < Station ID: 1

	3	4	5	6	7		8	Rain	Sigma
XXX		XXX	XXX	XXX	XXX	XXX		RA	
XXX		XXX	XXX	XXX	XXX	XXX		XXX	Deg
	2	324.2	0	0	0		1	0	11.7
	2	324.5	0	0	0		1	0	7.7
	2	324.7	0	0	0		1	0	9.7
	2	324.6	0	0	0		1	0	11.6
	2	324.7	0	0	0		1	0	8.2
	2	324.7	0	0	0		1	0	9
	2	324.7	0	0	0		1	0	9
	2	324.6	0	0	0		1	0	14
	2	324.6	0	0	0		1	0	8.8
	2	324.8	0	0	0		1	0	7.8
	2	324.7	0	0	0		1	0	7.7
	2	324.6	0	0	0		1	0	4.6
	2	324.3	0	0	0		1	0	8.8
	2	324.4	0	0	0		1	0	9.7
	2	324.6	0	0	0		1	0	9.4
	2	324.3	0	0	0		1	0	7.7
	2	324.4	0	0	0		1	0	13.6
	2	324.9	0	0	0		1	0	8.2
	2	325.3	0	0	0		1	0	7.8
	2	325.3	0	0	0		1	0	13.6
	2	325.2	0	0	0		1	0	10.6
	2	325.4	0	0	0		1	0	10.9
	2	325.1	0	0	0		1	0	11
	2	325	0	0	0		1	0	10.2
	2	324.7	0	0	0		1	0	10.3
	2	324.4	0	0	0		1	0	14.2
	2	324.5	0	0	0		1	0	10
	2	324.6	0	0	0		1	0	10.6
	2	324.6	0	0	0		1	0	12.6
	2	324.5	0	0	0		1	0	10.6
	2	324.1	0	0	0		1	0	15.6
	2	324	0	0	0		1	0	14.4
	2	324.1	0	0	0		1	0	9.3
	2	323.9	0	0	0		1	0	9.1
	2	323.6	0	0	0		1	0	11.1
	2	323.4	0	0	0		1	0	11.5
	2	323.4	0	0	0		1	0	8.7
	2	323.3	0	0	0		1	0	11.1
	2	323.4	0	0	0		1	0	10.2
	2	323.3	0	0	0		1	0	9.9

7:10	1.6	21.8
7:15	1.1	6.7
7:20	1.2	9.5
7:25	1.5	12.7
7:30	1.4	33.1

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
7:35	1.4	24.9
7:40	1.6	15.9
7:45	1.4	32
7:50	1.5	29.9
7:55	1.5	30.2
8:00	1.4	41.1
8:05	1.3	14.7
8:10	1.6	355.2
8:15	1.6	358.8
8:20	1.7	8.7
8:25	1.6	12.3
8:30	1.9	31.6
8:35	2	24.4
8:40	2	49.9
8:45	1.7	35.8
8:50	1.3	22.9
8:55	1.9	37.7
9:00	1.8	53
9:05	1.9	55.6
9:10	2.1	72.8
9:15	2.4	63.7
9:20	1.9	65.9
9:25	1.7	66.2
9:30	2.7	36.6
9:35	1.7	43.3
9:40	1.5	16.3
9:45	2	35.1
9:50	2.4	46.1
9:55	2	44.9
10:00	1.8	17
10:05	2.2	54.2
10:10	2.3	43.1
10:15	2.1	36.1
10:20	2.1	47.6

2	323.1	0	0	0	1	0	11.5
2	322.6	0	0	0	1	0	16.9
2	322.4	0	0	0	1	0	16.9
2	322.5	0	0	0	1	0	13.5
2	322.3	0	0	0	1	0	13.4

5/16/2018 - Day 136 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	322.1	0	0	0	1	0	13.2
2	322.1	0	0	0	1	0	12.1
2	321.8	0	0	0	1	0	18
2	321.8	0	0	0	1	0	10
2	321.7	0	0	0	1	0	12.2
2	321.6	0	0	0	1	0	14.7
2	321.4	0	0	0	1	0	18.8
2	321.5	0	0	0	1	0	11.2
2	321.4	0	0	0	1	0	16.1
2	321.3	0	0	0	1	0	12.2
2	321.2	0	0	0	1	0	11.5
2	321.2	0	0	0	1	0	14.2
2	321.2	0	0	0	1	0	11.8
2	321.2	0	0	0	1	0	13.4
2	321.1	0	0	0	1	0	15.9
2	320.8	0	0	0	1	0	27.6
2	320.9	0	0	0	1	0	21.1
2	320.9	0	0	0	1	0	22.3
2	320.8	0	0	0	1	0	23
2	320.9	0	0	0	1	0	15.7
2	320.9	0	0	0	1	0	21.5
2	320.7	0	0	0	1	0	21.5
2	320.6	0	0	0	1	0	28.3
2	320.9	0	0	0	1	0	15.1
2	320.5	0	0	0	1	0	28.1
2	320.4	0	0	0	1	0	22.7
2	320.5	0	0	0	1	0	15.5
2	320.6	0	0	0	1	0	14.6
2	320.5	0	0	0	1	0	22.1
2	320.4	0	0	0	1	0	20.2
2	320.5	0	0	0	1	0	16.2
2	320.4	0	0	0	1	0	21.6
2	320.4	0	0	0	1	0	14.8
2	320.4	0	0	0	1	0	23.8

10:25	2.3	35.1
10:30	2.3	49.8
10:35	2.4	27.6
10:40	1.7	48.1
10:45	2.4	33.7
10:50	2.9	37.8
10:55	2.8	54.5
11:00	2.2	71.9
11:05	2.9	18.4
11:10	3.1	27.3
11:15	2.3	17.8

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
11:20	2.3	86.2
11:25	2.6	39.6
11:30	1.9	37.9
11:35	2.2	69.4
11:40	2.1	65.8
11:45	2.3	57.3
11:50	2.9	67.9
11:55	2.2	79
12:00	3.2	72.3
12:05	2.3	94.4
12:10	2.1	42
12:15	2.5	53.2
12:20	2.8	49.5
12:25	3	63.8
12:30	3	73.2
12:35	2.9	68.3
12:40	3.1	48.4
12:45	3	59.7
12:50	3.2	57.7
12:55	2.8	59
13:00	2.6	51.4
13:05	3	86.2
13:10	3.2	55.8
13:15	3.5	68
13:20	4.1	60.6
13:25	2.9	51.3
13:30	3.3	58
13:35	3.4	50.8

2	320.4	0	0	0	1	0	15.4
2	320.4	0	0	0	1	0	24
2	320.4	0	0	0	1	0	14.5
2	320.2	0	0	0	1	0	25.8
2	320.4	0	0	0	1	0	19.7
2	320.4	0	0	0	1	0	15.2
2	320.4	0	0	0	1	0	15.3
2	320.3	0	0	0	1	0	22.3
2	320.4	0	0	0	1	0	21
2	320.5	0	0	0	1	0	14.7
2	320.4	0	0	0	1	0	18.5

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	320.3	0	0	0	1	0	25.4
2	320.4	0	0	0	1	0	31.1
2	320.2	0	0	0	1	0	33.2
2	320.2	0	0	0	1	0	25.5
2	320.1	0	0	0	1	0	30.6
2	320.1	0	0	0	1	0	32.4
2	320.3	0	0	0	1	0	23.1
2	320.1	0	0	0	1	0	27.8
2	320.4	0	0	0	1	0	16.7
2	320.2	0	0	0	1	0	32.6
2	320	0	0	0	1	0	46.8
2	320.2	0	0	0	1	0	30.4
2	320.3	0	0	0	1	0	26.4
2	320.2	0	0	0	1	0	25.3
2	320.3	0	0	0	1	0	16.4
2	320.3	0	0	0	1	0	15.1
2	320.3	0	0	0	1	0	15.8
2	320.2	0	0	0	1	0	21.2
2	320.3	0	0	0	1	0	24.8
2	320.2	0	0	0	1	0	24.2
2	320.2	0	0	0	1	0	30.3
2	320.2	0	0	0	1	0	20
2	320.3	0	0	0	1	0	25
2	320.4	0	0	0	1	0	19.4
2	320.4	0	0	0	1	0	15.9
2	320.3	0	0	0	1	0	17.2
2	320.3	0	0	0	1	0	19.3
2	320.3	0	0	0	1	0	15

13:40	3.1	53.8
13:45	3.8	42.6
13:50	3.6	51.3
13:55	3.8	52.8
14:00	2.7	66
14:05	3	64.2
14:10	3.4	85
14:15	3.4	86.2
14:20	3.4	46.7
14:25	3.1	60
14:30	4.1	66.8
14:35	4.1	61.1
14:40	4	75.9
14:45	2.9	68.6
14:50	3.3	74.3
14:55	4	49.7
15:00	2.9	53.6

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

15:05	3.5	54
15:10	3.7	52
15:15	2.5	52.7
15:20	3.7	39.2
15:25	3.2	52.3
15:30	2.6	79.5
15:35	3	39.6
15:40	2.4	86.2
15:45	3.1	75.1
15:50	2.7	86.9
15:55	2.5	89
16:00	2.6	60.5
16:05	2.8	62.7
16:10	2.4	60
16:15	2.1	66.7
16:20	3	54.9
16:25	2.6	70.8
16:30	3	71.1
16:35	2.5	68.7
16:40	2.4	98
16:45	2.8	75.3
16:50	2.7	69.5

2	320.3	0	0	0	1	0	26.9
2	320.4	0	0	0	1	0	14.3
2	320.4	0	0	0	1	0	16.6
2	320.4	0	0	0	1	0	16.8
2	320.2	0	0	0	1	0	20.2
2	320.2	0	0	0	1	0	28.8
2	320.3	0	0	0	1	0	17.7
2	320.2	0	0	0	1	0	24.8
2	320.3	0	0	0	1	0	14.5
2	320.1	0	0	0	1	0	24.8
2	320.4	0	0	0	1	0	23.9
2	320.4	0	0	0	1	0	20
2	320.4	0	0	0	1	0	17.1
2	320.2	0	0	0	1	0	15.8
2	320.2	0	0	0	1	0	21.2
2	320.4	0	0	0	1	0	17
2	320.1	0	0	0	1	0	24.1

5/16/2018 - Day 136 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	320.3	0	0	0	1	0	16.1
2	320.3	0	0	0	1	0	15.1
2	320	0	0	0	1	0	19.6
2	320.2	0	0	0	1	0	13.6
2	320.2	0	0	0	1	0	24.7
2	319.9	0	0	0	1	0	26.3
2	320.1	0	0	0	1	0	18.3
2	319.9	0	0	0	1	0	21.3
2	320	0	0	0	1	0	23.9
2	319.9	0	0	0	1	0	25.4
2	319.8	0	0	0	1	0	22.9
2	319.8	0	0	0	1	0	24.7
2	319.9	0	0	0	1	0	17.3
2	319.8	0	0	0	1	0	25.6
2	319.7	0	0	0	1	0	35.8
2	319.9	0	0	0	1	0	20.2
2	319.8	0	0	0	1	0	19.9
2	319.9	0	0	0	1	0	21.7
2	319.8	0	0	0	1	0	20.4
2	319.8	0	0	0	1	0	25.4
2	319.8	0	0	0	1	0	25.9
2	319.8	0	0	0	1	0	19

16:55	3.2	49.4
17:00	2.6	80.1
17:05	2.8	69.2
17:10	2.8	69.3
17:15	2.4	70.9
17:20	2.6	62.1
17:25	2.1	73.9
17:30	2.8	70.6
17:35	2.4	85.4
17:40	2.8	75.7
17:45	2.6	77.3
17:50	2.2	75.8
17:55	2.6	78.4
18:00	2.9	50
18:05	2.6	56.8
18:10	2.3	75.5
18:15	2.5	75.5
18:20	2.1	59.7
18:25	2.1	53.1
18:30	2.5	44.7
18:35	2.1	69.1
18:40	2.5	69.3
18:45	2.4	68

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

18:50	2.4	69.6
18:55	2.3	73.1
19:00	2.4	62.6
19:05	2.1	45.7
19:10	2.6	33
19:15	2.5	35.8
19:20	1.9	55.4
19:25	2.1	59.4
19:30	1.8	61.7
19:35	2.1	62.9
19:40	1.8	64.1
19:45	1.6	71.5
19:50	1.6	73.3
19:55	1.6	69.6
20:00	1.6	74.1
20:05	1.5	68.6

2	320	0	0	0	1	0	29.8
2	319.9	0	0	0	1	0	17.1
2	319.9	0	0	0	1	0	19.3
2	319.9	0	0	0	1	0	14.5
2	319.8	0	0	0	1	0	16.8
2	319.8	0	0	0	1	0	24.8
2	319.7	0	0	0	1	0	20.9
2	319.9	0	0	0	1	0	15.6
2	319.8	0	0	0	1	0	24.7
2	319.9	0	0	0	1	0	21.7
2	319.9	0	0	0	1	0	15.7
2	319.8	0	0	0	1	0	21.3
2	319.9	0	0	0	1	0	18.7
2	320	0	0	0	1	0	19.7
2	319.9	0	0	0	1	0	19.5
2	319.9	0	0	0	1	0	22.7
2	319.9	0	0	0	1	0	19
2	319.9	0	0	0	1	0	15
2	319.9	0	0	0	1	0	13.9
2	320	0	0	0	1	0	14.6
2	319.9	0	0	0	1	0	21.3
2	320.1	0	0	0	1	0	13.8
2	320.1	0	0	0	1	0	12.7

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	320.1	0	0	0	1	0	14.6
2	320.1	0	0	0	1	0	16.9
2	320.2	0	0	0	1	0	13.6
2	320.1	0	0	0	1	0	19.3
2	320.3	0	0	0	1	0	12.2
2	320.4	0	0	0	1	0	13.4
2	320.2	0	0	0	1	0	15.7
2	320.3	0	0	0	1	0	12.8
2	320.3	0	0	0	1	0	15.6
2	320.4	0	0	0	1	0	14.4
2	320.3	0	0	0	1	0	12.5
2	320.3	0	0	0	1	0	17.5
2	320.4	0	0	0	1	0	13.1
2	320.4	0	0	0	1	0	15.7
2	320.5	0	0	0	1	0	13
2	320.6	0	0	0	1	0	15.3

20:10	1.6	57.5
20:15	1.3	62.8
20:20	1.4	67.4
20:25	1.2	57.7
20:30	1.3	49.3
20:35	1.3	53.3
20:40	0.8	54
20:45	0.6	38.1
20:50	0.7	92.9
20:55	0.8	108.8
21:00	0.7	111.6
21:05	1	104.4
21:10	1.2	99.4
21:15	1	100.5
21:20	0.8	110.2
21:25	1.1	105.4
21:30	1	93.3
21:35	0.8	86.9
21:40	0.7	94.9
21:45	0.7	95.4
21:50	0.7	99.7
21:55	0.6	116
22:00	0.5	107.7
22:05	0.5	105.1
22:10	0.6	102.4
22:15	0.8	77.6
22:20	0.7	36
22:25	0.6	10.6
22:30	0.9	6.9

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

22:35	0.6	54.6
22:40	0.6	90.1
22:45	0.5	112.2
22:50	0.5	106.5
22:55	0.6	116.7
23:00	0.7	137.6
23:05	0.4	143.9
23:10	0.7	153.1
23:15	0.7	123.9
23:20	0.6	123.4

2	320.7	0	0	0	1	0	10
2	320.7	0	0	0	1	0	16.7
2	320.8	0	0	0	1	0	16
2	320.8	0	0	0	1	0	12.8
2	320.9	0	0	0	1	0	10.3
2	321	0	0	0	1	0	10.1
2	320.8	0	0	0	1	0	13.7
2	320.7	0	0	0	1	0	24.6
2	320.7	0	0	0	1	0	28.4
2	320.9	0	0	0	1	0	14.1
2	320.9	0	0	0	1	0	18.9
2	321.1	0	0	0	1	0	16
2	321.3	0	0	0	1	0	13.6
2	321.3	0	0	0	1	0	15.8
2	321.2	0	0	0	1	0	16
2	321.4	0	0	0	1	0	14.3
2	321.4	0	0	0	1	0	12.9
2	321.3	0	0	0	1	0	15.5
2	321.3	0	0	0	1	0	15.9
2	321.3	0	0	0	1	0	20.2
2	321.3	0	0	0	1	0	17.1
2	321.3	0	0	0	1	0	18.9
2	321.3	0	0	0	1	0	19.8
2	321.3	0	0	0	1	0	20.1
2	321.4	0	0	0	1	0	16.2
2	321.5	0	0	0	1	0	14.4
2	321.6	0	0	0	1	0	13.1
2	321.6	0	0	0	1	0	17.9
2	321.8	0	0	0	1	0	10.3

5/16/2018 - Day 136 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	321.7	0	0	0	1	0	26.1
2	321.6	0	0	0	1	0	11.6
2	321.6	0	0	0	1	0	15.1
2	321.5	0	0	0	1	0	26.9
2	321.7	0	0	0	1	0	23.4
2	321.8	0	0	0	1	0	9.4
2	321.7	0	0	0	1	0	14.2
2	321.8	0	0	0	1	0	18
2	321.9	0	0	0	1	0	17.1
2	321.9	0	0	0	1	0	18.4

23:25	0.7	140
23:30	0.6	124.8
23:35	0.7	153.1
23:40	0.8	181.4
23:45	0.4	195.3
23:50	0.3	200.1
23:55	0.5	177.6
0:00	0.6	151.9

Totals	n/a
Savg	1.8
Vavg	0

Data Recovery

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

0:05	0.5	149.6
0:10	0.3	128.4
0:15	0.3	57.4
0:20	0.5	33.1
0:25	0.4	55.5
0:30	0.2	73
0:35	0.3	225.8
0:40	0.4	258.5
0:45	0.4	308.9
0:50	0.4	348.9
0:55	0.4	342.5
1:00	0.2	335.1
1:05	0.4	279.1
1:10	0.3	279.6
1:15	0.1	2.5
1:20	0	32.5
1:25	0.1	345.1
1:30	0.1	292.9
1:35	0.4	246
1:40	0.6	254.2
1:45	0.5	264
1:50	0.4	218
1:55	0.4	227

2	322	0	0	0	1	0	13.1
2	321.8	0	0	0	1	0	19.5
2	322	0	0	0	1	0	14.4
2	322.1	0	0	0	1	0	11.6
2	321.9	0	0	0	1	0	36.5
2	321.7	0	0	0	1	0	20.8
2	321.8	0	0	0	1	0	28.2
2	322	0	0	0	1	0	13.3

n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	n/a	
64.5	2	321.8	0	0	0	1	n/a	16.6	
48.2	0	321.8	0	0	0	0	n/a	n/a	

100 %

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	322	0	0	0	1	0	21
2	321.8	0	0	0	1	0	24.5
2	321.8	0	0	0	1	0	37.3
2	321.9	0	0	0	1	0	14.9
2	321.9	0	0	0	1	0	13.7
2	321.8	0	0	0	1	0	52.6
2	321.8	0	0	0	1	0	38.3
2	321.9	0	0	0	1	0	11.5
2	321.9	0	0	0	1	0	27.6
2	322	0	0	0	1	0	10.1
2	322	0	0	0	1	0	8.8
2	321.9	0	0	0	1	0	22.2
2	322	0	0	0	1	0	19
2	322	0	0	0	1	0	29
2	321.8	0	0	0	1	0	56.5
2	321.8	0	0	0	1	0	87.1
2	321.8	0	0	0	1	0	50.2
2	321.8	0	0	0	1	0	21.2
2	322.1	0	0	0	1	0	15.2
2	322.4	0	0	0	1	0	9.3
2	322.5	0	0	0	1	0	17.4
2	322.4	0	0	0	1	0	14.5
2	322.4	0	0	0	1	0	14.8

2:00	0.3	240.4
2:05	0.4	252.6
2:10	0.4	268
2:15	0.4	344
2:20	0.4	356.6
2:25	0.2	101
2:30	0.5	151.6
2:35	0.5	214.1
2:40	0.5	265.3
2:45	0.5	269.5
2:50	0.5	302.6
2:55	0.3	296.3
3:00	0.3	227.1
3:05	0.3	274.6
3:10	0.5	335.7
3:15	0.6	337.7
3:20	0.2	306.4
3:25	0.3	296.6
3:30	0.8	335.7
3:35	0.9	341
3:40	0.9	338.6
3:45	0.5	307.6

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

3:50	0.4	272
3:55	0.3	292.6
4:00	0.4	318.3
4:05	0.7	329.3
4:10	0.9	339.7
4:15	0.4	38.1
4:20	0.2	56.4
4:25	0.6	16.8
4:30	1	358
4:35	0.9	0.3
4:40	0.9	346.4
4:45	0.7	339.4
4:50	0.4	303.6
4:55	0.3	294.7
5:00	0.3	219.8
5:05	0.4	252.1
5:10	0.3	283.3

2	322.3	0	0	0	1	0	11.5
2	322.3	0	0	0	1	0	13.1
2	322.3	0	0	0	1	0	16.7
2	322.3	0	0	0	1	0	21.5
2	322.3	0	0	0	1	0	9.6
2	322.2	0	0	0	1	0	61.7
2	322.4	0	0	0	1	0	16.3
2	322.5	0	0	0	1	0	29.7
2	322.5	0	0	0	1	0	16.8
2	322.6	0	0	0	1	0	14.1
2	322.5	0	0	0	1	0	31.5
2	322.5	0	0	0	1	0	13
2	322.3	0	0	0	1	0	41.5
2	322.4	0	0	0	1	0	19.9
2	322.4	0	0	0	1	0	10.4
2	322.7	0	0	0	1	0	6.7
2	322.5	0	0	0	1	0	30.7
2	322.4	0	0	0	1	0	12.2
2	322.8	0	0	0	1	0	10.3
2	323.1	0	0	0	1	0	5.1
2	323.3	0	0	0	1	0	6.5
2	323	0	0	0	1	0	24.1

5/17/2018 - Day 137 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	322.6	0	0	0	1	0	12.1
2	322.5	0	0	0	1	0	24.4
2	322.5	0	0	0	1	0	14
2	322.8	0	0	0	1	0	7.3
2	323.3	0	0	0	1	0	8.6
2	323	0	0	0	1	0	23
2	322.5	0	0	0	1	0	16.6
2	322.7	0	0	0	1	0	17
2	323.3	0	0	0	1	0	5.6
2	323.3	0	0	0	1	0	5.2
2	323.3	0	0	0	1	0	5.4
2	323.3	0	0	0	1	0	7.2
2	322.8	0	0	0	1	0	8.8
2	322.5	0	0	0	1	0	21.1
2	322.5	0	0	0	1	0	24.8
2	322.6	0	0	0	1	0	22.9
2	322.7	0	0	0	1	0	21.4

5:15	0.3	254.4
5:20	0.3	201.3
5:25	0.4	210.9
5:30	0.3	256.8
5:35	0.5	262.2
5:40	0.6	261.4
5:45	0.6	296.7
5:50	0.3	285.3
5:55	0.4	229.8
6:00	0.4	260.8
6:05	0.2	338.2
6:10	0.1	293.3
6:15	0.4	329.7
6:20	0.5	336.5
6:25	0.5	352.5
6:30	0.4	16.4
6:35	0.5	8.7
6:40	0.7	7
6:45	0.8	16.1
6:50	0.8	15.6
6:55	0.9	5.4
7:00	1	358.6
7:05	0.9	358.2
7:10	0.7	1.5
7:15	0.9	10.5
7:20	0.9	9.6
7:25	0.7	4.4
7:30	0.7	27.2

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

7:35	0.8	36.7
7:40	0.8	42.7
7:45	0.9	29.6
7:50	0.9	11.9
7:55	1	2.6
8:00	0.7	8.6
8:05	0.4	16.4
8:10	0.9	32.4
8:15	1	15.3
8:20	0.8	34.8
8:25	0.9	65.7

2	322.6	0	0	0	1	0	26.2
2	322.6	0	0	0	1	0	19.2
2	322.8	0	0	0	1	0	16.4
2	322.6	0	0	0	1	0	27.4
2	322.8	0	0	0	1	0	7.5
2	322.9	0	0	0	1	0	9.8
2	323	0	0	0	1	0	19.5
2	322.7	0	0	0	1	0	43.3
2	322.6	0	0	0	1	0	14.5
2	322.6	0	0	0	1	0	32.4
2	322.4	0	0	0	1	0	43.7
2	322	0	0	0	1	0	59.6
2	322	0	0	0	1	0	8.2
2	322.1	0	0	0	1	0	7.6
2	322	0	0	0	1	0	9
2	321.8	0	0	0	1	0	12.1
2	321.8	0	0	0	1	0	8.4
2	321.8	0	0	0	1	0	9.1
2	321.9	0	0	0	1	0	8.6
2	321.8	0	0	0	1	0	10.1
2	321.8	0	0	0	1	0	9.4
2	321.8	0	0	0	1	0	6.5
2	321.6	0	0	0	1	0	11.2
2	321.3	0	0	0	1	0	14.4
2	321.2	0	0	0	1	0	10.3
2	321.2	0	0	0	1	0	9.7
2	321	0	0	0	1	0	14.4
2	320.8	0	0	0	1	0	19.6

5/17/2018 - Day 137 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	320.8	0	0	0	1	0	15.6
2	320.7	0	0	0	1	0	12.2
2	320.6	0	0	0	1	0	9.5
2	320.5	0	0	0	1	0	11.7
2	320.5	0	0	0	1	0	13.2
2	320.4	0	0	0	1	0	18
2	320.1	0	0	0	1	0	31.7
2	320.1	0	0	0	1	0	12.4
2	320.2	0	0	0	1	0	23
2	320	0	0	0	1	0	26.2
2	320	0	0	0	1	0	21.3

8:30	1.3	57.6
8:35	1.4	72.4
8:40	1.2	73.6
8:45	1.4	82.8
8:50	1.8	108.6
8:55	2.1	78
9:00	2	89.1
9:05	1.8	87.6
9:10	2.6	50.5
9:15	2.5	56.8
9:20	2.8	47.1
9:25	2.6	71.5
9:30	2.7	67.8
9:35	2.6	57.7
9:40	2.7	50.2
9:45	3	71.7
9:50	3.3	56.2
9:55	2.7	38.9
10:00	2.8	30.2
10:05	2.1	39.4
10:10	2.9	50.5
10:15	2.1	38.2
10:20	2.4	48.5
10:25	2.7	41.5
10:30	2.4	33.9
10:35	2.5	48.1
10:40	2.4	71.8
10:45	2.6	52.4
10:50	2.5	42.9
10:55	3	32.7
11:00	2.4	29.1
11:05	3.1	40.9
11:10	2.8	37.6
11:15	2.5	22.1

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

11:20	2.2	54
11:25	2.9	18.7
11:30	2.9	28.7
11:35	2.7	38.2
11:40	2.3	57.3

2	320	0	0	0	1	0	29.6
2	320.1	0	0	0	1	0	18.9
2	319.9	0	0	0	1	0	34.3
2	319.9	0	0	0	1	0	27.1
2	320	0	0	0	1	0	23.1
2	320.1	0	0	0	1	0	19.4
2	320.1	0	0	0	1	0	16.9
2	320	0	0	0	1	0	19.1
2	320.2	0	0	0	1	0	20.2
2	320.3	0	0	0	1	0	19.1
2	320.4	0	0	0	1	0	12.4
2	320.4	0	0	0	1	0	17
2	320.4	0	0	0	1	0	19.6
2	320.3	0	0	0	1	0	22.3
2	320.4	0	0	0	1	0	26
2	320.4	0	0	0	1	0	18.6
2	320.5	0	0	0	1	0	19.8
2	320.4	0	0	0	1	0	13.7
2	320.4	0	0	0	1	0	15.6
2	320.2	0	0	0	1	0	16.3
2	320.4	0	0	0	1	0	13.5
2	320.2	0	0	0	1	0	24
2	320.3	0	0	0	1	0	20.7
2	320.4	0	0	0	1	0	14.9
2	320.3	0	0	0	1	0	17.7
2	320.4	0	0	0	1	0	15.8
2	320.3	0	0	0	1	0	14.7
2	320.4	0	0	0	1	0	23.2
2	320.3	0	0	0	1	0	24.8
2	320.4	0	0	0	1	0	13.4
2	320.2	0	0	0	1	0	18.5
2	320.5	0	0	0	1	0	17.2
2	320.4	0	0	0	1	0	15.2
2	320.4	0	0	0	1	0	12.2

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	320.2	0	0	0	1	0	20.7
2	320.4	0	0	0	1	0	12.8
2	320.4	0	0	0	1	0	17.1
2	320.3	0	0	0	1	0	22.2
2	320.1	0	0	0	1	0	19.3

11:45	2.9	48.4
11:50	3.1	26
11:55	3.2	26.6
12:00	3	29.8
12:05	3.7	27.9
12:10	3.6	12.5
12:15	3.7	34.8
12:20	3	33.9
12:25	3	31.6
12:30	3.6	23.7
12:35	3.5	27.3
12:40	3.4	24.5
12:45	3.3	26.9
12:50	3.5	34.9
12:55	3.4	14.1
13:00	3	8.9
13:05	3.4	22.2
13:10	3.2	23.4
13:15	3.6	30.7
13:20	3.1	23.9
13:25	3	24.7
13:30	3.4	38.9
13:35	3.3	29.6
13:40	3.5	34.5
13:45	3.8	24.9
13:50	3.4	27
13:55	4	22.6
14:00	3.6	24.3
14:05	3.2	16.5
14:10	3.7	39.6
14:15	4	33
14:20	4	46.3
14:25	4.6	40.1
14:30	4.4	41.3
14:35	4.6	34.6
14:40	4.8	40.2
14:45	4.7	31.5
14:50	2.8	20.2
14:55	3.8	16.8
15:00	4.7	29.3

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

2	320.2	0	0	0	1	0	28
2	320.3	0	0	0	1	0	18.6
2	320.3	0	0	0	1	0	16.5
2	320.3	0	0	0	1	0	15.5
2	320.4	0	0	0	1	0	11.9
2	320.4	0	0	0	1	0	17
2	320.4	0	0	0	1	0	24.3
2	320.3	0	0	0	1	0	25.6
2	320.3	0	0	0	1	0	18.6
2	320.4	0	0	0	1	0	13.5
2	320.4	0	0	0	1	0	16.8
2	320.4	0	0	0	1	0	20.6
2	320.4	0	0	0	1	0	14.3
2	320.4	0	0	0	1	0	16.6
2	320.4	0	0	0	1	0	26
2	320.3	0	0	0	1	0	14.4
2	320.4	0	0	0	1	0	14.3
2	320.4	0	0	0	1	0	15.6
2	320.4	0	0	0	1	0	16.6
2	320.4	0	0	0	1	0	12.7
2	320.4	0	0	0	1	0	13.6
2	320.6	0	0	0	1	0	12.6
2	320.6	0	0	0	1	0	12.9
2	320.6	0	0	0	1	0	11.9
2	320.8	0	0	0	1	0	13.7
2	320.7	0	0	0	1	0	14.4
2	320.8	0	0	0	1	0	11.8
2	320.7	0	0	0	1	0	14.1
2	320.5	0	0	0	1	0	19
2	320.6	0	0	0	1	0	24.4
2	320.7	0	0	0	1	0	12.5
2	320.6	0	0	0	1	0	14.8
2	320.8	0	0	0	1	0	11.6
2	320.8	0	0	0	1	0	15.3
2	321	0	0	0	1	0	14.1
2	321	0	0	0	1	0	11.3
2	321.1	0	0	0	1	0	11.1
2	320.4	0	0	0	1	0	19.4
2	320.6	0	0	0	1	0	21.4
2	320.9	0	0	0	1	0	12.2

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg

==========

15:05	4.2	29.9
15:10	4.6	33.9
15:15	4.1	26
15:20	4.7	34.9
15:25	3.8	45.4
15:30	4	23
15:35	4.2	8.1
15:40	4	33.9
15:45	3.8	31.6
15:50	3.5	17.5
15:55	4.4	8.4
16:00	4.4	31.6
16:05	3.6	22.9
16:10	4.4	20.3
16:15	4.8	10
16:20	5.3	6.7
16:25	4.5	21.5
16:30	5.1	17
16:35	4.7	7.6
16:40	4	15.7
16:45	3.7	7
16:50	4.3	19.9
16:55	4.3	31.8
17:00	3.3	30.7
17:05	4.5	33.1
17:10	4	29.6
17:15	3.6	21
17:20	4.5	19.5
17:25	4.3	18.7
17:30	4.7	15.9
17:35	4.4	20.1
17:40	4.5	22.1
17:45	5.1	25.1
17:50	5.1	22.2
17:55	4.7	23.6
18:00	4.7	26.1
18:05	4.3	9.8
18:10	5.2	11.5
18:15	4.1	9.1
18:20	4.2	5.4
18:25	3.7	4.9
18:30	3.5	7.7
18:35	3.8	25.9
18:40	4.6	29.3
18:45	4.1	18.8

2	320.9	0	0	0	1	0	13.3
2	320.9	0	0	0	1	0	12.2
2	320.8	0	0	0	1	0	14
2	321	0	0	0	1	0	13.3
2	320.9	0	0	0	1	0	15.2
2	320.9	0	0	0	1	0	17.4
2	321.1	0	0	0	1	0	13.3
2	321.1	0	0	0	1	0	22
2	321.1	0	0	0	1	0	14.1
2	320.9	0	0	0	1	0	16.7
2	321.2	0	0	0	1	0	14.6
2	321.4	0	0	0	1	0	14.2
2	321.1	0	0	0	1	0	16.8
2	321.4	0	0	0	1	0	12.5
2	321.6	0	0	0	1	0	13.6
2	321.8	0	0	0	1	0	14.9
2	321.6	0	0	0	1	0	11.3
2	321.7	0	0	0	1	0	12
2	321.7	0	0	0	1	0	11.8
2	321.3	0	0	0	1	0	15.8
2	321.2	0	0	0	1	0	18.6
2	321.4	0	0	0	1	0	15.7
2	321.5	0	0	0	1	0	16.5
2	321.1	0	0	0	1	0	13.9
2	321.5	0	0	0	1	0	13.3
2	321.4	0	0	0	1	0	16.9
2	321.3	0	0	0	1	0	15.5
2	321.5	0	0	0	1	0	13.7
2	321.6	0	0	0	1	0	13
2	321.8	0	0	0	1	0	11.5
2	321.8	0	0	0	1	0	13.1
2	321.8	0	0	0	1	0	11.8
2	322.1	0	0	0	1	0	9.8
2	322.4	0	0	0	1	0	12.8
2	322.4	0	0	0	1	0	14.7
2	322.2	0	0	0	1	0	10.9
2	322.2	0	0	0	1	0	12.9
2	322.8	0	0	0	1	0	11.3
2	322.5	0	0	0	1	0	13
2	322.5	0	0	0	1	0	12.8
2	322.4	0	0	0	1	0	12.2
2	322.2	0	0	0	1	0	12.2
2	322.5	0	0	0	1	0	13.4
2	322.9	0	0	0	1	0	10.9
2	322.8	0	0	0	1	0	11.5

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
18:50	3.7	27.3
18:55	4.4	28.3
19:00	4.8	30
19:05	3.9	19.9
19:10	3.9	16.5
19:15	4.3	22.2
19:20	4.3	21.7
19:25	4.3	19.1
19:30	4.3	21.2
19:35	4	23.1
19:40	2.9	22.6
19:45	3.7	34.3
19:50	4.7	30.5
19:55	4.7	28.6
20:00	3.9	20.8
20:05	5.7	30.1
20:10	5.2	23.4
20:15	3.7	29.5
20:20	3.1	29
20:25	3.6	25.3
20:30	3.3	20.6
20:35	2.7	14.9
20:40	2.8	14.4
20:45	3.3	26
20:50	3.5	21.1
20:55	2.8	17.8
21:00	3.1	25.8
21:05	2.8	17.8
21:10	3.1	21.4
21:15	4	26.9
21:20	2.8	31.9
21:25	3.5	26.5
21:30	3.1	26.2
21:35	2.7	25.9
21:40	2.6	29.5
21:45	3.5	22.2
21:50	2.9	22.1
21:55	2.6	21.4
22:00	2.8	19
22:05	2.7	24.5

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	3	4	5	6	7		8	Rain	Sigma
XXX		XXX	XXX	XXX	XXX	XXX		RA	
XXX		XXX	XXX	XXX	XXX	XXX		XXX	Deg
	2	322.6	0	0	0		1	0	12.1
	2	323	0	0	0		1	0	12
	2	323.5	0	0	0		1	0	10.8
	2	323.4	0	0	0		1	0	13.8
	2	323.3	0	0	0		1	0	14.2
	2	323.5	0	0	0		1	0	15.5
	2	324	0	0	0		1	0	12.6
	2	324	0	0	0		1	0	11.9
	2	324.1	0	0	0		1	0	11.6
	2	324.1	0	0	0		1	0	14
	2	323.5	0	0	0		1	0	15
	2	323.9	0	0	0		1	0	12.5
	2	324.8	0	0	0		1	0	10.7
	2	325.2	0	0	0		1	0	11
	2	325.1	0	0	0		1	0	11.2
	2	325.8	0	0	0		1	0	10.1
	2	326.6	0	0	0		1	0	11.3
	2	325.9	0	0	0		1	0	13.7
	2	324.7	0	0	0		1	0	13.2
	2	324.8	0	0	0		1	0	11.2
	2	325.1	0	0	0		1	0	12
	2	324.5	0	0	0		1	0	12.8
	2	324.6	0	0	0		1	0	15.9
	2	324.7	0	0	0		1	0	12.7
	2	325.4	0	0	0		1	0	9.7
	2	325	0	0	0		1	0	16
	2	324.9	0	0	0		1	0	11.9
	2	324.9	0	0	0		1	0	13.6
	2	325	0	0	0		1	0	16.2
	2	325.9	0	0	0		1	0	9.9
	2	325.9	0	0	0		1	0	10.5
	2	325.6	0	0	0		1	0	10
	2	325.5	0	0	0		1	0	11
	2	325.3	0	0	0		1	0	13
	2	325.1	0	0	0		1	0	13.8
	2	325.6	0	0	0		1	0	14.2
	2	325.7	0	0	0		1	0	12.7
	2	325.2	0	0	0		1	0	11.3
	2	325.3	0	0	0		1	0	13
	2	325.4	0	0	0		1	0	10.8

22:10	3.4	24.9
22:15	3.3	24.9
22:20	3.5	23.1
22:25	3.2	23.1
22:30	2.8	28.3

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

22:35	2.9	27.5
22:40	3.1	27.4
22:45	2.4	23.6
22:50	2.2	23
22:55	2.3	17.5
23:00	2.2	19.1
23:05	2.2	17.4
23:10	2.3	19.7
23:15	2.5	19.7
23:20	2.1	11.6
23:25	2.3	14.3
23:30	2.4	20.6
23:35	2.4	22.1
23:40	2.7	24.4
23:45	2.7	23.1
23:50	3	21.1
23:55	2.8	26.1
0:00	3.3	24.6

Totals	n/a	
Savg		2.4
Vavg		0

Data Recovery

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

2	325.6	0	0	0	1	0	11.1
2	326.1	0	0	0	1	0	9.7
2	326.2	0	0	0	1	0	10.2
2	326.2	0	0	0	1	0	9.6
2	325.6	0	0	0	1	0	14.8

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	325.6	0	0	0	1	0	11.1
2	325.8	0	0	0	1	0	10.3
2	325.5	0	0	0	1	0	12.5
2	325	0	0	0	1	0	12.9
2	324.8	0	0	0	1	0	10.4
2	324.7	0	0	0	1	0	14.2
2	324.7	0	0	0	1	0	13.8
2	325	0	0	0	1	0	11.3
2	325.1	0	0	0	1	0	11.9
2	324.9	0	0	0	1	0	14.6
2	324.9	0	0	0	1	0	13.2
2	325.1	0	0	0	1	0	12.7
2	325.4	0	0	0	1	0	12.1
2	325.4	0	0	0	1	0	11.1
2	325.6	0	0	0	1	0	11.6
2	326.1	0	0	0	1	0	10.1
2	326	0	0	0	1	0	12.4
2	326.2	0	0	0	1	0	9.3

n/a	n/a	n/a	n/a	n/a	n/a	n/a		0	n/a
90	2	322.2	0	0	0	1	n/a	16.5	
16.9	0	322.2	0	0	0	0	n/a	n/a	

100 %

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg

0:05	2.1	17
0:10	2.8	17.1
0:15	2.4	15.5
0:20	2.5	12.4
0:25	2.4	15.7
0:30	2.2	16.4
0:35	2.4	23
0:40	2.2	26.3
0:45	2.2	25.5
0:50	2.2	23.5
0:55	2.2	16.3
1:00	2.3	9.9
1:05	2.1	14.2
1:10	2.1	12.7
1:15	2.1	17.3
1:20	2.2	14.2
1:25	2.6	13.1
1:30	2.4	16
1:35	2.9	18.5
1:40	2.6	16.2
1:45	2.8	16.4
1:50	2.6	18.8
1:55	2.1	15.6
2:00	2.3	21.8
2:05	2.3	25.6
2:10	2.5	25.7
2:15	2.5	17.9
2:20	3	15.1
2:25	2.9	16.8
2:30	2.7	17.3
2:35	2.7	22.8
2:40	2.4	25.7
2:45	2.1	27.6
2:50	2.6	28.8
2:55	2.1	27.9
3:00	2.6	26.3
3:05	2.8	24.1
3:10	2.4	21.9
3:15	2.6	22.2
3:20	2	21.5
3:25	2	23.8
3:30	2.4	27.3
3:35	2.4	25.3
3:40	2.3	23
3:45	2.1	17.8

2	325.7	0	0	0	1	0	12.5
2	325.6	0	0	0	1	0	10.9
2	325.5	0	0	0	1	0	13.2
2	325.5	0	0	0	1	0	13.7
2	325.4	0	0	0	1	0	12.7
2	325.2	0	0	0	1	0	13.2
2	325.2	0	0	0	1	0	12.8
2	325.3	0	0	0	1	0	10.9
2	325.2	0	0	0	1	0	11
2	325.2	0	0	0	1	0	11.6
2	325.2	0	0	0	1	0	12
2	325.5	0	0	0	1	0	10.6
2	325.4	0	0	0	1	0	13.1
2	325.1	0	0	0	1	0	12
2	325.1	0	0	0	1	0	11.9
2	325.2	0	0	0	1	0	12.2
2	325.5	0	0	0	1	0	11.5
2	325.6	0	0	0	1	0	11.4
2	326	0	0	0	1	0	10.7
2	326.2	0	0	0	1	0	11.5
2	326.1	0	0	0	1	0	11.1
2	326	0	0	0	1	0	11.8
2	325.6	0	0	0	1	0	12
2	325.5	0	0	0	1	0	12.3
2	325.4	0	0	0	1	0	11.5
2	325.6	0	0	0	1	0	10.8
2	325.8	0	0	0	1	0	11.5
2	326.2	0	0	0	1	0	12
2	326.5	0	0	0	1	0	11.3
2	326.2	0	0	0	1	0	13.4
2	326.2	0	0	0	1	0	10.1
2	325.8	0	0	0	1	0	12.5
2	325.4	0	0	0	1	0	13.4
2	325.5	0	0	0	1	0	9.5
2	325.5	0	0	0	1	0	12.3
2	325.5	0	0	0	1	0	10.4
2	326.1	0	0	0	1	0	9.9
2	325.8	0	0	0	1	0	10.2
2	325.9	0	0	0	1	0	10.6
2	325.4	0	0	0	1	0	14.1
2	325.1	0	0	0	1	0	12.8
2	325.4	0	0	0	1	0	10.2
2	325.5	0	0	0	1	0	9.3
2	325.6	0	0	0	1	0	9.6
2	325.3	0	0	0	1	0	10.9

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
3:50	2.1	22.4
3:55	2.4	21.1
4:00	2.4	20.3
4:05	2.4	21.8
4:10	2.6	23.9
4:15	2.6	19.5
4:20	2.2	20.4
4:25	2.4	21.5
4:30	2.4	21.5
4:35	2.3	15.3
4:40	2.2	16.5
4:45	2.3	17.8
4:50	2.5	16.9
4:55	2.4	25.5
5:00	2.3	25.4
5:05	2.3	26.2
5:10	2.3	28.8
5:15	2.5	29.1
5:20	2.3	25.3
5:25	2.5	26.2
5:30	2.2	28
5:35	2.2	29.9
5:40	2.4	30.6
5:45	2.5	25.7
5:50	2.5	22.2
5:55	2.3	19.3
6:00	2.3	22.5
6:05	3	23.9
6:10	2.6	21.9
6:15	3	19.9
6:20	2.6	19.2
6:25	2.6	20
6:30	3	22.3
6:35	2.9	25.1
6:40	3.3	22.7
6:45	3.1	20.7
6:50	2.9	21.5
6:55	3.1	24.5
7:00	3.1	20
7:05	3.2	23.4
7:10	2.7	24

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	3	4	5	6	7		8	Rain	Sigma
XXX		XXX	XXX	XXX	XXX	XXX		RA	
XXX		XXX	XXX	XXX	XXX	XXX		XXX	Deg
	2	325.1	0	0	0		1	0	12.6
	2	325.3	0	0	0		1	0	10.5
	2	325.5	0	0	0		1	0	10.8
	2	325.5	0	0	0		1	0	12.5
	2	325.5	0	0	0		1	0	11
	2	325.7	0	0	0		1	0	10
	2	325.3	0	0	0		1	0	12.6
	2	325.2	0	0	0		1	0	10.7
	2	325.3	0	0	0		1	0	10
	2	325.2	0	0	0		1	0	12.1
	2	325.1	0	0	0		1	0	12.7
	2	324.8	0	0	0		1	0	10.8
	2	325.3	0	0	0		1	0	12.2
	2	325.2	0	0	0		1	0	11.8
	2	325	0	0	0		1	0	10.4
	2	325	0	0	0		1	0	11.5
	2	324.8	0	0	0		1	0	11.7
	2	325.1	0	0	0		1	0	10.3
	2	324.9	0	0	0		1	0	11.3
	2	325.1	0	0	0		1	0	10.2
	2	324.9	0	0	0		1	0	9.9
	2	324.8	0	0	0		1	0	11.2
	2	324.9	0	0	0		1	0	11.1
	2	325.1	0	0	0		1	0	10.4
	2	325.2	0	0	0		1	0	10.1
	2	324.9	0	0	0		1	0	9.1
	2	324.7	0	0	0		1	0	10.5
	2	325.4	0	0	0		1	0	10.4
	2	325.4	0	0	0		1	0	12.2
	2	325.5	0	0	0		1	0	9.2
	2	325.3	0	0	0		1	0	12.5
	2	325.3	0	0	0		1	0	13.9
	2	325.1	0	0	0		1	0	10.4
	2	325.4	0	0	0		1	0	10.4
	2	325.6	0	0	0		1	0	12
	2	325.5	0	0	0		1	0	10.4
	2	325.2	0	0	0		1	0	13.5
	2	325.3	0	0	0		1	0	12.8
	2	325.1	0	0	0		1	0	12.8
	2	325	0	0	0		1	0	11.2
	2	324.7	0	0	0		1	0	13.5

7:15	3.1	24.5
7:20	3.7	32.5
7:25	3.1	35.3
7:30	4.5	34.5

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

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7:35	3.9	29.4
7:40	3.8	31.6
7:45	3.5	34.8
7:50	3.7	36.8
7:55	4.7	34.3
8:00	4.1	43.1
8:05	4.7	46.3
8:10	4	49.9
8:15	4	47.8
8:20	4.1	47.7
8:25	4.5	46.9
8:30	5.1	41.8
8:35	4.6	40.4
8:40	5.8	43.9
8:45	4.7	45.6
8:50	5.1	45.8
8:55	4.7	45.8
9:00	4.3	39.7
9:05	4.5	48.8
9:10	4.6	47.9
9:15	4.8	49
9:20	4.6	54.1
9:25	5.1	46.7
9:30	4.6	60
9:35	4.6	50.3
9:40	5.2	49.3
9:45	4.5	48.1
9:50	4.8	47.5
9:55	4.7	47.6
10:00	4.7	41.8
10:05	4.7	39.6
10:10	5	51
10:15	4.4	53.3
10:20	4.7	46.2
10:25	4.1	58.6

2	324.5	0	0	0	1	0	14.4
2	324.7	0	0	0	1	0	11.3
2	324.3	0	0	0	1	0	13.9
2	324.8	0	0	0	1	0	12.7

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	324.7	0	0	0	1	0	12.5
2	324.3	0	0	0	1	0	12
2	324	0	0	0	1	0	18.1
2	324	0	0	0	1	0	16
2	324.2	0	0	0	1	0	13.3
2	324.3	0	0	0	1	0	12.3
2	324.2	0	0	0	1	0	11.6
2	323.9	0	0	0	1	0	13.3
2	323.6	0	0	0	1	0	15.2
2	323.6	0	0	0	1	0	14.9
2	323.6	0	0	0	1	0	11
2	324	0	0	0	1	0	11.6
2	323.7	0	0	0	1	0	13
2	324.1	0	0	0	1	0	11.3
2	323.8	0	0	0	1	0	12.2
2	323.7	0	0	0	1	0	13.2
2	323.5	0	0	0	1	0	11.9
2	323.4	0	0	0	1	0	11
2	323.1	0	0	0	1	0	17.4
2	323.3	0	0	0	1	0	11.3
2	323.3	0	0	0	1	0	13
2	323.3	0	0	0	1	0	17.8
2	323	0	0	0	1	0	17.1
2	323.1	0	0	0	1	0	13.3
2	322.8	0	0	0	1	0	15.9
2	323.1	0	0	0	1	0	10.2
2	322.7	0	0	0	1	0	12
2	322.8	0	0	0	1	0	15.6
2	322.6	0	0	0	1	0	17.1
2	322.7	0	0	0	1	0	12.4
2	322.7	0	0	0	1	0	13
2	322.8	0	0	0	1	0	16.8
2	322.5	0	0	0	1	0	15
2	322.5	0	0	0	1	0	12.4
2	322.3	0	0	0	1	0	12.8

10:30	3.8	49
10:35	4	38.9
10:40	4.1	54.8
10:45	3.8	49.6
10:50	3.5	45.6
10:55	4.2	46.8
11:00	3.8	52
11:05	4.1	55.4
11:10	4.2	45.7
11:15	3.8	54.2

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
11:20	4	50.9
11:25	4.5	48.5
11:30	3.2	51.3
11:35	4.2	48.6
11:40	3.7	50.3
11:45	4.3	38
11:50	3.9	49.9
11:55	3.5	50.8
12:00	4.1	33.9
12:05	4.3	39.8
12:10	4.5	47.4
12:15	3.8	32.4
12:20	4.3	29.5
12:25	4.4	30.5
12:30	4.7	37.2
12:35	4.5	40
12:40	4.8	34.5
12:45	4.1	33.7
12:50	4.7	43.8
12:55	4.9	31.8
13:00	5.9	49.7
13:05	5.1	44.6
13:10	4.4	44.3
13:15	4.4	38.4
13:20	4.5	57.1
13:25	4.6	56.1
13:30	5	52.8
13:35	4.1	61.8
13:40	3.5	68.2

2	321.9	0	0	0	1	0	20.9
2	322.1	0	0	0	1	0	12.2
2	322.1	0	0	0	1	0	20.1
2	321.8	0	0	0	1	0	16.6
2	321.7	0	0	0	1	0	15
2	321.8	0	0	0	1	0	14.4
2	321.8	0	0	0	1	0	16.1
2	321.6	0	0	0	1	0	15.6
2	321.7	0	0	0	1	0	18.5
2	321.7	0	0	0	1	0	16.8

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	321.6	0	0	0	1	0	19.3
2	321.8	0	0	0	1	0	14.6
2	321.3	0	0	0	1	0	18.8
2	321.6	0	0	0	1	0	10.9
2	321.5	0	0	0	1	0	18.2
2	321.8	0	0	0	1	0	13
2	321.6	0	0	0	1	0	17.7
2	321.6	0	0	0	1	0	16.4
2	321.6	0	0	0	1	0	16.6
2	321.8	0	0	0	1	0	10.1
2	321.9	0	0	0	1	0	12
2	321.8	0	0	0	1	0	15
2	321.9	0	0	0	1	0	12.8
2	321.9	0	0	0	1	0	11.9
2	322.1	0	0	0	1	0	13.8
2	322.1	0	0	0	1	0	10.6
2	322.3	0	0	0	1	0	10.9
2	321.8	0	0	0	1	0	14.2
2	322.2	0	0	0	1	0	16.4
2	322.2	0	0	0	1	0	20.6
2	322.5	0	0	0	1	0	13
2	322.2	0	0	0	1	0	12.7
2	321.9	0	0	0	1	0	13.4
2	321.8	0	0	0	1	0	13.5
2	321.8	0	0	0	1	0	14.7
2	322	0	0	0	1	0	14.3
2	322.1	0	0	0	1	0	13.5
2	321.9	0	0	0	1	0	13.8
2	321.6	0	0	0	1	0	16.1

13:45	3.7	60.2
13:50	4.7	42.4
13:55	4.2	33.9
14:00	4.4	28.8
14:05	3.9	52
14:10	4.2	46.9
14:15	4.7	36.1
14:20	3.8	36.7
14:25	3.9	34.8
14:30	4	37.3
14:35	4.5	39.2
14:40	3.4	41.8
14:45	3.9	22.9
14:50	3.8	23.1
14:55	3.9	23.6
15:00	3.6	28.1

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

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15:05	3	30.7
15:10	3.2	34.6
15:15	3.3	26.5
15:20	2.2	23.5
15:25	3	23.5
15:30	2.3	16.4
15:35	2.6	20.6
15:40	2.4	25.8
15:45	2.5	18.3
15:50	2.6	10.5
15:55	2.8	9.6
16:00	3.6	16.7
16:05	3.7	14.8
16:10	3.4	18.6
16:15	3.7	9.2
16:20	3.3	10.3
16:25	2.9	21.2
16:30	3.1	28.4
16:35	3.3	27.4
16:40	3.6	30.3
16:45	2.7	21.4
16:50	3.4	29
16:55	3	30.8

2	321.7	0	0	0	1	0	19.6
2	321.9	0	0	0	1	0	17.2
2	321.8	0	0	0	1	0	13.2
2	321.8	0	0	0	1	0	12.2
2	321.9	0	0	0	1	0	16.4
2	321.8	0	0	0	1	0	12.9
2	322.4	0	0	0	1	0	12
2	322	0	0	0	1	0	12.7
2	322.1	0	0	0	1	0	16
2	322.3	0	0	0	1	0	11.9
2	322.6	0	0	0	1	0	14.4
2	322.1	0	0	0	1	0	16.5
2	322.4	0	0	0	1	0	12.9
2	322.5	0	0	0	1	0	11.6
2	322.5	0	0	0	1	0	10.7
2	322.5	0	0	0	1	0	14.1

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	322.2	0	0	0	1	0	15.5
2	322.3	0	0	0	1	0	12.9
2	322.5	0	0	0	1	0	12.1
2	322.2	0	0	0	1	0	15
2	322.6	0	0	0	1	0	12
2	322.6	0	0	0	1	0	12.7
2	322.9	0	0	0	1	0	12
2	322.8	0	0	0	1	0	11.6
2	322.9	0	0	0	1	0	13.2
2	323.3	0	0	0	1	0	13.4
2	323.2	0	0	0	1	0	17.8
2	323.6	0	0	0	1	0	12.4
2	324	0	0	0	1	0	11
2	323.7	0	0	0	1	0	13.6
2	323.9	0	0	0	1	0	12.5
2	323.8	0	0	0	1	0	12.4
2	323.3	0	0	0	1	0	15.2
2	323.3	0	0	0	1	0	13.5
2	323.6	0	0	0	1	0	12.3
2	323.8	0	0	0	1	0	9.8
2	323.2	0	0	0	1	0	11.9
2	323.3	0	0	0	1	0	14.3
2	323.3	0	0	0	1	0	14

17:00	4.2	33.8
17:05	3.4	22.9
17:10	3	27.8
17:15	3.3	18.1
17:20	3.8	18.5
17:25	3.6	18.9
17:30	3.9	21.3
17:35	3.4	22.5
17:40	3.4	22.6
17:45	3.3	16.2
17:50	3.5	27.1
17:55	3.6	26.6
18:00	3.8	28.1
18:05	3.8	32.8
18:10	3.8	28.6
18:15	3.2	33.8
18:20	2.7	37.4
18:25	2.5	38.2
18:30	3.1	27.9
18:35	2.5	18.9
18:40	1.8	32.6
18:45	2	31.6

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

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18:50	2.1	27.5
18:55	2.6	31
19:00	2.8	26.7
19:05	2.4	29.2
19:10	2.8	33.2
19:15	2.8	29.4
19:20	3.2	34.2
19:25	2.9	31.6
19:30	2.4	33.3
19:35	2.8	34.5
19:40	3.2	44
19:45	2.4	47.8
19:50	2.6	55.2
19:55	2.6	59.3
20:00	2.6	59.8
20:05	2.5	58.5
20:10	2.4	59.9

2	324.1	0	0	0	1	0	10.4
2	324	0	0	0	1	0	13
2	323.7	0	0	0	1	0	14.4
2	323.9	0	0	0	1	0	13.1
2	324.1	0	0	0	1	0	12.8
2	324.1	0	0	0	1	0	11.8
2	324.5	0	0	0	1	0	11.4
2	324.4	0	0	0	1	0	10.8
2	324	0	0	0	1	0	14.9
2	324.1	0	0	0	1	0	13.6
2	324.5	0	0	0	1	0	10.7
2	324.4	0	0	0	1	0	8.6
2	324.6	0	0	0	1	0	9.7
2	324.5	0	0	0	1	0	9.7
2	325	0	0	0	1	0	12.4
2	324.2	0	0	0	1	0	13.9
2	324	0	0	0	1	0	11.2
2	323.8	0	0	0	1	0	12.2
2	323.9	0	0	0	1	0	11.6
2	323.9	0	0	0	1	0	13.4
2	323.2	0	0	0	1	0	16.7
2	323.2	0	0	0	1	0	15.3

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	323.3	0	0	0	1	0	15.4
2	323.7	0	0	0	1	0	13.1
2	324	0	0	0	1	0	8.5
2	323.8	0	0	0	1	0	10.1
2	324	0	0	0	1	0	14.4
2	324	0	0	0	1	0	10.7
2	324.4	0	0	0	1	0	13.8
2	324.3	0	0	0	1	0	11.5
2	324	0	0	0	1	0	11.6
2	324	0	0	0	1	0	11.4
2	324.7	0	0	0	1	0	11.1
2	324.3	0	0	0	1	0	16.7
2	324	0	0	0	1	0	15.4
2	324.2	0	0	0	1	0	12.7
2	324.2	0	0	0	1	0	11.3
2	324.1	0	0	0	1	0	11
2	324.1	0	0	0	1	0	13.1

20:15	2.3	59.6
20:20	2.4	58.1
20:25	2.6	57.6
20:30	2.4	57.8
20:35	2.8	57.4
20:40	3.3	58.8
20:45	3.3	57
20:50	3.1	60.5
20:55	3.1	68.3
21:00	2.8	63.1
21:05	2.6	66.7
21:10	2.6	64.7
21:15	2.5	64
21:20	2.1	64.8
21:25	2.5	65.9
21:30	3.1	62
21:35	3	67.4
21:40	2.5	63.8
21:45	2.9	61.1
21:50	3.4	59.3
21:55	2.9	65.4
22:00	3.1	63.9
22:05	3.7	63.3
22:10	2.8	67.2
22:15	2.6	57.4
22:20	2.7	64.1
22:25	2.2	63.9
22:30	2.7	66.5

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

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22:35	3.3	62.8
22:40	2.5	70.2
22:45	2.8	59.4
22:50	2.6	60
22:55	3.2	63.2
23:00	2.7	60
23:05	2.6	62.2
23:10	2.3	63.9
23:15	2.2	60
23:20	2.4	54.3
23:25	2.3	51.2

2	324	0	0	0	1	0	12.5
2	324	0	0	0	1	0	14
2	324.1	0	0	0	1	0	12.2
2	324.1	0	0	0	1	0	11.8
2	324.2	0	0	0	1	0	12.8
2	324.6	0	0	0	1	0	13.5
2	324.7	0	0	0	1	0	12.8
2	324.6	0	0	0	1	0	12.9
2	324.5	0	0	0	1	0	16.7
2	324.2	0	0	0	1	0	12.7
2	324	0	0	0	1	0	16.8
2	323.9	0	0	0	1	0	16.9
2	324	0	0	0	1	0	20.2
2	323.6	0	0	0	1	0	19.6
2	323.6	0	0	0	1	0	18.4
2	324	0	0	0	1	0	13.8
2	324.3	0	0	0	1	0	15.7
2	323.8	0	0	0	1	0	16.4
2	324	0	0	0	1	0	15
2	324.2	0	0	0	1	0	13.8
2	324.2	0	0	0	1	0	15.9
2	324	0	0	0	1	0	13.9
2	324.7	0	0	0	1	0	12.5
2	324.2	0	0	0	1	0	16.6
2	323.7	0	0	0	1	0	14
2	324	0	0	0	1	0	19.9
2	323.6	0	0	0	1	0	18.9
2	323.8	0	0	0	1	0	14.6

5/18/2018 - Day 138 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	324.3	0	0	0	1	0	16.4
2	323.9	0	0	0	1	0	15.7
2	323.9	0	0	0	1	0	14.3
2	324	0	0	0	1	0	12.2
2	324.3	0	0	0	1	0	13.7
2	324	0	0	0	1	0	15.2
2	324	0	0	0	1	0	12.7
2	323.9	0	0	0	1	0	15.3
2	323.5	0	0	0	1	0	14.5
2	323.8	0	0	0	1	0	14.9
2	323.8	0	0	0	1	0	11.2

23:30	2.3	57.4
23:35	2.2	55.9
23:40	2.2	56.2
23:45	2.1	58.3
23:50	2.4	61
23:55	2.5	62.8
0:00	2.1	58

Totals	n/a	
Savg		3.2
Vavg		0

Data Recovery

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

0:05	2.7	51.8
0:10	2.2	42.9
0:15	2.6	46.2
0:20	2.4	40.5
0:25	2.6	43.3
0:30	2.1	37.3
0:35	2.1	34
0:40	2.3	34.8
0:45	2.4	31.5
0:50	2.1	30.7
0:55	2.1	24.1
1:00	2.2	27.7
1:05	2.4	32.8
1:10	2.1	36.7
1:15	1.8	33.3
1:20	1.6	33.1
1:25	2	27.9
1:30	2	32.3
1:35	2.2	32.4
1:40	2.4	30
1:45	2.1	37.3
1:50	2.9	40.3
1:55	2.1	41.3
2:00	2.3	40.9

2	323.6	0	0	0	1	0	13
2	323.7	0	0	0	1	0	11.5
2	323.6	0	0	0	1	0	11.7
2	323.5	0	0	0	1	0	15.8
2	323.7	0	0	0	1	0	12.4
2	323.9	0	0	0	1	0	13.5
2	323.7	0	0	0	1	0	11.7

n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	n/a	
36.6	2	323.9	0	0	0	1	n/a	13.1	
36.5	0	323.9	0	0	0	0	n/a	n/a	

100 %

5/19/2018 - Day 139 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	323.9	0	0	0	1	0	11.8
2	323.8	0	0	0	1	0	15.2
2	324	0	0	0	1	0	10.4
2	323.8	0	0	0	1	0	12.3
2	324	0	0	0	1	0	10
2	323.7	0	0	0	1	0	11.4
2	323.6	0	0	0	1	0	13.3
2	323.7	0	0	0	1	0	11.3
2	324	0	0	0	1	0	11.9
2	323.8	0	0	0	1	0	11.2
2	323.7	0	0	0	1	0	13.6
2	323.7	0	0	0	1	0	12.2
2	324	0	0	0	1	0	13.8
2	323.9	0	0	0	1	0	11.5
2	323.5	0	0	0	1	0	11.9
2	323.3	0	0	0	1	0	15
2	323.7	0	0	0	1	0	10.7
2	323.5	0	0	0	1	0	12.2
2	323.8	0	0	0	1	0	12
2	324	0	0	0	1	0	10.3
2	323.9	0	0	0	1	0	13.1
2	324.2	0	0	0	1	0	8.8
2	324.1	0	0	0	1	0	11
2	323.9	0	0	0	1	0	12.2

2:05	2.3	40.3
2:10	2.5	43.6
2:15	2	42.3
2:20	1.9	56.1
2:25	1.3	43.9
2:30	1.4	41.1
2:35	1.5	48
2:40	1.5	57.6
2:45	1.6	60.8
2:50	1.8	59.9
2:55	1.8	57.1
3:00	2.1	47.4
3:05	1.9	45.7
3:10	1.3	35.3
3:15	1.1	14.3
3:20	1.2	18.9
3:25	1.4	20.7
3:30	1.6	24.9
3:35	1.5	27.3
3:40	1.6	20.8
3:45	1.3	32.4

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
3:50	1.3	25.2
3:55	1.2	23.5
4:00	1.1	10.1
4:05	0.9	1
4:10	0.7	350.2
4:15	1	13.9
4:20	1	22.8
4:25	1	4.9
4:30	1	340.3
4:35	1.1	330.8
4:40	1.4	351
4:45	1.2	327.3
4:50	1.6	346.7
4:55	1.2	351.8
5:00	1.5	326.2
5:05	1.6	320
5:10	1.2	337.4
5:15	1	7.1

2	324	0	0	0	1	0	10.1
2	324.1	0	0	0	1	0	11
2	323.9	0	0	0	1	0	11.8
2	323.6	0	0	0	1	0	15.7
2	323.3	0	0	0	1	0	14.5
2	323	0	0	0	1	0	15.3
2	323.2	0	0	0	1	0	14.7
2	323.3	0	0	0	1	0	13.2
2	323.3	0	0	0	1	0	13.3
2	323.4	0	0	0	1	0	11.6
2	323.5	0	0	0	1	0	13.4
2	323.8	0	0	0	1	0	10.3
2	323.8	0	0	0	1	0	13.6
2	323.3	0	0	0	1	0	16
2	322.9	0	0	0	1	0	13.8
2	322.8	0	0	0	1	0	12.9
2	323	0	0	0	1	0	12.5
2	323.4	0	0	0	1	0	8.6
2	323.3	0	0	0	1	0	9.4
2	323.3	0	0	0	1	0	7.5
2	323.2	0	0	0	1	0	14.3

5/19/2018 - Day 139 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	323	0	0	0	1	0	13.9
2	323	0	0	0	1	0	14.7
2	322.9	0	0	0	1	0	16.4
2	322.6	0	0	0	1	0	17.5
2	322.5	0	0	0	1	0	14.6
2	322.5	0	0	0	1	0	10.9
2	322.7	0	0	0	1	0	8.1
2	322.7	0	0	0	1	0	13.3
2	322.6	0	0	0	1	0	12.6
2	322.7	0	0	0	1	0	19
2	323	0	0	0	1	0	8.9
2	322.9	0	0	0	1	0	14.9
2	323.2	0	0	0	1	0	13.4
2	323.2	0	0	0	1	0	13.5
2	323.1	0	0	0	1	0	11.5
2	323.3	0	0	0	1	0	11.3
2	323	0	0	0	1	0	12.6
2	322.8	0	0	0	1	0	17.4

5:20	0.9	345.8
5:25	0.9	17
5:30	1.3	20.7
5:35	0.8	16.2
5:40	0.9	21.5
5:45	0.8	8.1
5:50	1.3	3.4
5:55	0.9	345.8
6:00	1	339.5
6:05	1	327.6
6:10	1.3	341.6
6:15	1.2	341.2
6:20	1.4	330.6
6:25	1	316.1
6:30	0.9	356.5
6:35	0.9	3.5
6:40	0.9	13.9
6:45	0.9	26
6:50	0.7	32
6:55	1	25.6
7:00	0.9	27.9
7:05	1.5	17.1
7:10	1.5	6.2
7:15	1.4	1.1
7:20	1	16.4
7:25	0.8	356
7:30	1.1	321.7

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

7:35	0.8	347.6
7:40	0.7	359.3
7:45	0.9	30.9
7:50	1	33
7:55	0.9	32
8:00	0.7	49.8
8:05	0.7	45.5
8:10	0.8	28.9
8:15	0.6	34
8:20	0.6	18.3
8:25	0.8	13.5
8:30	0.7	345

2	322.6	0	0	0	1	0	11.9
2	322.6	0	0	0	1	0	18.8
2	323	0	0	0	1	0	9.2
2	322.8	0	0	0	1	0	16.1
2	322.6	0	0	0	1	0	9.4
2	322.6	0	0	0	1	0	14.8
2	322.9	0	0	0	1	0	6.6
2	322.7	0	0	0	1	0	19
2	322.8	0	0	0	1	0	18.5
2	322.7	0	0	0	1	0	24.3
2	323	0	0	0	1	0	18.3
2	323	0	0	0	1	0	16
2	323.3	0	0	0	1	0	15.8
2	322.9	0	0	0	1	0	17.1
2	322.7	0	0	0	1	0	17
2	322.7	0	0	0	1	0	22.7
2	322.7	0	0	0	1	0	15.3
2	322.6	0	0	0	1	0	16.2
2	322.5	0	0	0	1	0	13.9
2	322.6	0	0	0	1	0	12.1
2	322.6	0	0	0	1	0	8.8
2	323	0	0	0	1	0	11.4
2	323.3	0	0	0	1	0	16.1
2	323.1	0	0	0	1	0	14
2	322.9	0	0	0	1	0	23.8
2	322.6	0	0	0	1	0	32
2	322.6	0	0	0	1	0	13.5

5/19/2018 - Day 139 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	322.5	0	0	0	1	0	31.4
2	322.5	0	0	0	1	0	15.9
2	322.5	0	0	0	1	0	14.4
2	322.6	0	0	0	1	0	10.5
2	322.6	0	0	0	1	0	12
2	322.5	0	0	0	1	0	11
2	322.5	0	0	0	1	0	13.5
2	322.4	0	0	0	1	0	13
2	322.5	0	0	0	1	0	22.5
2	322.2	0	0	0	1	0	25.4
2	322.4	0	0	0	1	0	11.7
2	322.3	0	0	0	1	0	12.6

8:35	0.5	288.2
8:40	0.8	322.3
8:45	0.7	306.4
8:50	0.9	260.7
8:55	0.9	245.8
9:00	0.8	236.9
9:05	0.8	251.1
9:10	0.9	227
9:15	0.8	228.7
9:20	1	232
9:25	0.9	231.3
9:30	1	205.6
9:35	0.6	228
9:40	1.1	178.7
9:45	1.3	199.4
9:50	0.9	238.4
9:55	1.6	225.8
10:00	0.7	229
10:05	0.9	194.8
10:10	1.5	191.6
10:15	1.6	182.2
10:20	1.5	181.6
10:25	1.7	212.3
10:30	1.3	237.8
10:35	1.6	253.8
10:40	1.6	215.6
10:45	2.3	223.1
10:50	2.1	237.7
10:55	2.4	239.2
11:00	2.6	250.3
11:05	3.3	261.5
11:10	2.9	246
11:15	2.8	257.4

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

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11:20	2.1	253.2
11:25	2	250.7
11:30	2.2	249.8
11:35	2.5	249.8
11:40	2.9	264.4
11:45	2.8	271.1

2	322	0	0	0	1	0	25
2	322.2	0	0	0	1	0	35.3
2	322.2	0	0	0	1	0	32.7
2	322.2	0	0	0	1	0	18.9
2	322.3	0	0	0	1	0	27.1
2	322	0	0	0	1	0	21.4
2	322	0	0	0	1	0	32
2	322	0	0	0	1	0	36.9
2	321.9	0	0	0	1	0	53.5
2	322	0	0	0	1	0	30.9
2	322	0	0	0	1	0	22.9
2	322	0	0	0	1	0	19.4
2	321.7	0	0	0	1	0	41.1
2	321.8	0	0	0	1	0	27.1
2	322	0	0	0	1	0	32
2	321.8	0	0	0	1	0	25.7
2	321.9	0	0	0	1	0	24
2	321.7	0	0	0	1	0	38.6
2	321.4	0	0	0	1	0	37
2	321.9	0	0	0	1	0	16
2	321.9	0	0	0	1	0	18.2
2	321.8	0	0	0	1	0	22.6
2	322	0	0	0	1	0	24.4
2	321.7	0	0	0	1	0	17.9
2	321.8	0	0	0	1	0	27.6
2	321.8	0	0	0	1	0	27.9
2	322	0	0	0	1	0	20.9
2	322	0	0	0	1	0	15.6
2	322.2	0	0	0	1	0	17.2
2	322.2	0	0	0	1	0	21
2	322.5	0	0	0	1	0	13.8
2	322.6	0	0	0	1	0	14.9
2	322.5	0	0	0	1	0	12.9

5/19/2018 - Day 139 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	322.3	0	0	0	1	0	17.6
2	322.1	0	0	0	1	0	33
2	322.1	0	0	0	1	0	23.4
2	322.1	0	0	0	1	0	21.5
2	322.5	0	0	0	1	0	17.2
2	322.2	0	0	0	1	0	14.1

11:50	3.2	266.5
11:55	2.6	245.4
12:00	2.5	235.3
12:05	3.2	257.9
12:10	3	252.3
12:15	3	256.4
12:20	3.3	268.2
12:25	3.4	277
12:30	2.6	262.2
12:35	3.3	269.1
12:40	3.1	270.6
12:45	2.9	268.7
12:50	3.4	272.9
12:55	3.3	259
13:00	3.4	268.5
13:05	3.4	265.1
13:10	3.6	265.8
13:15	3.1	279.7
13:20	2.7	274.6
13:25	2.8	283.6
13:30	2.5	263
13:35	2.3	278.9
13:40	2.1	272.4
13:45	2.4	279.1
13:50	2.7	276.8
13:55	3	276.1
14:00	2.4	267.1
14:05	2.9	248.2
14:10	2.3	249
14:15	2	292.2
14:20	2.5	286.4
14:25	2.4	288.8
14:30	2.6	295.8
14:35	2.5	298
14:40	1.9	299.4
14:45	2.2	276
14:50	2.2	286.1
14:55	2.6	280.1
15:00	2.4	265.6

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

2	322.7	0	0	0	1	0	13.1
2	322.5	0	0	0	1	0	23
2	322.3	0	0	0	1	0	18.2
2	322.5	0	0	0	1	0	14
2	322.8	0	0	0	1	0	19.3
2	322.7	0	0	0	1	0	16.7
2	322.9	0	0	0	1	0	17.2
2	323	0	0	0	1	0	15.9
2	322.7	0	0	0	1	0	20.1
2	322.9	0	0	0	1	0	15
2	323.1	0	0	0	1	0	13.8
2	322.6	0	0	0	1	0	14.1
2	323.1	0	0	0	1	0	13.8
2	323.2	0	0	0	1	0	14.2
2	323.3	0	0	0	1	0	15.1
2	323.1	0	0	0	1	0	14.7
2	323.4	0	0	0	1	0	14.3
2	323	0	0	0	1	0	11.6
2	322.7	0	0	0	1	0	16.8
2	322.7	0	0	0	1	0	20.9
2	322.5	0	0	0	1	0	16.2
2	322.1	0	0	0	1	0	34.4
2	322.1	0	0	0	1	0	29.2
2	321.8	0	0	0	1	0	17.1
2	322.2	0	0	0	1	0	16
2	322.1	0	0	0	1	0	11.3
2	322	0	0	0	1	0	17.8
2	321.9	0	0	0	1	0	16.1
2	321.8	0	0	0	1	0	28.7
2	321.6	0	0	0	1	0	21.3
2	321.7	0	0	0	1	0	19.8
2	321.8	0	0	0	1	0	22.7
2	321.8	0	0	0	1	0	19.8
2	321.8	0	0	0	1	0	22.3
2	321.7	0	0	0	1	0	18.3
2	321.8	0	0	0	1	0	15.5
2	321.7	0	0	0	1	0	17
2	322	0	0	0	1	0	14.5
2	322	0	0	0	1	0	16.4

5/19/2018 - Day 139 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg

15:05	2.2	280.7
15:10	2.7	288.6
15:15	2.6	278.2
15:20	2.2	278.5
15:25	2.5	273.3
15:30	2.2	283.2
15:35	1.8	273
15:40	1.3	293.1
15:45	1.2	279.6
15:50	0.8	315.3
15:55	0.8	358.5
16:00	1.8	308.8
16:05	1.9	323.2
16:10	2.1	279.7
16:15	1.6	316.4
16:20	2.1	292
16:25	1.5	296.9
16:30	1.5	331.7
16:35	1.6	341.2
16:40	1.4	305.1
16:45	2	277.4
16:50	2	277.6
16:55	1.9	281.5
17:00	2.4	268.3
17:05	2.4	300
17:10	2.2	326
17:15	2.3	302.3
17:20	1.9	312.1
17:25	2.4	337.1
17:30	2.6	358.5
17:35	2.2	335.6
17:40	2.6	319.5
17:45	1.8	314.6
17:50	2.1	309.1
17:55	2.1	297.8
18:00	2	323.3
18:05	1.9	336.1
18:10	2	325.6
18:15	1.8	319.5
18:20	1.9	333.8
18:25	1.8	334.5
18:30	1.8	338.9
18:35	1.3	335.1
18:40	1.4	345.9
18:45	1.9	359.6

2	321.9	0	0	0	1	0	19.5
2	322.1	0	0	0	1	0	14.1
2	322.3	0	0	0	1	0	13.4
2	321.9	0	0	0	1	0	16.9
2	322.2	0	0	0	1	0	14
2	322	0	0	0	1	0	24.8
2	321.8	0	0	0	1	0	18.9
2	321.4	0	0	0	1	0	24.3
2	321.2	0	0	0	1	0	19.8
2	321.1	0	0	0	1	0	57.6
2	320.8	0	0	0	1	0	58.8
2	321.2	0	0	0	1	0	25.8
2	321.1	0	0	0	1	0	37.4
2	321.4	0	0	0	1	0	15.5
2	321.1	0	0	0	1	0	17
2	321.3	0	0	0	1	0	19.5
2	321.2	0	0	0	1	0	31.9
2	321.2	0	0	0	1	0	21.1
2	321.2	0	0	0	1	0	13.7
2	321.1	0	0	0	1	0	31.4
2	321.4	0	0	0	1	0	17.6
2	321.5	0	0	0	1	0	18.2
2	321.4	0	0	0	1	0	18.1
2	321.7	0	0	0	1	0	15
2	321.7	0	0	0	1	0	27
2	321.7	0	0	0	1	0	17.4
2	321.7	0	0	0	1	0	22.2
2	321.6	0	0	0	1	0	22.5
2	321.6	0	0	0	1	0	22.2
2	321.8	0	0	0	1	0	13.7
2	321.6	0	0	0	1	0	17.9
2	321.7	0	0	0	1	0	14.9
2	321.5	0	0	0	1	0	19.2
2	321.5	0	0	0	1	0	17.3
2	321.7	0	0	0	1	0	20.7
2	321.5	0	0	0	1	0	18.1
2	321.5	0	0	0	1	0	15.7
2	321.6	0	0	0	1	0	15.9
2	321.6	0	0	0	1	0	22.1
2	321.6	0	0	0	1	0	13.8
2	321.5	0	0	0	1	0	13.8
2	321.7	0	0	0	1	0	12.9
2	321.4	0	0	0	1	0	15.6
2	321.4	0	0	0	1	0	17.3
2	321.7	0	0	0	1	0	16.6

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
18:50	2	10.3
18:55	1.5	345.7
19:00	1.9	4
19:05	2	20.4
19:10	2.2	60.3
19:15	2.5	61.8
19:20	3.1	52.7
19:25	2.6	56.6
19:30	2.8	46.9
19:35	2.3	58.5
19:40	2.5	54
19:45	2.3	64.8
19:50	1.7	54.2
19:55	1.6	50.4
20:00	1.9	51.5
20:05	2	65.8
20:10	2.5	58.5
20:15	2.8	47.7
20:20	1.2	83.1
20:25	0.9	104.4
20:30	1.3	98.8
20:35	1.2	96.8
20:40	1.1	80
20:45	1.4	79.6
20:50	1.6	79.9
20:55	1.1	116.2
21:00	0.9	88.2
21:05	1.2	100.4
21:10	1.5	78.4
21:15	1.1	120.9
21:20	0.9	103.5
21:25	0.9	99.7
21:30	1.3	82.5
21:35	1.6	92.3
21:40	1.1	97.8
21:45	0.8	90.7
21:50	1	94.6
21:55	1.1	81.7
22:00	0.8	86.1
22:05	1.1	87.1
22:10	1.3	97.8

5/19/2018 - Day 139 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	321.8	0	0	0	1	0	12.7
2	321.6	0	0	0	1	0	22.7
2	321.7	0	0	0	1	0	10.8
2	321.8	0	0	0	1	0	27.8
2	322	0	0	0	1	0	13.9
2	322.2	0	0	0	1	0	18.8
2	322.6	0	0	0	1	0	8.9
2	322.6	0	0	0	1	0	11.4
2	322.7	0	0	0	1	0	10.7
2	322.5	0	0	0	1	0	14.7
2	322.7	0	0	0	1	0	10.4
2	322.7	0	0	0	1	0	14.2
2	322.5	0	0	0	1	0	15.7
2	322.3	0	0	0	1	0	16.1
2	322.5	0	0	0	1	0	14.4
2	322.8	0	0	0	1	0	13.9
2	323	0	0	0	1	0	11.6
2	323.4	0	0	0	1	0	9.8
2	322.5	0	0	0	1	0	48
2	322.2	0	0	0	1	0	28.9
2	322.3	0	0	0	1	0	20.2
2	322.3	0	0	0	1	0	26.1
2	322.3	0	0	0	1	0	23.4
2	322.5	0	0	0	1	0	17.8
2	322.6	0	0	0	1	0	14.4
2	322.5	0	0	0	1	0	32.3
2	322.3	0	0	0	1	0	32
2	322.4	0	0	0	1	0	17
2	322.6	0	0	0	1	0	20.4
2	322.5	0	0	0	1	0	23.5
2	322.4	0	0	0	1	0	39.4
2	322.3	0	0	0	1	0	28.1
2	322.7	0	0	0	1	0	19.6
2	322.8	0	0	0	1	0	15.9
2	322.7	0	0	0	1	0	27.2
2	322.5	0	0	0	1	0	45.5
2	322.5	0	0	0	1	0	32.4
2	322.6	0	0	0	1	0	19.7
2	322.5	0	0	0	1	0	26.2
2	322.6	0	0	0	1	0	18.4
2	322.7	0	0	0	1	0	17.9

22:15	1.1	99.6
22:20	1.1	145.4
22:25	1.8	184.4
22:30	0.9	191.7

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
22:35	0.8	121.1
22:40	1.2	49.2
22:45	0.8	40.4
22:50	1.1	54.2
22:55	1.2	55.5
23:00	1.2	62.6
23:05	1.4	63.2
23:10	1.6	52.1
23:15	1.7	59.3
23:20	1.3	38
23:25	1.8	25.3
23:30	1.6	24.7
23:35	1.7	18.8
23:40	1.8	12.5
23:45	2.5	25.7
23:50	2.6	35.3
23:55	2.8	31.6
0:00	1.9	43.4

Totals	n/a	
Savg		1.7
Vavg		0

Data Recovery

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
0:05	1.7	51.3

2	322.9	0	0	0	1	0	21.9
2	322.6	0	0	0	1	0	31.2
2	323.3	0	0	0	1	0	16.4
2	322.8	0	0	0	1	0	31.9

5/19/2018 - Day 139 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	322.6	0	0	0	1	0	45
2	322.7	0	0	0	1	0	12.9
2	322.6	0	0	0	1	0	13.6
2	322.7	0	0	0	1	0	13.2
2	322.9	0	0	0	1	0	14.2
2	322.9	0	0	0	1	0	11.3
2	323.1	0	0	0	1	0	10.5
2	323.3	0	0	0	1	0	11.9
2	323.5	0	0	0	1	0	14.9
2	323.1	0	0	0	1	0	20.1
2	323.4	0	0	0	1	0	10.4
2	323.4	0	0	0	1	0	7.7
2	323.4	0	0	0	1	0	9.6
2	323.4	0	0	0	1	0	9.7
2	324	0	0	0	1	0	12.9
2	324.1	0	0	0	1	0	10.8
2	324.5	0	0	0	1	0	10
2	324	0	0	0	1	0	13.9

n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	n/a	
170.3	2	322.6	0	0	0	1	n/a	18.2	
350.2	0	322.6	0	0	0	0	n/a	n/a	

100 %

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	323.6	0	0	0	1	0	12.7

0:10	1.3	37.9
0:15	1.7	25.8
0:20	2	22.3
0:25	2	31.7
0:30	1.8	32.3
0:35	1.9	40
0:40	2	37.8
0:45	2.2	24.8
0:50	2.8	22.6
0:55	3.2	30.2
1:00	5.2	36.1
1:05	5.6	37
1:10	5.1	41.8
1:15	5.9	47.1
1:20	4.9	48.5
1:25	5.7	42.4
1:30	5.3	47.4
1:35	5.3	49.8
1:40	4.7	46.7
1:45	3.8	34.5
1:50	3.8	36.9
1:55	4.3	36.8
2:00	4.1	30.2
2:05	3.7	25.8
2:10	3.8	27.2
2:15	4.6	34.5
2:20	4.5	31
2:25	4.8	36.9
2:30	3.9	35.7
2:35	4.7	45.5
2:40	5	37.6
2:45	4.7	28.7
2:50	4.4	29.3
2:55	5.4	37
3:00	4.6	40.2
3:05	3.6	26.4
3:10	5.1	33.8
3:15	4.3	17.2
3:20	4.5	19.7
3:25	5.2	15.8
3:30	4.3	4.7
3:35	5.6	10.5
3:40	6	12.9
3:45	5.3	16.4

Report for

2	323.3	0	0	0	1	0	13.4
2	323.5	0	0	0	1	0	9.3
2	323.8	0	0	0	1	0	7.5
2	324	0	0	0	1	0	10.7
2	323.9	0	0	0	1	0	10.6
2	323.9	0	0	0	1	0	12.2
2	324	0	0	0	1	0	13.5
2	324	0	0	0	1	0	13.6
2	324.4	0	0	0	1	0	10.4
2	325	0	0	0	1	0	12.3
2	326.3	0	0	0	1	0	13.3
2	327.7	0	0	0	1	0	11.3
2	327.4	0	0	0	1	0	12.7
2	327.6	0	0	0	1	0	13.8
2	327.7	0	0	0	1	0	13
2	327.9	0	0	0	1	0	11.1
2	327.7	0	0	0	1	0	11.6
2	328	0	0	0	1	0	11.8
2	327.6	0	0	0	1	0	11.4
2	326.7	0	0	0	1	0	12.9
2	326.2	0	0	0	1	0	11.8
2	326.7	0	0	0	1	0	12.7
2	327.2	0	0	0	1	0	11.5
2	326.8	0	0	0	1	0	11.2
2	326.9	0	0	0	1	0	12.3
2	327.6	0	0	0	1	0	12.7
2	328.2	0	0	0	1	0	12.2
2	328.5	0	0	0	1	0	11.5
2	328.4	0	0	0	1	0	10.6
2	328.4	0	0	0	1	0	13.8
2	329.3	0	0	0	1	0	13.2
2	329.6	0	0	0	1	0	10.4
2	328.8	0	0	0	1	0	13.9
2	329.8	0	0	0	1	0	12.5
2	329.9	0	0	0	1	0	11
2	328.9	0	0	0	1	0	14.2
2	329.4	0	0	0	1	0	13.1
2	329.7	0	0	0	1	0	15
2	329.7	0	0	0	1	0	11.9
2	330.5	0	0	0	1	0	12.6
2	330	0	0	0	1	0	15.8
2	331	0	0	0	1	0	12.9
2	332	0	0	0	1	0	10.8
2	332.3	0	0	0	1	0	12.5

5/20/2018 - Day 140 > AUTOMET < Station ID: 1

Channel		1	2
Sensor		WS	WD
Units		MPS	DEG
3:50		5.8	16.5
3:55		4.6	15.7
4:00		5	17.4
4:05		5.7	24.1
4:10		4.2	22.8
4:15		4.1	17.8
4:20		5.1	19.7
4:25		5	24.4
4:30		4.8	27.4
4:35		5.3	26.1
4:40		5	19.7
4:45		3.3	23.6
4:50		4	28.5
4:55		4.6	29.2
5:00		4.5	27.1
5:05		4.2	23.7
5:10		3.9	22.3
5:15		4.2	28.2
5:20		3.8	21.3
5:25		3.6	22.6
5:30		4.3	21.9
5:35		3.8	18.9
5:40		3.9	23.9
5:45		4.6	20.7
5:50		3.8	22.7
5:55		3.4	35.5
6:00		3.6	20.3
6:05		3.2	23.4
6:10		3.4	13.9
6:15		3.9	13.7
6:20		4.7	22.1
6:25		4.1	22.2
6:30		3.4	26.1
6:35		4.6	22.1
6:40		3.8	26.5
6:45		3.7	16
6:50		3.6	14.2
6:55		4.1	24.2
7:00		4.1	27
7:05		3.5	21.5
7:10		3	15.9
7:15		4.3	17.1

	3	4	5	6	7	8	Rain	Sigma
XXX		XXX	XXX	XXX	XXX XXX		RA	
XXX		XXX	XXX	XXX	XXX XXX		XXX	Deg
	2	333.3	0	0	0	1	0	12.9
	2	332.3	0	0	0	1	0	13.6
	2	332.2	0	0	0	1	0	14.4
	2	332.3	0	0	0	1	0	13.2
	2	332.7	0	0	0	1	0	12.7
	2	331.3	0	0	0	1	0	16.3
	2	332	0	0	0	1	0	14.3
	2	332.7	0	0	0	1	0	13.3
	2	332.4	0	0	0	1	0	11.7
	2	332.7	0	0	0	1	0	10.4
	2	333.9	0	0	0	1	0	12.5
	2	331.5	0	0	0	1	0	16.2
	2	330.9	0	0	0	1	0	11.7
	2	331.3	0	0	0	1	0	11.9
	2	331.9	0	0	0	1	0	12.3
	2	332.1	0	0	0	1	0	14.8
	2	331.3	0	0	0	1	0	13.6
	2	330.9	0	0	0	1	0	12
	2	331.2	0	0	0	1	0	15.8
	2	330.6	0	0	0	1	0	15.6
	2	331	0	0	0	1	0	11
	2	331	0	0	0	1	0	14.6
	2	331.3	0	0	0	1	0	15.5
	2	331.3	0	0	0	1	0	10.6
	2	331.5	0	0	0	1	0	10.4
	2	330.5	0	0	0	1	0	13.7
	2	330.1	0	0	0	1	0	14.3
	2	330	0	0	0	1	0	14.5
	2	329.8	0	0	0	1	0	14.2
	2	330.1	0	0	0	1	0	12.3
	2	331.3	0	0	0	1	0	14.6
	2	332	0	0	0	1	0	13.1
	2	330.7	0	0	0	1	0	27
	2	331.5	0	0	0	1	0	12.5
	2	331.8	0	0	0	1	0	9.6
	2	331.2	0	0	0	1	0	12
	2	330.7	0	0	0	1	0	13.8
	2	331.2	0	0	0	1	0	13.2
	2	331.6	0	0	0	1	0	12.5
	2	330.9	0	0	0	1	0	14.6
	2	329.8	0	0	0	1	0	14.6
	2	330.2	0	0	0	1	0	12.1

7:20	4.4	20.2
7:25	4.5	30.2
7:30	4.4	28

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

7:35	3.4	30.1
7:40	3.7	37.4
7:45	3.6	31.6
7:50	4	38.4
7:55	4	32
8:00	3.4	28.3
8:05	3.6	33.9
8:10	4.5	42.4
8:15	3.8	23.7
8:20	3.6	26.6
8:25	3.7	28.3
8:30	3.8	25.3
8:35	3.2	25.9
8:40	3.8	18.7
8:45	4.1	19.2
8:50	3.7	14.1
8:55	4	17.4
9:00	4	23.4
9:05	3.8	22.6
9:10	3.8	36.4
9:15	4.3	35.8
9:20	4.8	28.1
9:25	4	14.9
9:30	4.4	22.4
9:35	4.2	28.3
9:40	3.9	21.7
9:45	4.3	18.8
9:50	3.9	13.1
9:55	4.4	13.9
10:00	4.1	19.7
10:05	4.2	18.8
10:10	3.6	20
10:15	3.7	13.5
10:20	4.1	9.8
10:25	4.4	12
10:30	4	6.9

2	331.3	0	0	0	1	0	16
2	332	0	0	0	1	0	16.8
2	332.1	0	0	0	1	0	11.7

5/20/2018 - Day 140 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	331.1	0	0	0	1	0	14.3
2	330.4	0	0	0	1	0	11.3
2	330.1	0	0	0	1	0	13.5
2	330.6	0	0	0	1	0	13.3
2	330.7	0	0	0	1	0	12.4
2	330.5	0	0	0	1	0	16.7
2	330	0	0	0	1	0	13.3
2	330.7	0	0	0	1	0	12.2
2	330.8	0	0	0	1	0	15.1
2	330.2	0	0	0	1	0	13.6
2	330	0	0	0	1	0	12.2
2	330.2	0	0	0	1	0	12.8
2	329.5	0	0	0	1	0	14
2	329.8	0	0	0	1	0	11.2
2	330.3	0	0	0	1	0	12
2	330.1	0	0	0	1	0	13.3
2	330.1	0	0	0	1	0	11.5
2	330.5	0	0	0	1	0	12.2
2	330.3	0	0	0	1	0	13.3
2	330.4	0	0	0	1	0	13.1
2	330.7	0	0	0	1	0	12.2
2	331.5	0	0	0	1	0	10.5
2	332	0	0	0	1	0	15.7
2	331.3	0	0	0	1	0	11.1
2	332.3	0	0	0	1	0	13.4
2	331.3	0	0	0	1	0	12.1
2	332	0	0	0	1	0	13.9
2	331.4	0	0	0	1	0	13.1
2	332.2	0	0	0	1	0	12.5
2	332.5	0	0	0	1	0	11.2
2	332	0	0	0	1	0	13.5
2	332	0	0	0	1	0	13.1
2	331	0	0	0	1	0	16.2
2	332	0	0	0	1	0	15.2
2	332.2	0	0	0	1	0	13.2
2	332.4	0	0	0	1	0	13.6

10:35	3.9	3.3
10:40	3.8	7.6
10:45	3.7	3.4
10:50	4.7	4.7
10:55	4.8	14.4
11:00	3.8	9.1
11:05	3.5	11.3
11:10	4.5	19.6
11:15	4.6	16.4

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

11:20	3.7	13.4
11:25	4.2	7
11:30	3.9	9.1
11:35	3.7	16.8
11:40	3.5	16.2
11:45	4.8	10.2
11:50	3.8	13.7
11:55	3.7	16.9
12:00	4.4	42.9
12:05	4.1	53.6
12:10	4.2	57.7
12:15	3.4	72.8
12:20	2.8	90.3
12:25	3.4	107.3
12:30	2.4	92.8
12:35	2.2	82
12:40	2.5	48.4
12:45	2.8	26.5
12:50	3.4	36.4
12:55	4.2	29.3
13:00	3.8	20
13:05	4.2	14.8
13:10	3.9	16.4
13:15	4.1	27.9
13:20	4.5	33.1
13:25	4.1	27.3
13:30	4.2	12.3
13:35	4.1	12.5
13:40	3.9	27.2
13:45	3.8	25.9

2	331.7	0	0	0	1	0	18.1
2	332.2	0	0	0	1	0	15.2
2	331.1	0	0	0	1	0	17.6
2	332.4	0	0	0	1	0	14.9
2	332.9	0	0	0	1	0	15.5
2	333.2	0	0	0	1	0	16.2
2	331.4	0	0	0	1	0	18.2
2	331.7	0	0	0	1	0	13.9
2	333.3	0	0	0	1	0	11.9

5/20/2018 - Day 140 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	332.2	0	0	0	1	0	14.5
2	332.3	0	0	0	1	0	12.2
2	331.8	0	0	0	1	0	14.2
2	331.9	0	0	0	1	0	13.6
2	331	0	0	0	1	0	18.4
2	331.6	0	0	0	1	0	12.5
2	332	0	0	0	1	0	16.2
2	330.6	0	0	0	1	0	14
2	330.8	0	0	0	1	0	13.8
2	331.1	0	0	0	1	0	13.9
2	330.9	0	0	0	1	0	17.5
2	330.3	0	0	0	1	0	14.8
2	328.8	0	0	0	1	0	21.2
2	328.7	0	0	0	1	0	16.3
2	327.9	0	0	0	1	0	31.7
2	327.2	0	0	0	1	0	23.2
2	326.6	0	0	0	1	0	22.5
2	327.1	0	0	0	1	0	14.7
2	327.1	0	0	0	1	0	15.1
2	328	0	0	0	1	0	13.1
2	327.8	0	0	0	1	0	11.7
2	327.5	0	0	0	1	0	15.4
2	327.1	0	0	0	1	0	17.3
2	326.4	0	0	0	1	0	15.9
2	326.4	0	0	0	1	0	13.4
2	326.2	0	0	0	1	0	16.1
2	325.9	0	0	0	1	0	12
2	325.8	0	0	0	1	0	13.6
2	325.5	0	0	0	1	0	15.8
2	325.5	0	0	0	1	0	13.5

13:50	4	23.2
13:55	4.4	29.5
14:00	3.9	35.9
14:05	3.4	24.4
14:10	3.3	15.5
14:15	3.4	26.1
14:20	4.7	54.2
14:25	4.7	49.8
14:30	4	46.3
14:35	3.9	45.4
14:40	4.1	25.1
14:45	3.9	33.9
14:50	3.6	17.1
14:55	3.2	38.6
15:00	3.4	32.9

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
15:05	4	14.9
15:10	3.8	16.7
15:15	4.1	12.3
15:20	3.9	19
15:25	4.1	20.7
15:30	3.7	21.6
15:35	3.8	45.5
15:40	4.4	43.2
15:45	4.3	22.3
15:50	4.2	19
15:55	4.3	20.1
16:00	4.6	29.6
16:05	5.1	35.7
16:10	4.9	33.9
16:15	4.7	26
16:20	4.8	41.6
16:25	5.5	48.4
16:30	4.7	46.7
16:35	4.8	31.5
16:40	4.8	32.4
16:45	5.2	28
16:50	5.2	19.4
16:55	5	22.3
17:00	5.3	31.4

2	325.6	0	0	0	1	0	13
2	325.7	0	0	0	1	0	16.6
2	325.7	0	0	0	1	0	12.4
2	325.1	0	0	0	1	0	14.4
2	324.7	0	0	0	1	0	13.2
2	324.6	0	0	0	1	0	15.6
2	325.3	0	0	0	1	0	10.5
2	325.6	0	0	0	1	0	12.5
2	325.2	0	0	0	1	0	14.4
2	324.7	0	0	0	1	0	12.5
2	324.8	0	0	0	1	0	20.2
2	324.8	0	0	0	1	0	17.1
2	324.6	0	0	0	1	0	18
2	324	0	0	0	1	0	20.8
2	324.2	0	0	0	1	0	22.8

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	324.3	0	0	0	1	0	11.9
2	324.5	0	0	0	1	0	14.4
2	324.4	0	0	0	1	0	13.6
2	324.2	0	0	0	1	0	18.9
2	324.3	0	0	0	1	0	15.7
2	324.1	0	0	0	1	0	12.7
2	324.1	0	0	0	1	0	13.6
2	324.4	0	0	0	1	0	13.8
2	324.4	0	0	0	1	0	13.1
2	324.6	0	0	0	1	0	15.1
2	324.5	0	0	0	1	0	13.5
2	324.5	0	0	0	1	0	12
2	324.8	0	0	0	1	0	17.2
2	325.5	0	0	0	1	0	13.5
2	325.1	0	0	0	1	0	13.5
2	325.3	0	0	0	1	0	12.9
2	326	0	0	0	1	0	12
2	325.7	0	0	0	1	0	17
2	325.9	0	0	0	1	0	13.4
2	326	0	0	0	1	0	14.4
2	326.2	0	0	0	1	0	9.6
2	326.6	0	0	0	1	0	10.7
2	326.7	0	0	0	1	0	12.4
2	326.7	0	0	0	1	0	11.8

17:05	5.3	32.5
17:10	4.9	27.8
17:15	5	33.1
17:20	4	35.8
17:25	4.3	35.5
17:30	3.4	32.2
17:35	5	21.3
17:40	4.4	24.3
17:45	4.5	25.2
17:50	5.4	26.4
17:55	6.1	24.4
18:00	5.2	29.7
18:05	5.4	42.5
18:10	3.8	34.4
18:15	3.1	19.6
18:20	3.5	45
18:25	4.3	44.9
18:30	4.7	45.5
18:35	4.4	46.6
18:40	3.6	35.2
18:45	3.5	41.1

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
18:50	4.8	46
18:55	5.1	37.5
19:00	4.8	29.4
19:05	3.9	32.4
19:10	4.9	31
19:15	3.9	27.4
19:20	2.3	43.3
19:25	2.3	43.2
19:30	2.2	53.4
19:35	2.5	34.8
19:40	2.4	33.4
19:45	2.3	32.6
19:50	2.8	22.2
19:55	3.1	30.9
20:00	2.6	23.3
20:05	2.9	19.8
20:10	2.6	24.2
20:15	3.1	12.7

2	326.9	0	0	0	1	0	11.9
2	326.9	0	0	0	1	0	12.2
2	326.9	0	0	0	1	0	11.3
2	326.3	0	0	0	1	0	11.1
2	326.1	0	0	0	1	0	12.6
2	325.7	0	0	0	1	0	17
2	326.6	0	0	0	1	0	12.1
2	326.8	0	0	0	1	0	12
2	326.9	0	0	0	1	0	13.8
2	327.7	0	0	0	1	0	11
2	328.7	0	0	0	1	0	9.7
2	328.6	0	0	0	1	0	12.5
2	328.4	0	0	0	1	0	12.6
2	327.6	0	0	0	1	0	13.5
2	326.2	0	0	0	1	0	16.5
2	325.9	0	0	0	1	0	11.3
2	326.9	0	0	0	1	0	10.1
2	327.2	0	0	0	1	0	10
2	328.1	0	0	0	1	0	12.7
2	327.2	0	0	0	1	0	13.6
2	326.8	0	0	0	1	0	12.2

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	327.9	0	0	0	1	0	10.4
2	328.9	0	0	0	1	0	11.6
2	329.3	0	0	0	1	0	12
2	328.5	0	0	0	1	0	15.4
2	328.9	0	0	0	1	0	12.5
2	329	0	0	0	1	0	16.8
2	327.1	0	0	0	1	0	21.6
2	326.1	0	0	0	1	0	11.5
2	325.9	0	0	0	1	0	19.2
2	325.9	0	0	0	1	0	12.3
2	326.2	0	0	0	1	0	10.7
2	325.9	0	0	0	1	0	10.8
2	326.2	0	0	0	1	0	11.2
2	326.9	0	0	0	1	0	9.3
2	326.7	0	0	0	1	0	10.8
2	326.5	0	0	0	1	0	11.6
2	326.7	0	0	0	1	0	12.6
2	326.8	0	0	0	1	0	11.1

20:20	2.5	23.3
20:25	2.2	10
20:30	2.2	8.9
20:35	1.9	33.8
20:40	2	34.9
20:45	2.7	22.6
20:50	2.4	17.1
20:55	2.9	1.5
21:00	2	12.6
21:05	2.6	1.1
21:10	2.4	12.8
21:15	2.4	21.4
21:20	3	10.8
21:25	2.7	19.7
21:30	2.6	14.3
21:35	2	13.6
21:40	2.3	9.8
21:45	2.8	20.3
21:50	2.7	23.5
21:55	2.1	21
22:00	2.5	20.1
22:05	1.7	20.2
22:10	2	22.2
22:15	1.7	10.2
22:20	1.6	6.3
22:25	1.8	13.2
22:30	2.8	9

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

22:35	2.7	14.1
22:40	2.4	23.3
22:45	2.8	29.5
22:50	2.6	21.5
22:55	2.6	20.4
23:00	2.2	25.7
23:05	2.8	24
23:10	2.7	25.7
23:15	2.6	29.5
23:20	2.9	32.8
23:25	2.9	35.1
23:30	2.8	32

2	326.8	0	0	0	1	0	11.7
2	326.2	0	0	0	1	0	13.9
2	326	0	0	0	1	0	14.8
2	325.5	0	0	0	1	0	17.4
2	325.5	0	0	0	1	0	21.2
2	326	0	0	0	1	0	10
2	326.2	0	0	0	1	0	18.3
2	326.6	0	0	0	1	0	12
2	326.4	0	0	0	1	0	14.2
2	326.1	0	0	0	1	0	15
2	326.3	0	0	0	1	0	16.4
2	326.4	0	0	0	1	0	15.9
2	326.7	0	0	0	1	0	11.5
2	327.1	0	0	0	1	0	13.7
2	326.9	0	0	0	1	0	13.1
2	326.2	0	0	0	1	0	13.7
2	326.2	0	0	0	1	0	15.6
2	326.8	0	0	0	1	0	9.4
2	327.1	0	0	0	1	0	10.4
2	326.7	0	0	0	1	0	14.2
2	326.6	0	0	0	1	0	11.1
2	326.3	0	0	0	1	0	14.9
2	326.1	0	0	0	1	0	7.8
2	326.1	0	0	0	1	0	17.3
2	325.7	0	0	0	1	0	12.4
2	325.8	0	0	0	1	0	12.2
2	326.7	0	0	0	1	0	10.5

5/20/2018 - Day 140 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	327.4	0	0	0	1	0	12
2	327	0	0	0	1	0	15.9
2	327.5	0	0	0	1	0	12.5
2	327.3	0	0	0	1	0	10.9
2	327.2	0	0	0	1	0	9.6
2	326.8	0	0	0	1	0	12.3
2	326.9	0	0	0	1	0	10.1
2	327.4	0	0	0	1	0	10.8
2	327.3	0	0	0	1	0	10.8
2	327.2	0	0	0	1	0	10.6
2	327.4	0	0	0	1	0	12.5
2	327.4	0	0	0	1	0	14.2

23:35	2.7	31.1
23:40	2.8	36.6
23:45	2.6	37
23:50	2.7	32.6
23:55	2.4	41.5
0:00	2.5	43.1

Totals	n/a
Savg	3.8
Vavg	0

Data Recovery

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

0:05	2.6	37
0:10	2.6	44.7
0:15	2.8	37
0:20	2.1	40.4
0:25	2.8	41.3
0:30	2.9	40.6
0:35	3.2	37.4
0:40	2.9	31.6
0:45	3.4	39.1
0:50	3.3	40.4
0:55	2.9	40.4
1:00	3.1	34.3
1:05	3.2	39.3
1:10	3.6	43.8
1:15	2.9	44.7
1:20	3.1	40.1
1:25	3.3	38.2
1:30	3.2	43.4
1:35	3.1	46.9
1:40	3.1	41
1:45	2.9	42.9
1:50	2.9	40.1
1:55	2.4	36
2:00	3.2	32.6
2:05	2.8	31.6

2	327.4	0	0	0	1	0	10.8
2	327.1	0	0	0	1	0	13.5
2	327	0	0	0	1	0	13.8
2	327	0	0	0	1	0	11.8
2	326.6	0	0	0	1	0	14.2
2	326.6	0	0	0	1	0	13.5

n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	n/a	
27.4	2	328.3	0	0	0	1	n/a	13.5	
27.2	0	328.3	0	0	0	0	n/a	n/a	

100 %

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	326.7	0	0	0	1	0	11.3
2	326.5	0	0	0	1	0	10.9
2	326.9	0	0	0	1	0	12.2
2	326.4	0	0	0	1	0	11
2	326.4	0	0	0	1	0	12.2
2	327	0	0	0	1	0	10
2	327.4	0	0	0	1	0	11.5
2	327.2	0	0	0	1	0	12.1
2	327.2	0	0	0	1	0	10.5
2	327.9	0	0	0	1	0	11.6
2	327.3	0	0	0	1	0	12.5
2	327	0	0	0	1	0	13.5
2	327.4	0	0	0	1	0	11.8
2	327.8	0	0	0	1	0	11.6
2	327.4	0	0	0	1	0	12
2	327.1	0	0	0	1	0	10.8
2	327.3	0	0	0	1	0	11.4
2	327.5	0	0	0	1	0	11.3
2	327.5	0	0	0	1	0	12.2
2	327.3	0	0	0	1	0	11.3
2	326.9	0	0	0	1	0	11.4
2	326.8	0	0	0	1	0	13
2	326.5	0	0	0	1	0	14.5
2	326.7	0	0	0	1	0	11.5
2	327	0	0	0	1	0	13

2:10	2.9	36.1
2:15	3.3	42.4
2:20	3	46.1
2:25	2	30.6
2:30	3.2	32.1
2:35	2.6	33.2
2:40	2.5	33.4
2:45	2.9	43.6
2:50	2.8	36.5
2:55	2.1	31.8
3:00	2.9	30.2
3:05	2	29.9
3:10	2.5	32
3:15	1.9	24.6
3:20	1.7	24.6
3:25	2.4	27
3:30	2.2	32
3:35	2.4	29.8
3:40	2.5	34.4
3:45	2.2	20.8

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

3:50	2.7	29
3:55	2.9	36.9
4:00	2.3	38.3
4:05	1.9	32.4
4:10	2.4	40.1
4:15	2.5	35.4
4:20	2.1	35.1
4:25	2.3	31.7
4:30	2.3	28.7
4:35	2	34.3
4:40	2.5	42.5
4:45	2.2	39.5
4:50	3	43.9
4:55	2.1	31.4
5:00	2.6	37.6
5:05	2.4	41.1
5:10	2.4	30.7
5:15	2.5	27.4
5:20	2.1	24.9

2	326.9	0	0	0	1	0	11.6
2	327.1	0	0	0	1	0	11
2	327.6	0	0	0	1	0	8.8
2	326.1	0	0	0	1	0	12
2	326.6	0	0	0	1	0	10.8
2	326.8	0	0	0	1	0	12.4
2	326.4	0	0	0	1	0	11.7
2	326.6	0	0	0	1	0	12.2
2	326.9	0	0	0	1	0	14.8
2	326.1	0	0	0	1	0	14.5
2	326.3	0	0	0	1	0	12.1
2	326.1	0	0	0	1	0	13.5
2	326	0	0	0	1	0	12.1
2	326	0	0	0	1	0	10.4
2	325.3	0	0	0	1	0	10
2	325.7	0	0	0	1	0	10.1
2	326	0	0	0	1	0	12.4
2	326	0	0	0	1	0	9.3
2	326.2	0	0	0	1	0	9.8
2	326	0	0	0	1	0	11.1

5/21/2018 - Day 141 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	326.2	0	0	0	1	0	10.9
2	326.8	0	0	0	1	0	10.3
2	326.2	0	0	0	1	0	12
2	325.7	0	0	0	1	0	15.2
2	325.6	0	0	0	1	0	12.9
2	326	0	0	0	1	0	13.1
2	325.7	0	0	0	1	0	11.7
2	326	0	0	0	1	0	11.1
2	325.8	0	0	0	1	0	9.8
2	325.6	0	0	0	1	0	12.6
2	325.8	0	0	0	1	0	11
2	325.8	0	0	0	1	0	12.4
2	326.3	0	0	0	1	0	10.8
2	326.2	0	0	0	1	0	15.6
2	325.9	0	0	0	1	0	13.6
2	326.2	0	0	0	1	0	11.5
2	325.9	0	0	0	1	0	13.7
2	325.8	0	0	0	1	0	10.5
2	325.7	0	0	0	1	0	10.9

5:25	2.9	30
5:30	3	33.4
5:35	3.1	30
5:40	2.9	40.4
5:45	2.7	39.8
5:50	3.5	42.5
5:55	3.4	37.5
6:00	2.9	30.4
6:05	2.4	38.1
6:10	2.5	35.6
6:15	3.1	39
6:20	2.4	40.2
6:25	1.7	15.9
6:30	2.1	2
6:35	6.8	236.8
6:40	2.3	264.9
6:45	1.8	358.4
6:50	2.1	0.3
6:55	2.3	26.6
7:00	3.2	47.4
7:05	3.6	47.1
7:10	2.5	48.8
7:15	2.3	65.6
7:20	2.1	76.4
7:25	1.8	83.7
7:30	2.1	81.9

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

7:35	2.2	79.6
7:40	1.7	81.6
7:45	2.2	64.9
7:50	2.4	64.4
7:55	1.9	59.3
8:00	1.5	74.5
8:05	1.2	67.8
8:10	1.3	63.4
8:15	2.9	84.7
8:20	2.6	70
8:25	2.4	75.7
8:30	2.8	67.9
8:35	3.1	66

2	326.1	0	0	0	1	0	10.5
2	326.8	0	0	0	1	0	11.3
2	326.7	0	0	0	1	0	10.6
2	326.8	0	0	0	1	0	13.4
2	326.3	0	0	0	1	0	12.6
2	326.9	0	0	0	1	0	11.2
2	327.3	0	0	0	1	0	11.4
2	326.9	0	0	0	1	0	13.2
2	326.3	0	0	0	1	0	14.7
2	325.9	0	0	0	1	0	15.6
2	326.2	0	0	0	1	0	13.8
2	326.4	0	0	0	1	0	14.7
2	325.2	0	0	0	1	0	14.4
2	325.3	0	0	0	1	0	50.4
2	328.8	0	0	0	1	0	14.5
2	328.5	0	0	0	1	0	42.4
2	325.8	0	0	0	1	0	42.2
2	325.6	0	0	0	1	0	22.6
2	325.5	0	0	0	1	0	21.4
2	326.4	0	0	0	1	0	10.4
2	327.3	0	0	0	1	0	8.7
2	326.6	0	0	0	1	0	14.9
2	325.7	0	0	0	1	0	13.6
2	325.5	0	0	0	1	0	15.4
2	325.2	0	0	0	1	0	18
2	324.9	0	0	0	1	0	15.8

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	325.4	0	0	0	1	0	15.6
2	325.1	0	0	0	1	0	19.2
2	324.9	0	0	0	1	0	15.9
2	325.4	0	0	0	1	0	13
2	325.1	0	0	0	1	0	20.7
2	324.6	0	0	0	1	0	26.3
2	324	0	0	0	1	0	31
2	324	0	0	0	1	0	36.2
2	324.9	0	0	0	1	0	21.9
2	325.8	0	0	0	1	0	17.5
2	325.5	0	0	0	1	0	19.5
2	325.4	0	0	0	1	0	16.5
2	325.9	0	0	0	1	0	14.1

8:40	3.1	65.9
8:45	3.6	63.6
8:50	3.9	66.7
8:55	3.2	64.7
9:00	3.2	77.8
9:05	3.8	69
9:10	3.7	62.9
9:15	3.5	60.5
9:20	3.6	60.7
9:25	3.3	63.3
9:30	3.6	64.4
9:35	3.8	67.8
9:40	2.6	77.9
9:45	3.4	78.5
9:50	3.6	73.1
9:55	3.1	91.3
10:00	3.2	90
10:05	2.1	94.5
10:10	1.7	82.9
10:15	1	123.4
10:20	1.1	25.8
10:25	1.5	306.8
10:30	2.2	292.1
10:35	1.8	294.6
10:40	1.4	34.4
10:45	0.9	36.6
10:50	1	4.6
10:55	0.9	23.4
11:00	1.1	344.4
11:05	1.5	307
11:10	1.9	318.4
11:15	1.1	328.5

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

11:20	1.2	334.9
11:25	1.3	340.1
11:30	1.1	353.2
11:35	1.2	17.5
11:40	1	12.4
11:45	1.1	2.4
11:50	1.2	14

2	326.2	0	0	0	1	0	15.4
2	326.2	0	0	0	1	0	14.2
2	327	0	0	0	1	0	13.7
2	326.5	0	0	0	1	0	14.9
2	326.2	0	0	0	1	0	17.8
2	326.3	0	0	0	1	0	16.3
2	326.8	0	0	0	1	0	14.6
2	326.8	0	0	0	1	0	14.6
2	326.4	0	0	0	1	0	12.7
2	326.4	0	0	0	1	0	16.3
2	326.3	0	0	0	1	0	16.6
2	326.7	0	0	0	1	0	17
2	326.1	0	0	0	1	0	18.9
2	325.9	0	0	0	1	0	18.2
2	326.5	0	0	0	1	0	17.6
2	326.2	0	0	0	1	0	23.6
2	325.9	0	0	0	1	0	26.1
2	325.6	0	0	0	1	0	27.9
2	324.9	0	0	0	1	0	56.9
2	324	0	0	0	1	0	63.9
2	323.9	0	0	0	1	0	27.2
2	324	0	0	0	1	0	28
2	324.9	0	0	0	1	0	21.8
2	324.9	0	0	0	1	0	20.6
2	324.2	0	0	0	1	0	40.7
2	324	0	0	0	1	0	22.8
2	323.9	0	0	0	1	0	12.1
2	324	0	0	0	1	0	17.3
2	323.8	0	0	0	1	0	28
2	324.2	0	0	0	1	0	24.5
2	324.6	0	0	0	1	0	12.3
2	324.1	0	0	0	1	0	19.6

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3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	324	0	0	0	1	0	18.5
2	324	0	0	0	1	0	16.3
2	324	0	0	0	1	0	18.7
2	324	0	0	0	1	0	11
2	323.9	0	0	0	1	0	13.4
2	323.9	0	0	0	1	0	12.8
2	324	0	0	0	1	0	13.8

11:55	1.4	31.2
12:00	1.7	24.4
12:05	1.9	31.8
12:10	2.1	26.5
12:15	1.6	29.8
12:20	2.1	33.5
12:25	2	25.4
12:30	2	39
12:35	1.7	41
12:40	1.3	32.7
12:45	1.4	42.8
12:50	1.5	50.9
12:55	1.3	54.6
13:00	1.7	64
13:05	1.8	64.6
13:10	2	64.9
13:15	1.6	66.6
13:20	1.7	69.9
13:25	1.7	72.9
13:30	1.8	81.2
13:35	1	77
13:40	1.5	82.1
13:45	1.7	98.8
13:50	1.8	103.5
13:55	1.7	94.2
14:00	1.7	95.7
14:05	1.3	73.1
14:10	1.3	68.4
14:15	1	46.5
14:20	1.2	69.5
14:25	1.6	66.2
14:30	1.5	71.3
14:35	1.3	80.4
14:40	1.7	100.6
14:45	1.7	94.5
14:50	1	100.9
14:55	1.1	78.5
15:00	1.4	68.7

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

15:05	1.4	69.8

2	324	0	0	0	1	0	16.1
2	324.3	0	0	0	1	0	9.1
2	324.5	0	0	0	1	0	9.3
2	324.7	0	0	0	1	0	9.8
2	324.5	0	0	0	1	0	14.3
2	324.7	0	0	0	1	0	10.1
2	324.8	0	0	0	1	0	9.7
2	324.7	0	0	0	1	0	10.2
2	324.7	0	0	0	1	0	11.5
2	324.3	0	0	0	1	0	15.7
2	324.1	0	0	0	1	0	13.3
2	324.5	0	0	0	1	0	19
2	324.1	0	0	0	1	0	17.4
2	324.6	0	0	0	1	0	13.2
2	324.7	0	0	0	1	0	13.6
2	325.1	0	0	0	1	0	15.4
2	324.7	0	0	0	1	0	15.3
2	324.8	0	0	0	1	0	15
2	324.6	0	0	0	1	0	17.6
2	324.9	0	0	0	1	0	17.6
2	324.5	0	0	0	1	0	21.2
2	324.3	0	0	0	1	0	25.8
2	324.8	0	0	0	1	0	18.5
2	324.8	0	0	0	1	0	15.9
2	324.8	0	0	0	1	0	14.8
2	325	0	0	0	1	0	20.3
2	324.4	0	0	0	1	0	21.6
2	324.7	0	0	0	1	0	23.8
2	325	0	0	0	1	0	20.7
2	325.3	0	0	0	1	0	19.8
2	325.5	0	0	0	1	0	25.9
2	325.6	0	0	0	1	0	16.7
2	325.5	0	0	0	1	0	17.9
2	325.6	0	0	0	1	0	13
2	325.9	0	0	0	1	0	14.4
2	325.5	0	0	0	1	0	30.1
2	325.3	0	0	0	1	0	23.3
2	325.6	0	0	0	1	0	14.5

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	3	4	5	6	7	8	Rain	Sigma
XXX		XXX	XXX	XXX	XXX XXX		RA	
XXX		XXX	XXX	XXX	XXX XXX		XXX	Deg
	2	325.8	0	0	0	1	0	18

15:10	1.3	80.4
15:15	1.7	94.1
15:20	1.6	101.4
15:25	1.3	98.1
15:30	1.4	89.3
15:35	1.3	77.7
15:40	1.4	97.1
15:45	1.6	84.6
15:50	1.5	79.6
15:55	1.3	71.7
16:00	1.5	64.8
16:05	1.2	76.7
16:10	1.7	64.4
16:15	1.3	68.6
16:20	1.6	65.9
16:25	1.7	69.3
16:30	1.6	86.9
16:35	1.1	54.6
16:40	1.4	340.2
16:45	1.4	352.1
16:50	1.6	70.9
16:55	1.4	99.7
17:00	3	292.7
17:05	1	108.3
17:10	1	87.5
17:15	0.4	74.6
17:20	0.5	347.9
17:25	1.9	331.9
17:30	1.6	334.9
17:35	1.3	36.7
17:40	1.6	25.2
17:45	1.6	34.8
17:50	1.5	31.9
17:55	1.1	0.6
18:00	1.3	350.4
18:05	1.2	15.7
18:10	1	5.5
18:15	1.4	42.7
18:20	1.2	24
18:25	1.4	9.6
18:30	1.3	17.9
18:35	1.2	24.9
18:40	1.3	22.2
18:45	1.6	32.7

Report for

2	325.6	0	0	0	1	0	16.1
2	326	0	0	0	1	0	17.6
2	326	0	0	0	1	0	16.5
2	325.8	0	0	0	1	0	23.3
2	325.8	0	0	0	1	0	23
2	325.8	0	0	0	1	0	24.3
2	325.8	0	0	0	1	0	33.5
2	326.1	0	0	0	1	0	24.8
2	326	0	0	0	1	0	21
2	326.1	0	0	0	1	0	15.7
2	326	0	0	0	1	0	18.2
2	325.9	0	0	0	1	0	24.6
2	326	0	0	0	1	0	12.3
2	325.8	0	0	0	1	0	18.7
2	326	0	0	0	1	0	14.9
2	326.2	0	0	0	1	0	19.2
2	326.2	0	0	0	1	0	15.8
2	326	0	0	0	1	0	22.6
2	326.1	0	0	0	1	0	16.1
2	326.2	0	0	0	1	0	22.8
2	326.1	0	0	0	1	0	15.9
2	326.2	0	0	0	1	0	94.7
2	327.4	0	0	0	1	0	39.2
2	326.1	0	0	0	1	0	48.5
2	326	0	0	0	1	0	26.5
2	325.6	0	0	0	1	0	20.5
2	325.5	0	0	0	1	0	65.2
2	326.3	0	0	0	1	0	59.5
2	327	0	0	0	1	0	34.9
2	326.4	0	0	0	1	0	19.2
2	326.7	0	0	0	1	0	14.8
2	326.9	0	0	0	1	0	15.7
2	326.9	0	0	0	1	0	10.6
2	326.5	0	0	0	1	0	19.3
2	326.5	0	0	0	1	0	16.8
2	326.5	0	0	0	1	0	9.8
2	326.4	0	0	0	1	0	18.2
2	326.7	0	0	0	1	0	15.9
2	326.8	0	0	0	1	0	14.4
2	326.9	0	0	0	1	0	12.6
2	326.8	0	0	0	1	0	17.2
2	326.8	0	0	0	1	0	16.7
2	326.9	0	0	0	1	0	11.2
2	327	0	0	0	1	0	12.3

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Channel		1	2
Sensor		WS	WD
Units		MPS	DEG
==========			
	18:50	1.2	48.4
	18:55	1.5	45
	19:00	1.3	52
	19:05	1.1	12
	19:10	1.4	17.3
	19:15	1.1	34.2
	19:20	1.2	18.4
	19:25	1	34.3
	19:30	1	38.9
	19:35	0.9	17
	19:40	1.1	25.8
	19:45	0.8	25.9
	19:50	0.7	21.9
	19:55	0.9	5.5
	20:00	1.1	359.5
	20:05	1	4.2
	20:10	0.5	27.1
	20:15	0.9	18.7
	20:20	1	12
	20:25	1.1	359.1
	20:30	1.4	13.2
	20:35	1.2	6.2
	20:40	1.3	1.4
	20:45	1.5	3.2
	20:50	1.6	21.4
	20:55	1.4	22.3
	21:00	1.1	357.1
	21:05	1.4	28
	21:10	1.4	38.3
	21:15	1.5	46.9
	21:20	1.5	23.9
	21:25	1.4	15.1
	21:30	1.3	23
	21:35	1.2	32.7
	21:40	1.4	31.2
	21:45	1.6	25.8
	21:50	1.7	21
	21:55	1.6	11
	22:00	1.5	3.7
	22:05	1.8	359.8
	22:10	1.7	2.2
	22:15	1.7	5.4

	3	4	5	6	7	8	Rain	Sigma
XXX		XXX	XXX	XXX	XXX XXX		RA	
XXX		XXX	XXX	XXX	XXX XXX		XXX	Deg
	2	326.9	0	0	0	1	0	18.6
	2	326.9	0	0	0	1	0	13.5
	2	326.9	0	0	0	1	0	14.9
	2	326.9	0	0	0	1	0	13.5
	2	327	0	0	0	1	0	12.6
	2	327.2	0	0	0	1	0	14.5
	2	327.3	0	0	0	1	0	8.1
	2	327.2	0	0	0	1	0	15.5
	2	327.1	0	0	0	1	0	14.1
	2	327.1	0	0	0	1	0	14.3
	2	326.9	0	0	0	1	0	10.3
	2	326.8	0	0	0	1	0	10.1
	2	326.5	0	0	0	1	0	10.6
	2	326.4	0	0	0	1	0	8.2
	2	326.6	0	0	0	1	0	8.8
	2	326.5	0	0	0	1	0	10.3
	2	326.2	0	0	0	1	0	14.8
	2	326.3	0	0	0	1	0	5.8
	2	326.5	0	0	0	1	0	9
	2	326.7	0	0	0	1	0	8.8
	2	327	0	0	0	1	0	6.8
	2	327.3	0	0	0	1	0	10.4
	2	327.3	0	0	0	1	0	8
	2	327.7	0	0	0	1	0	12.1
	2	328.2	0	0	0	1	0	9
	2	328.5	0	0	0	1	0	15.2
	2	328.3	0	0	0	1	0	20.6
	2	328.6	0	0	0	1	0	9.8
	2	329.1	0	0	0	1	0	15.2
	2	329.2	0	0	0	1	0	15.5
	2	329.4	0	0	0	1	0	8.6
	2	329.6	0	0	0	1	0	10.5
	2	329.5	0	0	0	1	0	9.1
	2	329.4	0	0	0	1	0	12.6
	2	329.6	0	0	0	1	0	9.6
	2	329.8	0	0	0	1	0	12.6
	2	329.9	0	0	0	1	0	10.8
	2	329.8	0	0	0	1	0	11.2
	2	329.8	0	0	0	1	0	14.4
	2	330.1	0	0	0	1	0	10.9
	2	330.1	0	0	0	1	0	14.5
	2	330.2	0	0	0	1	0	10.9

22:20	1.3	11.6
22:25	1.7	15
22:30	0.9	21.7

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

22:35	1.1	44.8
22:40	1.1	37.2
22:45	0.6	44.5
22:50	0.4	9.2
22:55	0.7	19.6
23:00	0.8	52
23:05	1.1	41.5
23:10	0.9	42
23:15	0.8	48.9
23:20	0.9	78.9
23:25	0.7	79.3
23:30	0.8	55.1
23:35	0.8	47.6
23:40	1.1	15.8
23:45	1.3	9.6
23:50	1.1	14.8
23:55	0.8	58.4
0:00	1.3	313.8

Totals	n/a	
Savg		1.9
Vavg		0

Data Recovery

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

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0:05	1.1	280.2
0:10	1.2	358.7

2	329.9	0	0	0	1	0	14.9
2	329.9	0	0	0	1	0	11.2
2	329.8	0	0	0	1	0	23.3

5/21/2018 - Day 141 > AUTOMET < Station ID: 1

	3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX		RA	
XXX	XXX	XXX	XXX	XXX	XXX		XXX	Deg
	2	329.7	0	0	0	1	0	13
	2	329.8	0	0	0	1	0	15.6
	2	329.4	0	0	0	1	0	28.7
	2	329	0	0	0	1	0	18.5
	2	329.1	0	0	0	1	0	19.9
	2	329.4	0	0	0	1	0	15.3
	2	329.7	0	0	0	1	0	11.2
	2	329.8	0	0	0	1	0	12
	2	329.7	0	0	0	1	0	13.1
	2	329.7	0	0	0	1	0	21.2
	2	329.8	0	0	0	1	0	22
	2	329.7	0	0	0	1	0	14.3
	2	329.7	0	0	0	1	0	14.4
	2	329.9	0	0	0	1	0	17.2
	2	330.3	0	0	0	1	0	11.8
	2	330.2	0	0	0	1	0	17.5
	2	330	0	0	0	1	0	14.1
	2	330.5	0	0	0	1	0	76.8

n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	n/a	
70.3	2	326.4	0	0	0	1	n/a	16.9	
40.6	0	326.4	0	0	0	0	n/a	n/a	

100 %

5/22/2018 - Day 142 > AUTOMET < Station ID: 1

	3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX		RA	
XXX	XXX	XXX	XXX	XXX	XXX		XXX	Deg
	2	330.5	0	0	0	1	0	85.1
	2	330.5	0	0	0	1	0	74.7

0:15	1.2	346.2
0:20	1.3	357.5
0:25	1	70.7
0:30	1.2	41.5
0:35	1.2	68.8
0:40	1	59.2
0:45	1	44.3
0:50	1	78.6
0:55	0.7	96
1:00	0.9	128
1:05	1.2	124.6
1:10	0.7	40.8
1:15	0.9	344.8
1:20	1.2	30.7
1:25	1.7	27.8
1:30	1.4	26.7
1:35	1.4	43.3
1:40	1.4	18.4
1:45	1.1	12.7
1:50	1.7	331.3
1:55	0.9	20
2:00	0.8	353.1
2:05	1.8	292
2:10	1.3	174.9
2:15	0.7	49.3
2:20	0.5	135
2:25	0.6	120.5
2:30	0.6	137.1
2:35	0.6	105.8
2:40	0.8	109.5
2:45	0.7	20.5
2:50	0.8	3.2
2:55	0.8	6
3:00	1.3	4.6
3:05	1.4	31.7
3:10	1.2	16.7
3:15	1.3	33.8
3:20	1.8	11.5
3:25	2.3	0.4
3:30	2.3	342.6
3:35	2.1	8.4
3:40	1.9	351
3:45	2.1	326.8

Report for

2	330.6	0	0	0	1	0	80.8
2	330.8	0	0	0	1	0	94.7
2	330.5	0	0	0	1	0	19.5
2	330.6	0	0	0	1	0	13.7
2	330.8	0	0	0	1	0	15.6
2	330.7	0	0	0	1	0	17
2	330.5	0	0	0	1	0	16.5
2	330.6	0	0	0	1	0	19.3
2	330.5	0	0	0	1	0	17.2
2	330.5	0	0	0	1	0	19.8
2	331	0	0	0	1	0	20.2
2	330.8	0	0	0	1	0	46.3
2	330.5	0	0	0	1	0	23.9
2	330.9	0	0	0	1	0	11.8
2	331.4	0	0	0	1	0	7
2	331.6	0	0	0	1	0	11.4
2	331.5	0	0	0	1	0	10.8
2	331.6	0	0	0	1	0	11
2	331.3	0	0	0	1	0	16.9
2	331.6	0	0	0	1	0	15.9
2	331.6	0	0	0	1	0	27.6
2	331	0	0	0	1	0	24.5
2	331.3	0	0	0	1	0	39.4
2	332.7	0	0	0	1	0	79.4
2	331.6	0	0	0	1	0	58.3
2	330.9	0	0	0	1	0	24.2
2	331	0	0	0	1	0	34.8
2	331.1	0	0	0	1	0	40.6
2	330.9	0	0	0	1	0	53.1
2	331.3	0	0	0	1	0	24
2	331.2	0	0	0	1	0	20.2
2	331.3	0	0	0	1	0	12
2	331.3	0	0	0	1	0	21
2	331.8	0	0	0	1	0	10.5
2	332.1	0	0	0	1	0	13.6
2	332.1	0	0	0	1	0	17.7
2	332.1	0	0	0	1	0	10.7
2	332.6	0	0	0	1	0	10.4
2	333.2	0	0	0	1	0	11.2
2	333.9	0	0	0	1	0	17.6
2	333.8	0	0	0	1	0	15.1
2	333.5	0	0	0	1	0	16.9
2	333.2	0	0	0	1	0	32

5/22/2018 - Day 142 > AUTOMET < Station ID: 1

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG
3:50	1.8	349.8
3:55	1.4	347.9
4:00	1	345.5
4:05	1.6	3.3
4:10	1.7	3
4:15	1.5	7.9
4:20	1.4	354.1
4:25	1.3	345.4
4:30	1.2	356.1
4:35	1.5	14.4
4:40	1.1	21.7
4:45	1.1	18.3
4:50	0.9	11.9
4:55	0.8	50.7
5:00	0.8	77.9
5:05	0.7	64.2
5:10	0.4	14.4
5:15	0.7	340.3
5:20	0.7	336.8
5:25	0.7	341.5
5:30	0.8	344.3
5:35	0.9	344.7
5:40	0.4	135.5
5:45	1	318.2
5:50	0.7	300
5:55	0.9	311.1
6:00	0.9	336.4
6:05	1	341.9
6:10	1	341.8
6:15	0.8	355
6:20	0.6	11
6:25	0.3	18.2
6:30	0.5	23.7
6:35	0.7	60.7
6:40	0.6	65.1
6:45	1	20.9
6:50	0.7	25.2
6:55	0.8	16.2
7:00	0.8	13.1
7:05	0.6	11.9
7:10	1	33.4
7:15	0.8	34.2
7:20	0.6	29.5

	3	4	5	6	7	8	Rain	Sigma
XXX		XXX	XXX	XXX	XXX XXX		RA	
XXX		XXX	XXX	XXX	XXX XXX		XXX	Deg
	2	333.3	0	0	0	1	0	33.4
	2	332.6	0	0	0	1	0	19.1
	2	331.8	0	0	0	1	0	13.6
	2	332.1	0	0	0	1	0	13.1
	2	332.7	0	0	0	1	0	12.7
	2	332.6	0	0	0	1	0	12.4
	2	332.6	0	0	0	1	0	15.4
	2	332.5	0	0	0	1	0	14.6
	2	332.4	0	0	0	1	0	23.5
	2	332.7	0	0	0	1	0	11.3
	2	332.6	0	0	0	1	0	12.6
	2	332.4	0	0	0	1	0	11.5
	2	332.3	0	0	0	1	0	17.2
	2	332	0	0	0	1	0	16.1
	2	332.1	0	0	0	1	0	15.4
	2	332	0	0	0	1	0	41.2
	2	331.9	0	0	0	1	0	22.2
	2	331.9	0	0	0	1	0	9.4
	2	332	0	0	0	1	0	11.8
	2	332.3	0	0	0	1	0	18.2
	2	332.1	0	0	0	1	0	11.3
	2	332.6	0	0	0	1	0	12.4
	2	332.2	0	0	0	1	0	96.1
	2	332.7	0	0	0	1	0	24
	2	332.8	0	0	0	1	0	32.8
	2	332.9	0	0	0	1	0	24
	2	332.9	0	0	0	1	0	13.8
	2	333	0	0	0	1	0	20.9
	2	333	0	0	0	1	0	12.7
	2	332.9	0	0	0	1	0	12.6
	2	332.6	0	0	0	1	0	11.5
	2	332.4	0	0	0	1	0	29.8
	2	332.4	0	0	0	1	0	19.2
	2	332.7	0	0	0	1	0	27.9
	2	332.8	0	0	0	1	0	25.4
	2	333.2	0	0	0	1	0	15
	2	333.2	0	0	0	1	0	19.8
	2	333.3	0	0	0	1	0	16
	2	333.5	0	0	0	1	0	15.9
	2	333.4	0	0	0	1	0	17.9
	2	333.9	0	0	0	1	0	10.7
	2	334	0	0	0	1	0	14.5
	2	333.9	0	0	0	1	0	18.4

7:25	0.7	30.3
7:30	0.7	17.4

Report for

Channel	1	2
Sensor	WS	WD
Units	MPS	DEG

==========

7:35	1	13.8
7:40	0.8	16
7:45	0.8	45.1
7:50	1.1	32.3
7:55	0.9	43.4
8:00	0.9	35.3
8:05	1.3	346.6
8:10	1.3	336.6
8:15	1.6	356
8:20	0.8	357.1
8:25	1.1	20.3
8:30	1.4	2.2
8:35	1.2	356.8
8:40	1.5	34.8
8:45	1.3	40.7
8:50	1.7	38.3
8:55	1.8	31.2
9:00	1.8	30.6
9:05	1.8	26.4
9:10	1.8	1.4
9:15	1.7	1.4
9:20	1.6	2.5
9:25	1.4	4

Totals	n/a	
Savg		1.1
Vavg		0

Data Recovery

*

Parsing CSV Data....

Parsing CSV Data

2	334.1	0	0	0	1	0	16.3
2	334.1	0	0	0	1	0	14

5/22/2018 - Day 142 > AUTOMET < Station ID: 1

3	4	5	6	7	8	Rain	Sigma
XXX	XXX	XXX	XXX	XXX	XXX	RA	
XXX	XXX	XXX	XXX	XXX	XXX	XXX	Deg
2	334.5	0	0	0	1	0	11.6
2	334.4	0	0	0	1	0	21.6
2	334.4	0	0	0	1	0	19.8
2	334.4	0	0	0	1	0	13.2
2	334.6	0	0	0	1	0	17.2
2	334.8	0	0	0	1	0	27.2
2	334.9	0	0	0	1	0	27.1
2	335.1	0	0	0	1	0	29.2
2	335.1	0	0	0	1	0	18.3
2	334.7	0	0	0	1	0	43.1
2	334.2	0	0	0	1	0	24.8
2	334.6	0	0	0	1	0	13.4
2	334.7	0	0	0	1	0	21.2
2	334.9	0	0	0	1	0	12.5
2	334.8	0	0	0	1	0	9.5
2	334.6	0	0	0	1	0	13.1
2	334.6	0	0	0	1	0	8.4
2	334.4	0	0	0	1	0	13.4
2	334.2	0	0	0	1	0	10.4
2	333.9	0	0	0	1	0	18.6
2	333.6	0	0	0	1	0	17.4
2	333.7	0	0	0	1	0	13.5
2	333.5	0	0	0	1	0	16

n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	n/a	
130.1	2	332.6	0	0	0	1	n/a	22.7	
17.6	0	332.6	0	0	0	0	n/a	n/a	

39.2 %

Failed

[RetrieveData]..Failed(07:18.837)

[ClosePort]

[ClosePort]..Done(00:00.379)

[StopThreadLoop]

```
Date,Sensor,Time,WS,WD,XXX,XXX,XXX,XXX,XXX,XXX,RA,
5/15/2018,12:10,5/15/18 12:10,4.3,35.2,2,324.4,0,0,0,1,0,14.4
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5/15/2018,12:20,5/15/18 12:20,4.9,27.4,2,323.1,0,0,0,1,0,16.4
5/15/2018,12:25,5/15/18 12:25,4.5,29.6,2,322.9,0,0,0,1,0,14.1
5/15/2018,12:30,5/15/18 12:30,5.4,30.9,2,323.1,0,0,0,1,0,12.2
5/15/2018,12:35,5/15/18 12:35,5,43.2,2,323.1,0,0,0,1,0,11.4
5/15/2018,12:40,5/15/18 12:40,3.9,22.2,2,322.4,0,0,0,1,0,15.6
5/15/2018,12:45,5/15/18 12:45,3.7,29.9,2,322.2,0,0,0,1,0,17.6
5/15/2018,12:50,5/15/18 12:50,4.7,40,2,322.6,0,0,0,1,0,9.3
5/15/2018,12:55,5/15/18 12:55,4.6,45.6,2,322.6,0,0,0,1,0,13.6
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5/15/2018,13:15,5/15/18 13:15,3.4,25.5,2,321.9,0,0,0,1,0,12.9
5/15/2018,13:20,5/15/18 13:20,2.9,36.2,2,321.6,0,0,0,1,0,14.8
5/15/2018,13:25,5/15/18 13:25,3.6,54.9,2,321.8,0,0,0,1,0,10.2
5/15/2018,13:30,5/15/18 13:30,3.2,65,2,321.7,0,0,0,1,0,16.2
5/15/2018,13:35,5/15/18 13:35,3.3,69.5,2,321.6,0,0,0,1,0,17
5/15/2018,13:40,5/15/18 13:40,3.9,59.3,2,322,0,0,0,1,0,10.3
5/15/2018,13:45,5/15/18 13:45,2.8,83.6,2,321.6,0,0,0,1,0,19.3
5/15/2018,13:50,5/15/18 13:50,3.4,68.3,2,321.7,0,0,0,1,0,12.6
5/15/2018,13:55,5/15/18 13:55,3.7,59.1,2,321.9,0,0,0,1,0,16.5
5/15/2018,14:00,5/15/18 14:00,3.6,61.3,2,321.8,0,0,0,1,0,16
5/15/2018,14:05,5/15/18 14:05,2.9,67.3,2,321.5,0,0,0,1,0,19.9
5/15/2018,14:10,5/15/18 14:10,2.7,68,2,321.4,0,0,0,1,0,19.8
5/15/2018,14:15,5/15/18 14:15,3.4,82.1,2,321.6,0,0,0,1,0,17
5/15/2018,14:20,5/15/18 14:20,4,63.5,2,321.8,0,0,0,1,0,17.9
5/15/2018,14:25,5/15/18 14:25,4.3,53.4,2,321.8,0,0,0,1,0,14.8
5/15/2018,14:30,5/15/18 14:30,3.4,46.4,2,321.5,0,0,0,1,0,17
5/15/2018,14:35,5/15/18 14:35,3.9,54.9,2,321.8,0,0,0,1,0,14.1
5/15/2018,14:40,5/15/18 14:40,4.6,61.6,2,322,0,0,0,1,0,13.7
5/15/2018,14:45,5/15/18 14:45,4.5,62.4,2,322,0,0,0,1,0,13
5/15/2018,14:50,5/15/18 14:50,3.6,57.5,2,321.8,0,0,0,1,0,14.3
5/15/2018,14:55,5/15/18 14:55,4.5,59.5,2,322.1,0,0,0,1,0,16.3
5/15/2018,15:00,5/15/18 15:00,5,53.9,2,322.5,0,0,0,1,0,10.5
5/15/2018,15:05,5/15/18 15:05,5.1,53.8,2,322.6,0,0,0,1,0,13.4
5/15/2018,15:10,5/15/18 15:10,4.6,53.9,2,322.5,0,0,0,1,0,15.4
5/15/2018,15:15,5/15/18 15:15,3.9,46.2,2,322.2,0,0,0,1,0,16.8
5/15/2018,15:20,5/15/18 15:20,4.6,29.4,2,322.4,0,0,0,1,0,16.6
5/15/2018,15:25,5/15/18 15:25,4.8,16.5,2,322.5,0,0,0,1,0,12.7
5/15/2018,15:30,5/15/18 15:30,4.5,14.4,2,322.5,0,0,0,1,0,14.8
5/15/2018,15:35,5/15/18 15:35,4.7,35.8,2,322.5,0,0,0,1,0,13.5
5/15/2018,15:40,5/15/18 15:40,4,23.7,2,322.4,0,0,0,1,0,15.4
5/15/2018,15:45,5/15/18 15:45,4.4,12.7,2,322.4,0,0,0,1,0,13
5/15/2018,15:50,5/15/18 15:50,4.2,11.9,2,322.5,0,0,0,1,0,16.4
5/15/2018,15:55,5/15/18 15:55,4.6,3.3,2,322.5,0,0,0,1,0,14.9
5/15/2018,16:00,5/15/18 16:00,4.7,19.1,2,322.6,0,0,0,1,0,13.7
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5/15/2018,16:05,5/15/18 16:05,4.3,16.2,2,322.5,0,0,0,1,0,14.5
5/15/2018,16:10,5/15/18 16:10,4.6,18.4,2,322.7,0,0,0,1,0,12.9
5/15/2018,16:15,5/15/18 16:15,4.2,22.8,2,322.7,0,0,0,1,0,10.1
5/15/2018,16:20,5/15/18 16:20,4,11,2,322.6,0,0,0,1,0,15.2
5/15/2018,16:25,5/15/18 16:25,3.7,358.7,2,322.5,0,0,0,1,0,15.3
5/15/2018,16:30,5/15/18 16:30,4.1,13.7,2,322.6,0,0,0,1,0,12.3
5/15/2018,16:35,5/15/18 16:35,4.6,351.5,2,322.9,0,0,0,1,0,13.6
5/15/2018,16:40,5/15/18 16:40,4.5,358.2,2,323.1,0,0,0,1,0,14.4
5/15/2018,16:45,5/15/18 16:45,4.6,8.8,2,323.2,0,0,0,1,0,13.5
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5/15/2018,16:55,5/15/18 16:55,4,352.4,2,322.8,0,0,0,1,0,13.3
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5/15/2018,17:05,5/15/18 17:05,4.3,17,2,323.3,0,0,0,1,0,11.5
5/15/2018,17:10,5/15/18 17:10,4,16.4,2,323.2,0,0,0,1,0,12
5/15/2018,17:15,5/15/18 17:15,2.7,4.6,2,322.2,0,0,0,1,0,18.3
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5/19/2018,21:25,5/19/18 21:25,0.9,99.7,2,322.3,0,0,0,1,0,28.1
5/19/2018,21:30,5/19/18 21:30,1.3,82.5,2,322.7,0,0,0,1,0,19.6
5/19/2018,21:35,5/19/18 21:35,1.6,92.3,2,322.8,0,0,0,1,0,15.9
5/19/2018,21:40,5/19/18 21:40,1.1,97.8,2,322.7,0,0,0,1,0,27.2
5/19/2018,21:45,5/19/18 21:45,0.8,90.7,2,322.5,0,0,0,1,0,45.5
5/19/2018,21:50,5/19/18 21:50,1,94.6,2,322.5,0,0,0,1,0,32.4
5/19/2018,21:55,5/19/18 21:55,1.1,81.7,2,322.6,0,0,0,1,0,19.7
5/19/2018,22:00,5/19/18 22:00,0.8,86.1,2,322.5,0,0,0,1,0,26.2
5/19/2018,22:05,5/19/18 22:05,1.1,87.1,2,322.6,0,0,0,1,0,18.4
5/19/2018,22:10,5/19/18 22:10,1.3,97.8,2,322.7,0,0,0,1,0,17.9
5/19/2018,22:15,5/19/18 22:15,1.1,99.6,2,322.9,0,0,0,1,0,21.9
5/19/2018,22:20,5/19/18 22:20,1.1,145.4,2,322.6,0,0,0,1,0,31.2
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5/19/2018,22:35,5/19/18 22:35,0.8,121.1,2,322.6,0,0,0,1,0,45
5/19/2018,22:40,5/19/18 22:40,1.2,49.2,2,322.7,0,0,0,1,0,12.9
5/19/2018,22:45,5/19/18 22:45,0.8,40.4,2,322.6,0,0,0,1,0,13.6
5/19/2018,22:50,5/19/18 22:50,1.1,54.2,2,322.7,0,0,0,1,0,13.2
5/19/2018,22:55,5/19/18 22:55,1.2,55.5,2,322.9,0,0,0,1,0,14.2
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Message

From: Rountree, Jillian [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7D304E5E55A54908B24B17E57ECDBF3C-JROUNTRE]
Sent: 10/11/2018 3:31:40 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]
Subject: RE: Reporting Request

Attorney Client / Ex. 5 hank you!

Jillian Rountree
Air and Radiation Division Detail Attorney
U.S. EPA Region 5
312-353-3849
Some of my email messages and attachments contain information that is privileged, confidential, or prohibited from disclosure under applicable law. If you believe you may have received this message in error, please inform the sender immediately. Further, do not read, print, or distribute any messages or attachments received in error. Immediately delete and otherwise destroy any such messages and attachments. Thank you.

From: Sieffert, Margaret
Sent: Thursday, October 11, 2018 7:09 AM
To: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>
Subject: FW: Reporting Request

Attorney Client / Ex. 5

-Margaret

From: Shappley, Ned
Sent: Thursday, October 11, 2018 7:00 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: FW: Reporting Request

FYI

From: Julie Swift [mailto:Julie.Swift@erg.com]
Sent: Thursday, 11 October, 2018 07:47
To: Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Trinca, Laurie <Trinca.Laurie@epa.gov>; Chen, Xi <Chen.Xi@epa.gov>
Subject: RE: Reporting Request

Ned – We were doing some 'double checking' on the EtO results because this data was going to the industry, and not just to the EPA. We can easier validate with you than it would be with the industry who would do everything they could to invalidate our data. BUT, we have most of the data together and I will send it to my QA to get approved. Would mid-next week work? Thanks and sorry for the delay. Julie

Julie L. Swift
ERG
Office - (919) 468-7924 | Fax - (919) 468-7803
julie.swift@erg.com

From: Shappley, Ned <Shappley.Ned@epa.gov>
Sent: Wednesday, October 10, 2018 8:48 PM
To: Julie Swift <Julie.Swift@erg.com>
Cc: Trinca, Laurie <Trinca.Laurie@epa.gov>; Chen, Xi <Chen.Xi@epa.gov>
Subject: RE: Reporting Request

Julie,

Do we have an update on the full report of the May EtO sampling event in Region 5?

Thanks again for all the effort,

Ned

From: Julie Swift [mailto:Julie.Swift@erg.com]
Sent: Thursday, 13 September, 2018 09:01
To: Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Trinca, Laurie <Trinca.Laurie@epa.gov>; Shelow, David <Shelow.David@epa.gov>
Subject: RE: Reporting Request

Yes, this is a bit more than what we provide to the Chloroprene study, but we can still pull it together relatively easily. I'll try to get it to you early next week. It really depends on whether or not we shut down our system. I'll try to pull the data now and hopefully have everything to create your document. Thank you! Julie

Julie L. Swift
ERG
Office - (919) 468-7924 | Fax - (919) 468-7803
julie.swift@erg.com

From: Shappley, Ned <Shappley.Ned@epa.gov>
Sent: Thursday, September 13, 2018 8:51 AM
To: Julie Swift <Julie.Swift@erg.com>
Cc: Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Trinca, Laurie <Trinca.Laurie@epa.gov>; Shelow, David <Shelow.David@epa.gov>
Subject: Reporting Request

Julie, as we discussed, this is the additional information that Region 5 has requested the following information for the testing in Willowbrook, Illinois in May of 2018. Please let me know fi you have any questions.

Ned

2. Please provide all reports and "raw data" documentation from the laboratory ERG related to validation of the detection limits used and analysis of the field samples and related QC samples, including:
    a. Chromatograms and instrument printouts from the GC/MS for all samples, blanks and QC samples
    b. Copies of chains of custody records related to the samples
    c. Laboratory records of spike sample results, daily calibration and other QC steps taken during the analysis of the samples
    d. Regarding the previously provided document headed "calrpt.txt," please provide a narrative description explaining when these apparent internal standards/spikes were run and the actual spike concentrations.

e. Any reports, SOPs or similar documents maintained by the laboratory regarding modifications and alterations of EPA Method TO-15 to operate SIM mode with low-level detection limits for ethylene oxide.
f. All validation information and reports related to establishing and verifying the detection limits and reporting limits achieved, including records or reports regarding peak heights (response factors) and signal-to-noise comparisons.
g. Regarding the previously provided document headed "Data Review Report," please provide a narrative description of whether this represents the full extent of calibration samples run and whether there were additional calibration curves prepared or run during the course of analyzing the samples.
h. All records and reports regarding the pre-cleaning of the canisters shipped for this study, including cleaning methods and analyses used to verify and certify canisters free of potentially interfering substances.

Ned Shappley | USEPA|OAQPS|AQAD|Measurement Technology Group
109 TW Alexander Drive (E143-02) | Research Triangle Park, NC 27711
email: shappley.ned@epa.gov | Phone (919)541-7903

Message

From: Olson, Erik [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B05E7846315E4BF4B9D0DF0AFDB3EB43-EOLSON02]
Sent: 6/20/2018 2:02:40 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: Re: Working at home this morning, Sterigenics Briefing

Thanks Margaret!

Erik H. Olson
Associate Regional Counsel
U.S. Environmental Protection Agency Region 5
77 West Jackson Boulevard, Mailcode C-14J
Chicago, Illinois 60604
(312)886-6829
olson.erik@epa.gov

From: Sieffert, Margaret
Sent: Wednesday, June 20, 2018 8:47 AM
To: Olson, Erik
Subject: RE: Working at home this morning, Sterigenics Briefing

Erik,

Deliberative & Attorney Client / Ex. 5

-Margaret

Deliberative & Attorney Client / Ex. 5

Deliberative & Attorney Client / Ex. 5

Deliberative & Attorney Client / Ex. 5

From: Olson, Erik
Sent: Wednesday, June 20, 2018 8:30 AM
To: Furey, Eileen <furey.eileen@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: Working at home this morning, Sterigenics Briefing

Hi Eileen,

Personal Matters / Ex. 6

Personal Matters / Ex. 6 'm available to call in to the Sterigenics briefing, but there is no conference line on the invite.

While I don't think the briefing focuses on any legal issues, if needed I'll be available by Conference Line / Ex. 6. Sorry for the late notice.

- Erik

Erik H. Olson
Associate Regional Counsel
U.S. Environmental Protection Agency Region 5
77 West Jackson Boulevard, Mailcode C-14J
Chicago, Illinois 60604
(312)886-6829
olson.erik@epa.gov

Message

From: Sieffert, Margaret [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DBB22FA4A9B14C1E8C634B2E0791CEFA-MSIEFFER]
Sent: 6/20/2018 1:47:02 PM
To: Olson, Erik [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b05e7846315e4bf4b9d0df0afdb3eb43-EOlson02]
Subject: RE: Working at home this morning, Sterigenics Briefing
Attachments: 2018 June 20 RA EtO Briefing final.docx; Ethylene Oxide Short Term Air Monitoring Results Briefing 06202018.pptx

Erik,

Deliberative & Attorney Client / Ex. 5

-Margaret

Deliberative & Attorney Client / Ex. 5

Deliberative & Attorney Client / Ex. 5

From: Olson, Erik
Sent: Wednesday, June 20, 2018 8:30 AM
To: Furey, Eileen <furey.eileen@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: Working at home this morning, Sterigenics Briefing

Hi Eileen,

Personal Matters / Ex. 6

Personal Matters / Ex. 6 m available to call in to the Sterigenics briefing, but there is no conference line on the invite.

While I don't think the briefing focuses on any legal issues, if needed I'll be available by EC500. Sorry for the late notice.

- Erik

Erik H. Olson
Associate Regional Counsel
U.S. Environmental Protection Agency Region 5
77 West Jackson Boulevard, Mailcode C-14J
Chicago, Illinois 60604
(312)886-6829
olson.erik@epa.gov

Message

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 3/22/2018 12:20:58 PM
To: Shelow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3859abc25e634d418478f3d3ca569c79-Shelow, David]; Strum, Madeleine [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=274e5760466644c98978742b76173c3d-Strum, Madeline]; Phillips, Sharon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=771cdf9eb00d48b1bd6a40f42c4c496a-SPHILLIP]
Subject: RE: R5 EtO Sampling Plan

I need to work on my Spam filter, how did this get through?

Thanks for sending these!

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Shelow, David
Sent: Thursday, March 22, 2018 7:35 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Thurman, James <Thurman.James@epa.gov>; Phillips, Sharon <Phillips.Sharon@epa.gov>
Subject: FW: R5 EtO Sampling Plan

Here are the modeling results from Region 5 with respects to Ethylene oxide at Sterigenics Company.
Dave

David M. Shelow
Physical Scientist
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Ambient Air Monitoring Group C304-06
Research Triangle Park, NC 27711
Phone: 919-541-3776
Fax:: 919-541-1903
Email: shelow.david@epa.gov

From: Sieffert, Margaret
Sent: Friday, February 16, 2018 10:42 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Shelow, David <Shelow.David@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: R5 EtO Sampling Plan

Dave, As a way to prepare for a conference call with Wayne, we (Jackie, George, and I) thought it was best to figure out a plan before talking to Wayne. Attached is a sampling plan we drafted (the R6/NATA chloroprene sampling plan was used

as a template). We wanted to share it with you for review and then we will share with Wayne when scheduling the conference call later next week. Please share with others if you think necessary.

Ted and Darcie, we included you so you can review and make sure what we do is sufficient for any ambient sampling that could be used for discussion in the NATA release later this year.

Also included is the sterigenics kmz file so you can zoom in and out of the area in google earth.

Deliberative Process / Ex. 5

-Margaret

Message

From: Stepp, Cathy [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BEFDAFC0FA1A425EAE232F60AD9BDA1D-STEPP, CATH]
Sent: 7/26/2018 5:21:27 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]
Subject: ATSDR Sterigenics EtO Consult Letter-final.pdf
Attachments: ATSDR Sterigenics EtO Consult Letter-final.pdf; ATT00001.htm

Message

Sent: 9/28/2018 8:08:04 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: Stack Testing and Model Parameters

Thanks Margaret! Looks like there are a few instances where the ppm concentration jumps up into the hundreds. Do we know what was

---

From: Sieffert, Margaret
Sent: Friday, September 28, 2018 3:54 PM
To: Witt, Jon <Witt.Jon@epa.gov>
Subject: FW: Stack Testing and Model Parameters

FYI.

From: Nam, Ed
Sent: Thursday, September 27, 2018 4:12 PM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Subject: FW: Stack Testing and Model Parameters

Ned, Margaret

Stack test summaries just arrived. This is just 3 pages.

-Ed

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Thursday, September 27, 2018 3:50 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>
Subject: RE: Stack Testing and Model Parameters

Ed:

Attached is a letter with the stack test results that I just sent to Alec Messina at IL EPA.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

From: Nam, Ed [mailto:nam.ed@epa.gov]
Sent: Thursday, September 27, 2018 11:45 AM
To: Hoffman, Kathy
Cc: Siegel, Kathryn; Cain, Alexis; Armitage, Julie
Subject: Stack Testing and Model Parameters

Hello Kathy,

I was glad to hear that your stack test was completed last week, and we look forward to seeing the results. We would like to make sure that as soon as the results are available, we are able to describe the results to the public. This will mean modeling risk based on a new emissions estimate; therefore, I would like to reiterate that it is imperative that you provide the modeling parameters that we requested, mostly recently in the September 7, 2018 email to you from Alexis Cain.

Even prior to us being able to release modeling information, we will need to describe what the stack tests show about how much emissions have decreased as a result of the back vent controls. Therefore, please provide us, along with the draft stack test results, as soon as they are available, with an estimate of annual stack and fugitive emissions, along with an estimate of the reductions achieved as a result of the back vent project. I also ask that you provide all of your calculations and a description of your estimation method. This will help us both being able to describe to the public the emissions impact of the back vent project and with being able to model revised emissions as soon as possible.

Thank you, and please let me know if you would like to discuss this request.

-Ed

-Edward Nam
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

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Message

From: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Sent: 9/12/2018 7:40:10 PM
To: Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]; Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
Subject: FW: Wiilowbrook Sterigenics

I am not sure if you were informed this from the TRI side. Our TRI staff are asking for copies of the correspondence. I can forward anything else we hear about this but wanted to make sure you were aware of this as we had other facilities in R5 that didn't report to TRI.

-Margaret

From: Som, Kushal
Sent: Wednesday, September 12, 2018 2:19 PM
To: Star, David
Cc: Sieffert, Margaret ; Trine, Rae ; Martig, Anton (Tony) ; Wesley, Abigail ; Myhre, John
Subject: FW: Wiilowbrook Sterigenics

Hi Dave-

Here's the update from HQ. They believe that each of the Sterigenics facilities are not subject to TRI (see below).

Please let me know if you have any questions.

--Kush

Kushal Som
Environmental Engineer
U.S. EPA Region 5
77 West Jackson Blvd. LC-17J
Chicago, IL 60604-3590
(312) 353-5792

From: Senthil, Velu
Sent: Wednesday, September 12, 2018 2:00 PM
To: Som, Kushal <som.kushal@epa.gov>; Martig, Anton (Tony) <martig.anton@epa.gov>
Cc: Senthil, Velu <Senthil.Velu@epa.gov>
Subject: Wiilowbrook Sterigenics

Hi Kush,

I accidentally might have deleted your email about Sterigenics facility in R5.

Here is the response that I got from the contractor:

8/8/18: Sent email to TC; 8/17/18: Through email correspondence with one of the Sterigenics facilities, we have learned that their facilities classified in NAICS 561910 are outside of EPCRA section 313 requirements and will not be reporting to TRI for RY2017 or in the future.

Hope this is helpful.

Thanks

Velu Senthil

Message

From: Schwede, Donna [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=09CF34E8582F49E28D71B72AE05F3A39-SCHWEDE, DONNA]
Sent: 10/21/2018 6:45:13 PM
To: Woody, Matthew [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0c40d81e876149a8abfcf8a1f62a8872-Woody, Matt]
Subject: FW: From OAQPS FW: EtO Question - Affects of Rain

Looks like Rohit got a chance to delve into the EtO question before I did. Please see below for more information.

From: Mathur, Rohit
Sent: Friday, October 19, 2018 3:23 PM
To: Brown, Ann <Brown.Ann@epa.gov>
Cc: Vette, Alan <Vette.Alan@epa.gov>; Pierce, Tom <Pierce.Tom@epa.gov>; Spero, Tanya <Spero.Tanya@epa.gov>; Fahey, Kathleen <Fahey.Kathleen@epa.gov>; Luecken, Deborah <Luecken.Deborah@epa.gov>; Schwede, Donna <Schwede.Donna@epa.gov>
Subject: FW: From OAQPS FW: EtO Question - Affects of Rain

Ann,
I consulted with our chemistry experts – Deborah Luecken and Kathleen Fahey. To our knowledge airborne Ethylene Oxide does not have any major atmospheric sinks (i.e., removal processes):

- Its atmospheric lifetime due the chemistry (dominated by reaction with OH) is about 230 days (Calvert et al., 2011), with major products consisting of formic acid and formic acid anhydride, with some formaldehyde and hydroxymethylformate also formed.
- The Henry's Law constant (an indicator of its dissolution in water) for Ethylene Oxide is ~8.4 M/atm. A rough calculation for a cloud with a 0.1 g/m3 liquid water content, suggests that nearly all of it would reside in the gas phase. In other words, based on its Henry Law constant we don't believe it will readily be scavenged by clouds (or washed out by rain).

The toxics-version of the CMAQ model does include Ethylene Oxide as a modeled species. In principle, more detailed calculations could be conducted to estimate its overall atmospheric lifetime.

Hope that helps,
Rohit

From: Vette, Alan
Sent: Thursday, October 18, 2018 1:06 PM
To: Mathur, Rohit <Mathur.Rohit@epa.gov>; Pierce, Tom <Pierce.Tom@epa.gov>
Subject: FW: From OAQPS FW: EtO Question - Affects of Rain

Can you provide any insights into the question below? It seems EtO would be scavenged to some degree though I'm not aware of any work in this area.

Thanks,
Alan

From: Brown, Ann
Sent: Thursday, October 18, 2018 11:25 AM
To: Vandenberg, John <Vandenberg.John@epa.gov>; Vette, Alan <Vette.Alan@epa.gov>

Cc: Hubbard, Carolyn <Hubbard.Carolyn@epa.gov>
Subject: RE: From OAQPS FW: EtO Question - Affects of Rain

Hi: Just checking back to learn if we have an answer to the question about atmospheric deposition of EtO. Thank you.

Best,
Ann Brown

Communications Lead
Air & Energy Research Program
U.S. Environmental Protection Agency
Research Triangle Park, NC
Work: 919-541-7818
Mobile: 919-605-5827
brown.ann@epa.gov

From: Brown, Ann
Sent: Tuesday, October 16, 2018 1:00 PM
To: Vandenberg, John <Vandenberg.John@epa.gov>; Vette, Alan <Vette.Alan@epa.gov>
Cc: Hubbard, Carolyn <Hubbard.Carolyn@epa.gov>
Subject: From OAQPS FW: EtO Question - Affects of Rain

Hi: OAQPS communications is coordinating responses to questions from the public about ethylene oxide. Do we know if rain washes the air toxic out of the atmosphere? Thank you.

Best,
Ann Brown

Communications Lead
Air & Energy Research Program
U.S. Environmental Protection Agency
Research Triangle Park, NC
Work: 919-541-7818
Mobile: 919-605-5827
brown.ann@epa.gov

From: Bremer, Kristen
Sent: Monday, October 15, 2018 4:10 PM
To: Brown, Ann <Brown.Ann@epa.gov>
Subject: FW: EtO Question - Affects of Rain

Hi Ann,

Here's the question regarding ethylene oxide (EtO). They want to know, "whether it is accurate that rain washes EtO from the atmosphere."

Kristen Bremer
Policy Analysis & Communications
U.S. EPA, Office of Air Quality Planning & Standards
Email: bremer.kristen@epa.gov
Phone: 919.541.9424
Cell: 919.321.7652

From: Rimer, Kelly
Sent: Monday, October 15, 2018 9:05 AM
To: Bremer, Kristen <Bremer.Kristen@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Cc: Hollingsworth, Terri <Hollingsworth.Terri@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>
Subject: FW: EtO Question - Affects of Rain

Another question from Willowbrook
He would like the answer to be posted on our website

From: Tim Halik [mailto:thalik@willowbrook.il.us]
Sent: Monday, October 15, 2018 8:58 AM
To: Rimer, Kelly <Rimer.Kelly@epa.gov>
Cc: John Wawak <johnwawak@yahoo.com>; Frank Trilla <ftrilla@willowbrook.il.us>
Subject: FW: EtO Question - Affects of Rain

Kelly –

In a previous discussion with Sterigenics personnel, our mayor was advised that EtO is a highly reactive substance and breaks down quickly in sunlight and water. Mayor Trilla subsequently shared this information with an individual from the public, Mr. John Wawak. Based on Mr. Wawak's review of applicable information, he questions whether it is accurate that rain washes EtO from the atmosphere. He forwarded the attached information in support of his position.

Could the USEPA staff please review this information to determine the correct answer to the question? I would anticipate that you could provide the answer on the Q&A format on your Sterigenics website.

Thank you.

Tim Halik
Village Administrator
Village of Willowbrook
835 Midway Drive
Willowbrook, IL 60527

Office (direct): 630.920.2261
Fax: 630.323.0787
E-mail: thalik@willowbrook.il.us
Web: www.willowbrookil.org

From: John Wawak <johnwawak@yahoo.com>
Sent: Friday, October 12, 2018 3:28 PM
To: Tim Halik <thalik@willowbrook.il.us>
Subject: EtO - Affects of Rain

Tim,

I was talking with Mayor Trilla and he mentioned someone (I believe from the EPA) told him that rain washes EtO from the atmosphere.

That is contrary to what I understood. I know that everyone is trying to locate the best and right data.

I have attached a 1985 EPA document that states that rain does not have the affect of washing Ethylene Oxide from the air.

See pages 50 & 51 of the file (page 44 & 45 of the report).

aqueous phase. Even without considering revolatilization of the chemical, however, rain out will still not be effective in removing the chemical from the environment: the estimated lifetime due to rain out is hundreds of years. Experimental measurements and theoretical modeling of rain out effects have demonstrated little impact from rain out for gases which are even far more soluble than ethylene oxide.[56]

Perhaps there is updated science on that conclusion?

Regards,

John Wawak

Message

From: Nwia, Jacqueline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D299B56BD7EF46709FB7465FD1E15466-JNWIA]
Sent: 8/30/2018 5:08:06 PM
To: Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]
CC: McEvoy, Chad [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=47e7e24a4df14138917bbee65d8e8a08-CMcEvoy]; Qazzaz, Bilal [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=779fa066f1974031969ce3f09a410d78-BQazzaz]
Subject: Sterigenics Documents

I forgot that I had already created a Sterigenics Monitoring folder on the AMAS sharepoint site. There you will find the signed QAPP, sampling plan and editable versions of both as well as other related documents (report, deviations from QAPP memo, photos, and lab results). The QAPP and sampling plan should only need minor edits.

Internal Link / Ex.6

If the monitoring will take place the week of September 17th, I'd like to be involved, please.

Personal Privacy / Ex. 6 Feel free (really!!) to contact me with any questions, please. I think everyone has my cell number and I will have my laptop, in case you need anything else during that time.

Jackie

Jacqueline Nwia
Environmental Scientist
Air Monitoring and Analysis Section
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. Environmental Protection Agency, Region 5
77 West Jackson Blvd. (AR-18)
Chicago, IL 60604
ph. (312) 886-6081
nwia.jacqueline@epa.gov

Message

From: Nwia, Jacqueline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D299B56BD7EF46709FB7465FD1E15466-JNWIA]
Sent: 9/7/2018 4:20:52 PM
To: Fuoco, Marta [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=acb697586be74cf2ac37b0f4e221da97-MFuoco]; Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]
Subject: 2018September-draftEtOSamplingPlan Phase II v. 1
Attachments: 2018September-draftEtOSamplingPlan Phase II v. 1.docx

Message

From: Fuoco, Marta [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=ACB697586BE74CF2AC37B0F4E221DA97-MFUOCO]
Sent: 9/6/2018 9:23:30 PM
To: Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]
Subject: QAPP draft
Attachments: Sterigenics_QAPP_PhaseII_1.0.docx

Marta A. Fuoco | U.S. Environmental Protection Agency R5
Air & Radiation Division | Air Monitoring and Analysis
77 W. Jackson Blvd. (AR-18J) | Chicago, IL 60604 | 312.886.6243

Appointment

From: Deamer, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f2d19c60656344f5b14361c0acc826d2-EDeamer]
Sent: 9/20/2018 6:50:13 PM
To: Deamer, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f2d19c60656344f5b14361c0acc826d2-EDeamer]; joel.creswell@mail.house.gov

Subject: Discussion of EO and Sterigenics

Start: 9/21/2018 1:00:00 PM
End: 9/21/2018 1:30:00 PM
Show Time As: Busy

Eileen will call Personal Phone / Ex. 6

Here are a couple of links that might give you some background information before tomorrow.

https://www.epa.gov/national-air-toxics-assessment/nata-overview

https://www.epa.gov/national-air-toxics-assessment/2014-nata-assessment-results

https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide

https://www.epa.gov/il/sterigenics-willowbrook-facility-documents

Message

From: Deamer, Eileen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F2D19C60656344F5B14361C0ACC826D2-EDEAMER]
Sent: 9/27/2018 8:45:55 PM
To: kweaver@darienil.gov
CC: Fortin, Denise [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7e58c489d49f46629d3512e1e9731135-DGawlins]; bvana@darienil.gov
BCC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: Sterigenics Plant in Willowbrook Letter
Attachments: Signed Response to Mayor Kathleen Weaver re Willowbrook, IL.PDF

Good Afternoon Mayor –

Please find attached a letter you will soon be receiving in the mail regarding the Sterigenics Plant in Willlowbrook, Illinois.

Let me know if you have any questions.

Thank you,

Eileen Deamer
U.S. EPA Region 5
Congressional and Intergovernmental
(312) 886-1728

Message

From: Deamer, Eileen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F2D19C60656344F5B14361C0ACC826D2-EDEAMER]
Sent: 10/2/2018 7:40:56 PM
To: apeterson@villageoflagrange.com
CC: Fortin, Denise [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7e58c489d49f46629d3512e1e9731135-DGawlins]
Subject: EPA Sterigenics webpage

Hello –

EPA Sterigenics webpage has been expanded to include additional information to help explain the work being done in and around the Sterigenics facility in Willowbrook, IL. Thank you all for your attention to this matter, as well as your willingness to work with us to understand how best to communicate to the community.

The webpage can be found at: https://www.epa.gov/il/sterigenics-willowbrook-facility

Illinois EPA has a webpage as well on the topic and it can be found at: https://www2.illinois.gov/epa/topics/community-relations/sites/sterigenics/Pages/default.aspx

Thank you,

Eileen Deamer
U.S. EPA Region 5
Congressional and Intergovernmental
(312) 886-1728

Message

From: Siegel, Kathryn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F57A52EFEAD9497CB582B11B8C85F09F-KSIEGE02]
Sent: 6/26/2018 8:30:46 PM
To: Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]
CC: Olson, Erik [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b05e7846315e4bf4b9d0df0afdb3eb43-EOlson02]; Rountree, Jillian [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7d304e5e55a54908b24b17e57ecdbf3c-JRountre]
Subject: agenda for Sterigenics meeting

Hi Eileen,

The agenda for tomorrow's Sterigenics meeting is below. Please let us know if you have any questions. Thanks!

- Introductions
- Sterigenics questions for EPA about modeling and monitoring
- EPA questions for Sterigenics about modeling parameters
- Timeline for construction project
- Estimated emissions after construction project
- Potential monitoring/stack tests
- Future meetings

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

Message

From: Isom, Kristen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FC2D35BD29FF429BA4F11D5A8EF4A7A7-ISOM, KRIST]
Sent: 10/3/2018 9:34:25 PM
To: Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]
CC: Reshkin, Karen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=17e2474bb6994d12aa2d825d1e350ca2-KReshkin]
Subject: 10-3-18 Weekend Report
Attachments: 10-3-18 Weekend Report.docx

Jeff,

Attached is the draft weekend report. I have not included Otsego as I have not heard back from Tom Poy yet.

Thanks,

Kristen Isom
USEPA
77 W. Jackson Blvd.
Chicago, IL 60604
isom.kristen@epa.gov
312.353.6318

From: Kelley, Jeff
Sent: Wednesday, October 03, 2018 2:09 PM
To: Isom, Kristen <isom.kristen@epa.gov>
Subject: RE: Weekend Report Ideas

Deliberative Process / Ex. 5

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Isom, Kristen
Sent: Wednesday, October 03, 2018 1:56 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>
Subject: RE: Weekend Report Ideas

Hi Jeff,

Thank you. I have questions out and am working on revisions now. **Deliberative Process / Ex. 5**

Deliberative Process / Ex. 5

Thanks,

Kristen Isom
USEPA
77 W. Jackson Blvd.
Chicago, IL 60604
isom.kristen@epa.gov
312.353.6318

From: Kelley, Jeff
Sent: Wednesday, October 03, 2018 12:52 PM
To: Isom, Kristen <isom.kristen@epa.gov>
Cc: Reshkin, Karen <Reshkin.Karen@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>
Subject: RE: Weekend Report Ideas

Here's my thoughts:

Deliberative Process / Ex. 5

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Isom, Kristen
Sent: Wednesday, October 03, 2018 12:38 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>
Cc: Reshkin, Karen <Reshkin.Karen@epa.gov>
Subject: Weekend Report Ideas

Jeff,

My ideas for the weekend report below. I'm unfortunately in meetings all day until 4 (including one with you on IHC at 3), but will be here late this evening working on the weekend report and Cathy's Foundry remarks.

Hot Issues:
Sterigenics Follow-Up from Meeting with DuPage County (concerns from DuPage County on EtO in drinking water; website went up on 10/1); (ask Tom Poy)
Otsego Drinking Water Update (ask Tom Poy)

Upcoming Events/Major Decisions:
RA Stepp to Speak at American Foundry Society Conference on Oct. 9 in Ohio
RA Stepp to Tour Detroit Marathon Refinery on Oct. 10

Thanks,

Kristen Isom
USEPA
77 W. Jackson Blvd.
Chicago, IL 60604
isom.kristen@epa.gov
312.353.6318

Message

From: Lissa Druss Christman [lissa@serafin.com]
Sent: 8/28/2018 3:38:53 PM
To: Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]
CC: ftrilla@willowbrook.il.us
Subject: Re: EPA statement

Senator Curran will be on our 1230 call.

Lissa Druss

Serafin & Associates, Inc.
409 W. Huron St., Suite 600
Chicago, IL 60654
office: 312.943.1955
mobile: 312.259.8600
Twitter | LinkedIn

On Aug 28, 2018, at 10:28 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> Sounds good, thanks.
>
> ------
> ***Jeff Kelley***
> *Director, Office of External Communications*
> *U.S. EPA Region 5*
> *ph: 312-353-1159*
>
> On Aug 28, 2018, at 10:26 AM, Lissa Druss Christman <lissa@serafin.com> wrote:
>
>> I'm not physically with the mayor so I need to triple check but again, we had a meeting about this at the same time so we should be good.
>
> **Lissa Druss**

Serafin & Associates, Inc.
409 W. Huron St., Suite 600
Chicago, IL 60654
office: 312.943.1955
mobile: 312.259.8600
Twitter | LinkedIn

> On Aug 28, 2018, at 10:18 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:
>
>> Great! I'll send around conference call information.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

On Aug 28, 2018, at 10:16 AM, Lissa Druss Christman <lissa@serafin.com> wrote:

> I'm pretty sure that will work.
>
> **Lissa Druss**
>
> **Serafin & Associates, Inc.**
> 409 W. Huron St., Suite 600
> Chicago, IL 60654
> office: 312.943.1955
> mobile: 312.259.8600
> Twitter | LinkedIn
>
> On Aug 28, 2018, at 10:15 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:
>
>> Could you do 12:30? I think that would work better for us, but we can adjust if necessary.
>>
>> ---
>> ***Jeff Kelley***
>> *Director, Office of External Communications*
>> *U.S. EPA Region 5*
>> *ph: 312-353-1159*
>>
>> On Aug 28, 2018, at 10:12 AM, Lissa Druss Christman <lissa@serafin.com> wrote:
>>
>>> Jeff,
>>> Hi. We were having an internal planning meeting at 12pm
>>> Would that work for you?
>>>
>>> **Lissa Druss**
>>>
>>> **Serafin & Associates, Inc.**

409 W. Huron St., Suite 600
Chicago, IL 60654
office: 312.943.1955
mobile: 312.259.8600
Twitter | Linkedin

On Aug 28, 2018, at 8:52 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> Mayor Trilla,
>
> A couple small things …
>
> - I want to make sure you saw the note else

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- I want confirm that the meeting tomorrow evening

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Kelley, Jeff

Sent: Monday, August 27, 2018 3:53 PM
To: ftrilla@willowbrook.il.us
Cc: lissa@serafin.com
Subject: EPA statement

Mayor Trilla,

I want to share with you the statement that EPA has provided to reporters who asked us about ethylene oxide emissions from the Sterigenics facility.

Also, Kurt Thiede has

asked me to be EPA's primary point of contact as we prepare for the community meeting on Wednesday evening. In that respect, a couple questions:

- Have you confirmed allocation for t

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

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Across the country, U.S. EPA is taking steps t

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Message

From: Klevs, Mardi [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=8C6E1F8B9F684F3ABBF7896FD7701285-MKLEVS]
Sent: 8/29/2018 7:21:03 PM
To: Star, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=339c95bd0eb949a292b8ee8856c77358-DStar]; Calvo, Estrella [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6ac349d70a4c4821b436c1ea8ef02391-ECalvo]; Martig, Anton (Tony) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3d44a5a83a374b9f85f9e7d284a2ad84-TMartig]
Subject: FW: Greenwire: EPA finds high cancer risk near Chicago fumigation business

Enforcement Techniques / Ex. 7(e) DPP/ Ex. 5

Mardi Klevs, Chief
Chemicals Management Branch
Land and Chemicals Division
Region 5
United States Environmental Protection Agency
77 W. Jackson (LC-17J)
Chicago, IL 60604
312-353-5490
klevs.mardi@epa.gov

From: Jones, Margaret
Sent: Wednesday, August 29, 2018 1:51 PM
To: Klevs, Mardi <klevs.mardi@epa.gov>
Subject: RE: Greenwire: EPA finds high cancer risk near Chicago fumigation business

Yes- here are some links to information in ChemSearch on the OPP web page. The second link includes the work plan from 2014.

https://iaspub.epa.gov/apex/pesticides/f?p=CHEMICALSEARCH:3:::NO:1,3,31,7,12,25:P3_XCHEMICAL_ID:2326
file:///C:/Users/mjones08/Documents/_MovedData/Region2%20Maria%20Response%2011-12%202017/OGC/OLD%20D%20Drive/bees%202018/EPA-HQ-OPP-2013-0244-0017.pdf

---

From: Klevs, Mardi
Sent: Wednesday, August 29, 2018 1:40 PM
To: Jones, Margaret <jones.margaret@epa.gov>
Subject: FW: Greenwire: EPA finds high cancer risk near Chicago fumigation business

Is eto considered a pesticide?

Mardi Klevs, Chief
Chemicals Management Branch
Land and Chemicals Division
Region 5
United States Environmental Protection Agency
77 W. Jackson (LC-17J)
Chicago, IL 60604
312-353-5490
klevs.mardi@epa.gov

From: Jones, Margaret
Sent: Wednesday, August 29, 2018 1:19 PM
To: Calvo, Estrella <calvo.estrella@epa.gov>; Star, David <star.david@epa.gov>
Cc: Klevs, Mardi <klevs.mardi@epa.gov>
Subject: Greenwire: EPA finds high cancer risk near Chicago fumigation business

PUBLIC HEALTH

EPA finds high cancer risk near Chicago fumigation business

Published: Wednesday, August 29, 2018

People who live near two Chicago buildings owned by a company that fumigates medical instruments, pharmaceutical drugs and food to kill bacteria and pests face some of the highest cancer risks from air pollution in the country, according to new research.

EPA found that ethylene oxide, the gas used by Sterigenics International, is more dangerous than experts previously thought.

The agency estimates that the cancer risk in one tract near the plant is over nine times the national average.

The company is owned by a private equity firm that Illinois Gov. Bruce Rauner (R) co-founded. He left the firm a year later to run for public office.

Rauner criticized EPA for releasing the report to the public without an explanation of the findings.

"This is not an emergency. This is not a public health immediate crisis. This is something we are managing," Rauner said. "We are going to work with the federal government to monitor this whole situation ... and try to reduce exposures from this as much as we can."

Others did not take the finding as lightly.

"This is just staggering," said Peter Orris, a veteran occupational and environmental medicine researcher at the University of Illinois, Chicago. "They shouldn't be using this chemical as a sterilizer because it can't be controlled."

Sterigenics' parent company said it is still reviewing the study (Michael Hawthorne, *Chicago Tribune*, Aug. 28). **— CS**

Margaret Jones
US EPA Region 5
Pesticides Section
jones.margaret@epa.gov
www.epa.gov/pesticides/
312-353-5790
CONFIDENTIALITY NOTICE – UNCLASSIFIED INFORMATION
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Message

Sent: 10/9/2018 4:15:40 PM
Subject: FW: Region 5's Weekend Report
Attachments: 10-3-18 Weekend Report.jp.docx

From: Rowan, Anne
Sent: Thursday, October 04, 2018 5:56 PM
To: Weekly Report Group <Weekly_Report_Group@epa.gov>
Cc: Thiede, Kurt <thiede.kurt@epa.gov>; Payne, James <payne.james@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Isom, Kristen <isom.kristen@epa.gov>
Subject: Region 5's Weekend Report

HOT ISSUES:

Ill. Gov. Rauner Calls for Sterigenics Willowbrook Facility Closure
Key Message: Illinois Governor Rauner calls for the shutdown of the Sterigenics Willowbrook Facility and makes a referral to the Illinois Attorney General. EPA has posted the Sterigenics website that includes the air sampling data and ATSDR's analysis.

This spring, Region 5 monitoring detected elevated levels of ethylene oxide near the Sterigenics facility in the community. A report published by ATSDR shows an elevated cancer risk exists for residents and off-site workers, assuming chronic exposure. Region 5 is working with Illinois EPA and Sterigenics to reduce emissions of ethylene oxide from the company's facility. In July, the company installed additional pollution controls to capture ethylene oxide emissions. The Region continues to work cooperatively with the Illinois EPA, local officials and the company.

Ambient Air Quality Monitoring to Begin in Whiting, Ind. Week of Oct. 8
Key Message: Region 5 will be installing advanced air quality monitoring equipment to provide ambient air hourly measurements of lead and other metals in Whiting, Ind. as early as next week. This will likely draw attention from the public.

U.S. EPA has been working with the Indiana Department of Environmental Management to assess lead concentrations in the air in Whiting, Indiana. After using computer modeling to better characterize air quality near the Whiting Metals facility, EPA coordinated with IDEM to start collecting filter-based air samples every third day in August. Enforcement Techniques / Ex. 7(e)

Enforcement Techniques / Ex. 7(e)

Enforcement Techniques / Ex. 7(e) The monitor will be situated near Whiting Metals and the Federated Metals Corp. Superfund site. EPA will continue to work with IDEM to measure lead levels and take any steps needed to protect public health and the environment.

Michigan PFAS Round table in Kalamazoo, Mich. on Oct. 5
Key Message: The Michigan PFAS round table and nearby site visits are taking place this week. Community groups have been critical of short notice of the event and the selected format.

The round table will be an opportunity for community representatives from across Michigan to discuss identifying PFAS, communicating about PFAS, and developing solutions. The round table will be preceded by a series of site visits in Ann

Arbor and Parchment to provide senior EPA staff with the opportunity to learn from local officials how their communities are addressing PFAS issues and what lessons have been learned. A press availability will follow the round table.

UPCOMING EVENTS/MAJOR DECISIONS:

RA Stepp to Speak at American Foundry Society Conference on Oct. 9 in Ohio:
Key Message: RA Stepp will speak at the American Foundry Society's Environmental, Health and Safety Conference in Warrensville Heights, Ohio on Oct. 9. She will be discussing Region 5's approach to environmental policy priorities and challenges.

RA Stepp to Tour Detroit Marathon Refinery on Oct. 10:
Key Message: RA Stepp will be visiting the Marathon Refinery in Detroit, Mich. on Oct. 10 to view operations and discuss Region 5 coordination with the oil industry.

Message

From: Payne, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=61B3204A683041079512B122C580A569-PAYNE, JAME]
Sent: 6/20/2018 3:05:11 PM
To: Martinez, Isidra [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f8b8fe5bb9774e1daaaf8d45c628a535-IMartine]
Subject: Fwd: EtO Sterigenics

Sent from my iPhone

Begin forwarded message:

> **From:** "Nam, Ed" <nam.ed@epa.gov>
> **Date:** June 19, 2018 at 5:45:26 PM CDT
> **To:** "Siegel, Kathryn" <siegel.kathryn@epa.gov>, "Payne, James" <payne.james@epa.gov>
> **Cc:** "Cain, Alexis" <cain.alexis@epa.gov>, "Furey, Eileen" <furey.eileen@epa.gov>, "Sieffert, Margaret" <Sieffert.Margaret@epa.gov>, "Bollweg, George" <bollweg.george@epa.gov>, "Nwia, Jacqueline" <nwia.jacqueline@epa.gov>, "Ogulei, David" <Ogulei.David@epa.gov>, "Frank, Nathan" <frank.nathan@epa.gov>
> **Subject: Re: EtO Sterigenics**
>
> Jim
>
> We can get into more detail at tomorrow's briefing but for now below are some draft answers to your excellent questions.
>
> Ed
>
> Sent from my iPhone
>
> **From:** Payne, James
>
> > **Sent:** Monday, June 18, 2018 11:03 AM
> > **To:** Nam, Ed <nam.ed@epa.gov>
> > **Cc:** Mooney, John <Mooney.John@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>; Thiede, Kurt <thiede.kurt@epa.gov>
> > **Subject:** RE: EtO Sterigenics
> >
> > Thanks Ed. Very helpful. And would welcome input below. Jim

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5, Enforcement/Investigatory / Ex. 7(a), Enforcement Techniques / Ex. 7(e)

From: Nam, Ed
Sent: Monday, June 18, 2018 8:32 AM
To: Thiede, Kurt <thiede.kurt@epa.gov>; Payne, James <payne.james@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Williams, Felicia <Williams.Felicia@epa.gov>; Martinez, Isidra <Martinez.Isidra@epa.gov>
Cc: Mooney, John <Mooney.John@epa.gov>; Breneman, Sara <breneman.sara@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>; King, Suzanne <king.suzanne@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Subject: RE: EtO Sterigenics

Felicia, Isidra,

[redacted]

Thanks

-Ed

-----Original Appointment-----
From: Thiede, Kurt
Sent: Tuesday, June 12, 2018 1:15 PM
To: Thiede, Kurt; Payne, James; Nam, Ed; Furey, Eileen; Cain, Alexis; Siegel, Kathryn; Bollweg, George; Compher, Michael; Olson, Erik; Shaffer, Loretta; Nwia, Jacqueline; Sieffert, Margaret
Subject: EtO Sterigenics
When: Wednesday, June 20, 2018 10:00 AM-10:45 AM (UTC-06:00) Central Time (US & Canada).
Where: RA's Large Conf. Rm.

Message

From: Payne, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=61B3204A683041079512B122C580A569-PAYNE, JAME]
Sent: 9/6/2018 9:44:01 PM
To: Marshall, Marjorie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea83c5335ede457f80eafbde7ca4820b-MMarsh02]; Williams, Felicia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6527f339ddb0443c8fa6188e5038057d-FWilli02]
Subject: Fwd: Draft Talking Points for Bill Wehrum

Pls print

Sent from my iPhone

Begin forwarded message:

> **From:** "Nam, Ed" <nam.ed@epa.gov>
> **Date:** September 6, 2018 at 2:32:01 PM CDT
> **To:** "Stepp, Cathy" <stepp.cathy@epa.gov>, "Thiede, Kurt" <thiede.kurt@epa.gov>, "Payne, James" <payne.james@epa.gov>
> **Cc:** "Siegel, Kathryn" <siegel.kathryn@epa.gov>, "Furey, Eileen" <furey.eileen@epa.gov>, "Cain, Alexis" <cain.alexis@epa.gov>
> **Subject: Draft Talking Points for Bill Wehrum**
>
> Cathy,
>
> Here are bullets for your discussion with Bill Wehrum
>
> - Deliberative Process / Ex. 5
> - Since we conducted sampling over three days in May, which found elevated EtO concentrations, Sterigenics has improved their emissions control systems, which should result in significantly reduced EtO concentrations.
> - The Mayor as well as Congressionals have mirrored citizen concerns about whether the controls would be sufficient to protect public health; to help answer those questions, we committed to additional monitoring.
> - Deliberative Process / Ex. 5
> - Deliberative Process / Ex. 5 Deliberative Process / Ex. 5
> - Congressionals and the public have been made aware at the hearing that any post control ambient testing could result in "non-detects", which won't necessarily be conclusive, but nevertheless will be indicative of significant emission reductions.
> - Deliberative Process / Ex. 5

Message

From: Kelley, Jeff [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=E154FA5A5F744C70AA3DA58E3F87AABE-JKELLEY]
Sent: 9/5/2018 7:07:31 PM
To: Lewis, Evelyn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fb53946761be49669c95bb1a46057596-Lewis, Evel]; McCree, Barbara [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d9c75b26978b45b29e8354f8c82e8d17-BMcCree]
CC: Wallace, Sandra [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8762b46640234ad19118e1c18a33186f-SWalla02]; Reshkin, Karen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=17e2474bb6994d12aa2d825d1e350ca2-KReshkin]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: Calls about Sterigenics Willowbrook facility
Attachments: 20180905-sterigenics-info-card.pdf

Barbara and Evelyn, I want to give you a heads up that you could receive some calls from the public about the Sterigenics facility in Willowbrook. Those should be directed to the Air Division … Katie, who will be your point person for public inquiries?

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Message

From: Rountree, Jillian [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7D304E5E55A54908B24B17E57ECDBF3C-JROUNTRE]
Sent: 9/13/2018 7:01:47 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: Deliberative Process / Ex. 5 & Enf. Investigation and Techniques / Ex. 7(a) and 7(e)

Attorney Client / Ex. 5

Jillian Rountree
Air and Radiation Division Detail Attorney
U.S. EPA Region 5
312-353-3849
Some of my email messages and attachments contain information that is privileged, confidential, or prohibited from disclosure under applicable law. If you believe you may have received this message in error, please inform the sender immediately. Further, do not read, print, or distribute any messages or attachments received in error. Immediately delete and otherwise destroy any such messages and attachments. Thank you.

From: Siegel, Kathryn
Sent: Thursday, September 13, 2018 2:00 PM
To: Rountree, Jillian <Rountree.Jillian@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: Deliberative Process / Ex. 5 & Enf. Investigation and Techniques / Ex. 7(a) and 7(e)

FYI

From: Star, David
Sent: Thursday, September 13, 2018 1:47 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Som, Kushal <som.kushal@epa.gov>
Subject: Deliberative Process / Ex. 5 & Enf. Investigation and Techniques / Ex. 7(a) and 7(e)

Lutheran General would not be covered under NAICS codes subject to EPCRA 313.

David Star

David Star
Chief, Pesticides & Toxics Compliance Section
Chemicals Management Branch
U.S. EPA Region 5 - Chicago
312-886-6009 (telephone)
312-692-2536 (facsimile)
EPA United States Environmental Protection Agency

From: Siegel, Kathryn
Sent: Tuesday, August 28, 2018 9:28 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>
Cc: Trine, Rae <trine.rae@epa.gov>; King, Suzanne <king.suzanne@epa.gov>
Subject: RE: EtO in R5 -- TRI and NEI comparison

*correction

- four facilities did not report to TRI
    - Medline
    - Baxter
    - Cardiac Pacemakers
    - Lutheran General

From: Siegel, Kathryn
Sent: Tuesday, August 28, 2018 9:24 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>
Cc: Trine, Rae <trine.rae@epa.gov>; King, Suzanne <king.suzanne@epa.gov>
Subject: EtO in R5 -- TRI and NEI comparison

Darcie,

After the Vantage question came up, Rae and Suzanne began doing a comparison of NEI and TRI for EtO. Rae queried the databases for reported EtO emissions of >200 pounds, summarized in the table below.

			NEI	TRI		
state	**county**	**site name**	**2014**	**2014**	**2015**	**2016**
IL	DuPage	Sterigenics US LLC	5565.964	5241	4899	4205
IL	Lake	Vantage	did not report	6412	11541	11541
IL	Lake	Medline Industries Inc Northpoint Services Div	3057.6	did not report		
MI	Kent	MedPlast Medical Inc.	1170.33	1170	1347	1294
IN	Monroe	Cook, Incorporated	678	678	775	746
IL	Will	Stepan Co	656.145	665	687	464
IL	Lake	Baxter Healthcare Corp	590	did not report		
IL	Cook	Pelron Corp	436.8	443	464	373
WI	Rock	EVONIK MATERIALS CORP	429.4	970[1]	495	518
				793[2]	639	240
MN	Ramsey	Cardiac Pacemakers Inc/Boston Scientific	304.3	did not report		
IL	Macon	Tate & Lyle Ingredients Americas LLC	236.52	312	312	312
IL	Cook	Lutheran General Hospital	206.736	did not report		
MI	Wayne	BASF Corp	did not report	175	284	845

1) 900 S PALM ST, JANESVILLE WISCONSIN 53548 (ROCK)
2) 337 VINCENT ST, MILTON WISCONSIN 53563 (ROCK)

This exercise brought up a couple of additional questions:

- like Vantage, BASF does not show up in NEI for EtO
- Evonik reported EtO emissions to TRI for two addresses in Rock County; the TRI reported levels do not match what is in NEI
- three facilities did not report to TRI
    - Medline
    - Cardiac Pacemakers
    - Lutheran General

Deliberative Process / Ex. 5, Enforcement/Investigatory Ex. / 7(a)

Deliberative Process / Ex. 5, Enforcement/Investigatory Ex. / 7(a)

Thank you!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

Message

Sent: 10/2/2018 9:28:00 PM
To: Breneman, Sara [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=abec1970102a45cfb6b842503a9fae06-SBrenema]; Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
CC: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Request for Inspection

Jillian Rountree
Air and Radiation Division Detail Attorney
U.S. EPA Region 5
312-353-3849
Some of my email messages and attachments contain information that is privileged, confidential, or prohibited from disclosure under applicable law. If you believe you may have received this message in error, please inform the sender immediately. Further, do not read, print, or distribute any messages or attachments received in error. Immediately delete and otherwise destroy any such messages and attachments. Thank you.

From: Nam, Ed
Sent: Tuesday, October 2, 2018 2:33 PM
To: Breneman, Sara <breneman.sara@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Request for Inspection

Tried calling you. Stop by, let's discuss…
I've also asked **Attorney Client and Deliberative Process / Ex. 5** Let's compare notes…

Never a dull moment.
-e

From: Breneman, Sara
Sent: Tuesday, October 02, 2018 2:29 PM
To: Nam, Ed <nam.ed@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Request for Inspection

What message? **Deliberative Process / Ex. 5**

From: Nam, Ed
Sent: Tuesday, October 2, 2018 2:28 PM
To: Breneman, Sara <breneman.sara@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Request for Inspection

Hold on.. Deliberative Process / Ex. 5

From: Breneman, Sara
Sent: Tuesday, October 02, 2018 2:27 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Request for Inspection

Deliberative Process / Ex. 5

From: Cain, Alexis
Sent: Tuesday, October 2, 2018 1:55 PM
To: Nam, Ed <nam.ed@epa.gov>; Breneman, Sara <breneman.sara@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: FW: Request for Inspection

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Deborah Stone1 (Environment and Sustainability) [mailto:Deborah.Stone@cookcountyil.gov]
Sent: Tuesday, October 02, 2018 12:04 PM
To: Kevin Schnoes1 (Environment and Sustainability) <Kevin.Schnoes@cookcountyil.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Rountree, Jillian <Rountree.Jillian@epa.gov>
Subject: Request for Inspection

Alexis, Jill and Margaret,
Thank you so much for all your assistance on today's call.
We would like to extend a request to the USEPA Air Inspectional division to conduct a joint inspection of the El`e facility with us.
Please let us know who the appropriate contact(s) would be.
Again, your help is much appreciated.
Deborah Stone
Director
Cook County Department of Environment and Sustainability
312-603-8204

Message

Sent: 9/4/2018 5:55:56 PM
To: Singer, Joshua (Singer.Joshua@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]
Subject: FW: Vantage Specialties question

From: King, Suzanne
Sent: Tuesday, August 28, 2018 5:33 PM
To: Sprague, Jeff <Jeff.Sprague@Illinois.gov>
Cc: Trine, Rae <trine.rae@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: FW: Vantage Specialties question

Hi Jeff,
I just sent this to Buzz and see that he is out on vacation for quite a while. Would you or anyone else there be able to answer this ethylene oxide inventory question for us?
Thanks very much!
Suzanne

From: King, Suzanne
Sent: Tuesday, August 28, 2018 5:29 PM
To: 'Asselmeier, Buzz' <Buzz.Asselmeier@Illinois.gov>
Cc: Trine, Rae <trine.rae@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Vantage Specialties question

Hi Buzz,

Any idea why Vantage Specialties, 3938 Porett Dr., Gurnee, IL, (097035AAQ) has 0 ethylene oxide emissions in 2014 from IEPA, but in 2011 IEPA reported 14,400 lbs, and 548 lbs in 2008? TRI has consistently large numbers.
Kind of an urgent request as this is currently a big news item for Sterigenics and an upcoming one for Vantage and Medline.
Very much appreciated, thank you!

I may be out of the office on Wednesday, so I am copying two others on this.

Suzanne

Year	TRI (lbs)	NEI (lbs) (via IEPA)
2016	11,541	
2015	11,541	
2014	6,412	0
2013	8,422	
2012	13,444	
2011	14,627	14,400
2010	9,765	
2009	1,196	
2008	1,062	548

	TRI via published (for fugitive) or source-specific (for stack) emission factor

----
Suzanne King, Ph.D.
U.S EPA Region 5
Air & Radiation Division
Air Toxics & Assessment Branch
312-886-6054 (phone)
312-692-2555 (fax)
king.suzanne@epa.gov

Message

Sent: 9/6/2018 10:19:10 PM
To: Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]; Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]; Rowan, Anne [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=02cbcc49ddb94091b9f4e358eb001352-ARowan]
CC: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Subject: RE: Sterigenics Draft Statement

From: Singer, Joshua
Sent: Thursday, September 06, 2018 4:56 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>
Subject: Sterigenics Draft Statement

Here's a draft desk statement. It is written as though we would be sending it to people tomorrow (Friday). We would need to change the tenses in certain sentences if we send it out later. Please edit freely or let us know if this looks OK. Please reply all – I will be out tomorrow and know others will be as well. Thank you.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Josh Singer
U.S. EPA, Region 5
phone: 312-353-5069
singer.joshua@epa.gov

Appointment

From: Johnson, Mark [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FA0BB816084B41598201F9335C5155FB-MOJOHNSO]
Sent: 9/6/2018 2:12:57 PM
To: Johnson, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fa0bb816084b41598201f9335c5155fb-Mojohnso]; Adam A Cremieux [coachadam@westswimclub.com]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Colledge, Michelle [Colledge.Michelle@epa.gov]; Aditi Vyas [avyas07@gmail.com]
Subject: Follow-up discussion about Ethylene Oxide issues in Willowbrook Personal Phone / Ex. 6

Start: 9/6/2018 8:00:00 PM
End: 9/6/2018 8:30:00 PM
Show Time As: Tentative

Since we ran out of time to complete our discussions with the West Swim Club in Willowbrook about the concerns related to ethylene oxide, we have scheduled a follow-up discussion for this afternoon at **3 PM**. We will use the same call-in number Personal Phone / Ex. 6 Forward to others who should be involved in the conversation.

Appointment

From: Stepp, Cathy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=befdafc0fa1a425eae232f60ad9bda1d-Stepp, Cath]
Sent: 9/4/2018 2:02:23 PM
To: Stepp, Cathy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=befdafc0fa1a425eae232f60ad9bda1d-Stepp, Cath]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Payne, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=61b3204a683041079512b122c580a569-Payne, Jame]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Thiede, Kurt [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3cc09fac5acc4ce1ba689fb2ce70d459-Thiede, Kur]; Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]; Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]

Subject: FW: Sterigenics Monitoring Briefing
Location: RA Large Conf. Room

Start: 9/5/2018 7:00:00 PM
End: 9/5/2018 7:30:00 PM
Show Time As: Busy

-----Original Appointment-----
From: Stepp, Cathy
Sent: Friday, August 31, 2018 3:32 PM
To: Stepp, Cathy; Payne, James; Nam, Ed; Thiede, Kurt; Cain, Alexis; Furey, Eileen
Subject: Sterigenics Monitoring Briefing
When: Wednesday, September 05, 2018 2:00 PM-2:30 PM (UTC-06:00) Central Time (US & Canada).
Where: RA Large Conf. Room

Message

Sent: 10/11/2018 8:28:24 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]
CC: Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]
Subject: RE: Sr staff mtg

Thanks, Ed. Answers below.

-----Original Message-----
From: Nam, Ed
Sent: Thursday, October 11, 2018 2:43 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: Sr staff mtg

Katie,

Thanks. Following up on these items:

Deliberative Process / Ex. 5

Thanks,
-Ed

-----Original Message-----
From: Siegel, Kathryn
Sent: Thursday, October 11, 2018 10:36 AM
To: Breneman, Sara <breneman.sara@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: Sr staff mtg

Sterigenics

Deliberative Process / Ex. 5

Whiting

Deliberative Process / Ex. 5

-----Original Message-----

From: Breneman, Sara
Sent: Thursday, October 11, 2018 9:03 AM
To: Nam, Ed <nam.ed@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: Sr staff mtg

Steel RTR

-----Original Message-----
From: Nam, Ed
Sent: Thursday, October 11, 2018 7:50 AM
To: Breneman, Sara <breneman.sara@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: Sr staff mtg

Hi all

Anything to report at this mornings sr staff mtg?

Thanks
Ed

Sent from my iPhone

Message

Sent: 10/3/2018 4:27:20 PM
To: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
CC: Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]; Jencius, Michele [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=83953187f8e7494c984480b10e1f2a5b-MJenci02]
Subject: FW: URGENT, DUE by 2:00 p.m.: review draft R5 OA
Attachments: DRAFT R5 FY 2018 Organizational Assessment 10-3-18 .docx

Importance: High

Alexis, please wordsmith Sterigenics

From: Schwebke, Peggy
Sent: Wednesday, October 03, 2018 11:14 AM
To: Breneman, Sara <breneman.sara@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: URGENT, DUE by 2:00 p.m.: review draft R5 OA
Importance: High

Please review the attached draft Region 5 organizational assessment and let me know **by 2:00 p.m. today** if anything for our division is incorrect or you have any concerns about the way they worded our content.

Thanks. Almost done!

Peggy J. Schwebke
Division Program Analyst/Planner
Air & Radiation Division, Immediate Office
U.S. EPA, Region 5
phone: (312) 353-9309

From: Jencius, Morgan
Sent: Wednesday, October 03, 2018 11:08 AM
To: Taylor, Jori <taylor.jori@epa.gov>; Schwebke, Peggy <schwebke.peggy@epa.gov>; Hogan-Chereskin, Jean <hogan-chereskin.jean@epa.gov>; Russ, Michael <russ.michael@epa.gov>; Fisseha, Ashley <Fisseha.Ashley@epa.gov>
Cc: Holst, Linda <holst.linda@epa.gov>; Baltazar, Debbie <baltazar.debbie@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Harris, Michael <harris.michael@epa.gov>; Korleski, Christopher <korleski.christopher@epa.gov>; Nettesheim, Todd <nettesheim.todd@epa.gov>; Ballotti, Doug <ballotti.douglas@epa.gov>; Short, Thomas <short.thomas@epa.gov>; Maldonado, Mayra <maldonado.mayra@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>
Subject: ACTION - red flag review: R5 FY 2018 Organizational Assessment DRAFT 10-3-18

Please identify your division/office content, review for accuracy and share any red flag comments by 3 pm this afternoon.

Thanks to everyone for their content and quick replies. Region 5 had another great year of accomplishments!

Message

Sent: 10/2/2018 10:47:36 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Subject: RE: Willowbrook Sterigenics question

Ed, have you heard anything more about this?

From: Nam, Ed
Sent: Monday, October 01, 2018 10:17 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: FW: Willowbrook Sterigenics question

FYI

From: Poy, Thomas
Sent: Friday, September 28, 2018 9:44 AM
To: Payne, James <payne.james@epa.gov>; Holst, Linda <holst.linda@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>
Cc: Stepp, Cathy <stepp.cathy@epa.gov>; Thiede, Kurt <thiede.kurt@epa.gov>
Subject: RE: Willowbrook Sterigenics question

Deliberative Process / Ex. 5

Tom

Tom Poy
Chief, Ground Water and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

From: Payne, James
Sent: Friday, September 28, 2018 9:18 AM
To: Holst, Linda <holst.linda@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>
Cc: Stepp, Cathy <stepp.cathy@epa.gov>; Thiede, Kurt <thiede.kurt@epa.gov>
Subject: Re: Willowbrook Sterigenics question

Let's first confer. There is a HQ lead on Sterigenics, and HQ is here in the region today for a meeting about this facility at 11:30am w elected officials. Adding Jeff and Ed. I believe Linda might be out today.

Sent from my iPhone

On Sep 28, 2018, at 8:36 AM, Christopher R. Hoff <Christopher.Hoff@dupagehealth.org> wrote:

Linda and Tom,
Mark Johnson at ATSDR shared your contact information with us. We have a few questions we'd like to discuss with you about groundwater testing related to the Sterigenics facility in Willowbrook, IL. If possible, we would appreciate a short phone call this morning to discuss. My phone number is 630-221-7571.

Thanks,
Chris

———————

Christopher Hoff
Assistant Director of Community Health Resources
DuPage County Health Department
Office: 630.221.7571
Cell: 847.409.1546
Email: Christopher.Hoff@dupagehealth.org

Linda Holst, Director, Water Division (holst.linda@epa.gov; 312-886-6758)
Tom Poy, Chief, Ground Water and Drinking Water Branch (poy.thomas@epa.gov; 312-886-5991)

You could also copy **Jim Payne**, Deputy Regional Administrator (payne.james@epa.gov; 312-886-7515) and myself

---

For up to date news and information on the DuPage County Health Department, please follow us on Twitter @DuPageHD and become a fan on Facebook.

DUPAGE COUNTY
HEALTH DEPARTMENT

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DuPage County Health Department

Message

Sent: 9/10/2018 1:56:08 PM
To: Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]; Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: 043110AAC - Sterigenics Protocol

Ned, they did not. They called it off at 1:45am.

Do you

From: Shappley, Ned
Sent: Monday, September 10, 2018 7:47 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: 043110AAC - Sterigenics Protocol

Thank you, did they get their test(s) completed on Saturday?

Ned

From: Siegel, Kathryn
Sent: Friday, 7 September, 2018 17:34
To: Nam, Ed <nam.ed@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Subject: FW: 043110AAC - Sterigenics Protocol

Kevin is reviewing as we speak

From: Mattison, Kevin [mailto:Kevin.Mattison@Illinois.gov]
Sent: Friday, September 07, 2018 4:22 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: FW: 043110AAC - Sterigenics Protocol

From: Wagner, Kevin <KWagner@sterigenics.com>
Sent: Friday, September 07, 2018 3:44 PM
To: Mattison, Kevin <Kevin.Mattison@Illinois.gov>
Cc: Armitage, Julie <Julie.Armitage@Illinois.gov>; Hoffman, Kathy <KHoffman@sterigenics.com>
Subject: [External] 043110AAC - Sterigenics Protocol

Kevin-
Attached is the amendments to our protocol for your review. Please note we have reviewed comments from you and OQPS and taken into consideration the recommendations needed.
Should you have any further questions please let me know.

Kevin Wagner

Director, Environmental Health & Safety
Sterigenics, A Sotera Health Company
kwagner@sterigenics.com
O: 630-928-1771
C: 708-860-9101

Sterigenics
A Sotera Health company

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Message

Sent: 8/27/2018 9:55:07 PM
To: Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]
CC: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]
Subject: RE: Sterigenics, ethylene oxide, cancer risk ... Hawthorne has so many questions.

Looks good to me. Slight comment below.

From: Singer, Joshua
Sent: Monday, August 27, 2018 4:49 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: Re: Sterigenics, ethylene oxide, cancer risk ... Hawthorne has so many questions.

Jeff,

Below is a draft response for the first question. Do you think it would be helpful to set up a backgrounder for Hawthorne with Region 5 (Katie, Ed and Eileen)?

ARD--Please let me know if this draft response needs editing (you can probably leave Jeff off the email while you do that). I indicated one question in parentheses. Thank you.

Deliberative Process / Ex. 5

From: Kelley, Jeff
Sent: Monday, August 27, 2018 4:00:06 PM
To: Singer, Joshua; regionalpress
Subject: RE: Sterigenics, ethylene oxide, cancer risk ... Hawthorne has so many questions.

I think OAQPS should take the lead on the second question. Ed has an idea how to answer the first question.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Singer, Joshua
Sent: Monday, August 27, 2018 3:30 PM
To: regionalpress <regionalpress@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>
Subject: Fw: Sterigenics, ethylene oxide, cancer risk ... Hawthorne has so many questions.

Please see the follow-up questions below from Michael Hawthorne at Chicago Tribune.

I will send these to ARD to start providing answers. Please let me know if HQ would prefer to handle. Thanks.

Josh

From: Hawthorne, Michael <mhawthorne@chicagotribune.com>
Sent: Monday, August 27, 2018 3:25 PM
To: Singer, Joshua
Subject: Re: Sterigenics, ethylene oxide, cancer risk ... Hawthorne has so many questions.

Questions from earlier that are unanswered in the agency's statement:

> ATSDR's letter to Ed Nam mentions Region 5 ARD also is looking into EtO emissions from the Ele Corporation in McCook. Is health consultation similar to the Sterigenics report in the works? If not, why?
>
> Related questions: The recently released National Air Toxics Assessment also includes four Lake County, IL, census tracts and one in Kent County, MI, with modeled cancer risks exceeding the EPA guideline of 100 in a million cases. Ethylene oxide is the main driver of cancer risk in all of these census tracts. In Lake County, emissions are coming from Vantage Specialties, 3938 Porett Drive, Gurnee, which in 2016 released 11,541 pounds of EtO into the air, according to TRI. That's significantly more than what Sterigenics released the same year. What is EPA doing to address Vantage Specialties emissions? Is ATSDR involved there, too?
>
> On Aug 27, 2018, at 2:43 PM, Singer, Joshua <Singer.Joshua@epa.gov> wrote:
>
> Michael,

Please contact Mark Johnson at ATSDR regarding the letter. His email is mdjohnson@cdc.gov. Thank you.

Josh

From: Hawthorne, Michael <mhawthorne@chicagotribune.com>
Sent: Monday, August 27, 2018 1:54:10 PM
To: Singer, Joshua
Subject: Re: Sterigenics, ethylene oxide, cancer risk ... Hawthorne has so many questions.

Thanks, Josh. Am I reading the ATSDR report correctly? Is the estimated cancer risk actually 6,400 per million, or more than 6 cases of cancer for every 1,000 people?!? That's staggering.

On Aug 27, 2018, at 1:47 PM, Singer, Joshua <Singer.Joshua@epa.gov> wrote:

Michael,

Please see the information below and attribute to U.S. EPA. If you'd like more information, please let me know and I can set up a background interview with people in EPA's Office of Air Quality Planning and Standards. Thank you.

Josh

"EPA is working closely with Willowbrook to address any community concerns," said Cathy Stepp Region 5 Regional Administrator. "I appreciate Mayor Trilla's leadership on this issue, and we are committed to keeping communities in our region informed."

DESK STATEMENT

Across the country, U.S. EPA is taking steps to address emissions of ethylene oxide from some types of industrial facilities. EPA is examining these emissions based on the results of the 2014 National Air Toxics Assessment (NATA). NATA has identified the chemical as a potential concern in several areas across the country. NATA is the agency's nationwide air toxics screening tool, designed to help EPA and state, local and tribal air agencies identify areas, pollutants or types of sources for further examination. NATA does not estimate any person's individual risk.

Based on an examination of available data, U.S. EPA does not expect ethylene oxide levels in the air to be high enough to cause immediate harm to health. However, the 2014 NATA shows a number of areas could have elevated cancer risks from long-term (many years) ethylene oxide exposure. These potential risks are largely driven by an EPA risk value that was updated in late 2016.

Nationally, U.S. EPA is taking a two-pronged approach to address ethylene oxide emissions:

- First, the agency will review its air toxics regulations for facilities that emit ethylene oxide. U.S. EPA has begun reviewing its air toxics emissions standards

for miscellaneous organic chemical manufacturing facilities, some of which emit ethylene oxide. The agency also plans to take a closer look at its rules for other types of facilities, beginning with its emissions standards for commercial sterilizers.

- Second, U.S. EPA is gathering additional information on industrial emissions of ethylene oxide, which may include data from testing at some types of facilities. This information will help U.S. EPA as it looks for opportunities to reduce EtO emissions as part of its regulations review. It also will help the agency determine whether more immediate emission reduction steps are necessary in any particular locations.

EPA will post updates on its work to address ethylene oxide emissions at https://www.epa.gov/ethylene-oxide

Background

The 2014 NATA estimates that EtO significantly contributes to potential elevated cancer risks in some census tracts across the U.S. (less than 1 percent of the total number of tracts).

The 2014 NATA uses emissions data from 2014 (the most recent data available), along with the latest scientific information on air toxics and health, to estimate air toxics exposures and potential public health risk in census tracts across the United States.

Ethylene oxide is used to sterilize equipment and plastic devices that can't be sterilized with steam, such as medical devices. It also is used to make other chemicals. One of those is ethylene glycol, which is used to make everyday products such as antifreeze, PVC plumbing pipe, vinyl flooring and plastics products, including recyclable plastic containers and bottles.

Sterigenics Willowbrook facility

U.S. EPA is working with Illinois EPA, the Agency for Toxic Substances and Disease Registry, and Sterigenics to address emissions of ethylene oxide from the company's facility in Willowbrook. In July, the company installed additional pollution controls to capture ethylene oxide emissions. U.S. EPA and Illinois EPA will monitor the effectiveness of the new equipment. U.S. EPA is committed to keeping the Willowbrook community informed.

For more information on NATA, visit: https://www.epa.gov/national-air-toxics-assessment

# # #

From: Singer, Joshua
Sent: Monday, August 27, 2018 11:01:22 AM
To: Hawthorne, Michael
Cc: Rowan, Anne; Bassler, Rachel

Subject: Re: Sterigenics, ethylene oxide, cancer risk ... Hawthorne has so many questions.

Michael,
Thanks for the email. We are working on proving you with the information you requested.
Josh

Sent from my iPhone

On Aug 27, 2018, at 7:30 AM, Hawthorne, Michael <mhawthorne@chicagotribune.com> wrote:

> Good morning folks,
>
> I've been reading through the ATSDR report on Sterigenics in Willowbrook and have a few questions for USEPA.
>
> What is the agency doing to ensure that ethylene oxide emissions from the facility are controlled? What regulations can the agency look to on this? My understanding is the HAP regs for EtO haven't changed since the 1990s, even though the science has changed. Correct?
>
> ATSDR's letter to Ed Nam mentions Region 5 ARD also is looking into EtO emissions from the Ele Corporation in McCook. Is health consultation similar to the Sterigenics report in the works? If not, why?
>
> Related questions: The recently released National Air Toxics Assessment also includes four Lake County, IL, census tracts and one in Kent County, MI, with modeled cancer risks exceeding the EPA guideline of 100 in a million cases. Ethylene oxide is the main driver of cancer risk in all of these census tracts. In Lake County, emissions are coming from Vantage Specialties, 3938 Porett Drive, Gurnee, which in 2016 released 11,541 pounds of EtO into the air, according to TRI. That's significantly more than what Sterigenics released the same year. What is EPA doing to address Vantage Specialties emissions? Is ATSDR involved there, too?
>
> Please touch based with me asap today. Since the Sterigenics report is now a public record, I need answers quickly and my story will likely be posted before 2 p.m.
>
> Thanks.
>
> Michael
>
> Michael Hawthorne
> Reporter
> Chicago Tribune
> Desk: (312) 222-3315
> Mobile: (312) 731-3639
> mhawthorne@chicagotribune.com
> @scribeguy

Hawthorne, Michael
mhawthorne@chicagotribune.com

Hawthorne, Michael
mhawthorne@chicagotribune.com

Appointment

From: Siegel, Kathryn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F57A52EFEAD9497CB582B11B8C85F09F-KSIEGE02]
Sent: 6/13/2018 2:08:22 PM
To: Colledge, Michelle [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=20fa592058b44fa4b2fc724a8db2241b-MColledg]; Johnson, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fa0bb816084b41598201f9335c5155fb-Mojohnso]

Subject: FW: EtO Sterigenics
Location: RA's Large Conf. Rm.

Start: 6/20/2018 3:00:00 PM
End: 6/20/2018 3:45:00 PM
Show Time As: Tentative

-----Original Appointment-----
From: Thiede, Kurt
Sent: Tuesday, June 12, 2018 1:15 PM
To: Thiede, Kurt; Payne, James; Nam, Ed; Furey, Eileen; Cain, Alexis; Siegel, Kathryn; Bollweg, George; Compher, Michael; Olson, Erik; Shaffer, Loretta; Nwia, Jacqueline; Sieffert, Margaret
Subject: EtO Sterigenics
When: Wednesday, June 20, 2018 10:00 AM-10:45 AM (UTC-06:00) Central Time (US & Canada).
Where: RA's Large Conf. Rm.

Message

Sent: 9/28/2018 2:02:58 PM
To: Colledge, Michelle [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=20fa592058b44fa4b2fc724a8db2241b-MColledg]; Johnson, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fa0bb816084b41598201f9335c5155fb-Mojohnso]
Subject: RE: IEPA website

The original five have about a week left.

From: Colledge, Michelle
Sent: Friday, September 28, 2018 8:59 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>
Subject: Re: IEPA website

Thanks, Katie. We saw the article that says EPA HQ has committed to community sampling. Are those SUMMA cans still good?? ☺

Michelle A. Colledge MPH, PhD
CAPT, U.S. Public Health Service
Agency for Toxic Substances and Disease Registry/NCEH/CDC, Region 5
77 W. Jackson Blvd., Room 413
Mailstop ATSD-4J
Chicago, Illinois 60604
Tel: 312-886-1462
Fax: 312-886-6066
please consider the environment before printing this email

From: Siegel, Kathryn
Sent: Friday, September 28, 2018 8:57 AM
To: Johnson, Mark; Colledge, Michelle
Subject: IEPA website

https://www2.illinois.gov/epa/topics/community-relations/sites/sterigenics/Pages/default.aspx

Sterigenics - Sterigenics

www2.illinois.gov

The Illinois EPA will update this page with additional information as it become available and with answers to questions posed from the public.. Navigation

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

Message

From: Urszula Tanouye Personal Privacy / Ex. 6
Sent: 9/11/2018 3:07:05 AM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: Re: Willowbrook Community Participation

Dear Katie,

Thank you for updating me. I'm looking forward to hearing from you again.

Thanks,
Urszula

On Mon, Sep 10, 2018 at 3:37 PM Siegel, Kathryn <siegel.kathryn@epa.gov> wrote:

Hi Urszula,

Thank you for your email. I have forwarded it to my contacts at the Agency for Toxics Substances and Disease Registry. We will review your questions and feedback and get back to you with a coordinated response.

Sincerely,

Katie Siegel, Chief

Air Toxics and Assessment Branch

Air and Radiation Division

U.S. EPA Region 5

siegel.kathryn@epa.gov

(312) 886-3006

From: Urszula Tanouye [mailto Personal Privacy / Ex. 6
Sent: Thursday, September 06, 2018 3:41 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Willowbrook Community Participation

Hi Katie Siegel,

I was referred to you by the person who answered the phone in the Region 5 office as the contact for comments regarding the Sterigenics facility in Willowbrook. If there is a better contact, could you please let me know.

As an introduction, I'm a concerned resident who has lived most of my life within 2 miles of the Sterigenics facility. I also happen to be a research microbiologist so I've been following the currently unfolding story through both lenses. I imagine your office must be very busy fielding questions and comments, so I'll try to stay brief. Please feel free to call/email me.

I noticed in the report from the ATSDR that it appears an assumption was made about the exposure of workers in businesses neighboring the Sterigenics facilities that is consistent with an assumption made about workers covered under OSHA. This section is toward the end of the report where cancer risks are discussed. In calculating risk, an 8.5 hour work day was assumed. For many of these workers in neighboring buildings, especially those employed by the Village of Willowbrook, their residences may be located close enough to the facilities that their off-work exposure is not negligible. They live, work, and shop in elevated exposure areas. Additionally, some nearby residents work from home thereby increasing their exposure hours. Would it be prudent from a safety perspective to evaluate exposure for a representative sample of these groups in the same or in a similar way to OSHA exposure? It seems to me that they potentially have similar levels of exposure to an occupational worker but have not thus far been treated with the courtesy of evaluation and disclosure of this exposure as an employee would under OSHA.

On a similar note, residents, schools, and neighboring city councils have been talking about evaluating options for independent testing of their exposure levels to EtO. Is an effort being made to engage and coordinate data collection efforts to increase the statistical power of these collective data? Many residents are offering to open their homes to measure indoor air quality as well as outdoor. Has the EPA considered using the kind of wearable devices for exposure evaluation that occupational workers would use? Perhaps this would allow a greater number of samples under a wider variety of conditions to be included under existing budgetary constraints.

We are particularly interested in obtaining samples under current conditions of exposure given that the half life of EtO in ambient air has been estimated as anywhere from 69-211 days in various documents put forth or referenced by federal agencies including the EPA and NIH. Once the facilities cease their operations, exposure levels measured may not reflect the concentrations that have been continually building here for 34 years. We would prefer not to re-start operations simply for the purposes of testing, especially since we have a window of opportunity at this moment in time to provide a more accurate picture of recent and to some degree historical exposures.

And finally, many of my fellow community members and I are requesting that locations beyond the 1 mile radius be included in further study to find how far exposure goes until the limit of detection is reached to better

gauge the geographic extent of exposure. We have suggested 5 miles as a starting point for discussions and especially to include nearby schools.

As a scientist and engaged community member, I am interested in adding to the body of knowledge available for policy making discussions to increase the safety of the general population, not just in our community, but in other communities potentially exposed to significant airborne quantities of EtO. Many of my community members share this sentiment. Please let me know what information on these topics I can share with my fellow community members who are looking for answers to their questions about the EPA response and how they can help.

Regards,

Urszula Tanouye

Personal Privacy / Ex. 6

Personal Privacy / Ex. 6

--

Urszula Tanouye

Personal Privacy / Ex. 6

--

Urszula Tanouye

Personal Privacy / Ex. 6

Appointment

From: Johnson, Mark [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FA0BB816084B41598201F9335C5155FB-MOJOHNSO]
Sent: 9/6/2018 2:12:54 PM
To: Adam A Cremieux [coachadam@westswimclub.com]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Colledge, Michelle [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=20fa592058b44fa4b2fc724a8db2241b-MColledg]; Aditi Vyas [avyas07@gmail.com]

Subject: Follow-up discussion about Ethylene Oxide issues in Willowbrook Personal Phone / Ex. 6

Start: 9/6/2018 8:00:00 PM
End: 9/6/2018 8:30:00 PM
Show Time As: Tentative

Since we ran out of time to complete our discussions with the West Swim Club in Willowbrook about the concerns related to ethylene oxide, we have scheduled a follow-up discussion for this afternoon at **3 PM**. We will use the same call-in number; Personal Phone / Ex. 6 Forward to others who should be involved in the conversation.

Message

From: Lewis, Evelyn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FB53946761BE49669C95BB1A46057596-LEWIS, EVEL]
on behalf of R5Hotline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D22AEE2080934019AD33F544D4279264-R5HOTLINE]
Sent: 10/11/2018 7:41:33 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Sterigenics in Willowbrook

Good afternoon Katie,

Would you respond to this request?

Thanks
Evelyn Lewis
Multimedia Communications

From: Citizen Name / Ex. 6 [mailto: Personal Email / Ex. 6 @hotmail.com]
Sent: Thursday, October 11, 2018 1:28 PM
To: R5Hotline <R5Hotline@epa.gov>
Subject: Sterigenics in Willowbrook

Hello there,
My name is Citizen Name / Ex. 6 I am a resident of Willowbrook.
I was reading info on Sterigenics on your web site and I want to point out while it's necessary and extremely important to conduct a risk assessment (more comprehensive than either NATA or the ATSDR analysis) in Willowbrook area on c u r r e n t emissions, it is as important to do exactly the same comprehensive risk assessment before the controls were installed, based on May , 2018 emissions.

I believe our Mayor Trilla made a similar request.

I look forward for your response. Thank you!

Sincerely,
Citizen Name / Ex. 6
Personal Email / Ex. 6 @hotmail.com
Sent from Citizen Name / Ex. 6 Phone

Message

From: Lewis, Evelyn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FB53946761BE49669C95BB1A46057596-LEWIS, EVEL]
on behalf of R5Hotline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D22AEE2080934019AD33F544D4279264-R5HOTLINE]
Sent: 10/9/2018 8:19:25 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Feedback from EPA in Illinois

Good afternoon Katie,

Would you respond to this inquiry?

Thanks
Evelyn Lewis
Multimedia Communications

-----Original Message-----
From: drupal_admin@epa.gov [mailto:drupal_admin@epa.gov] On Behalf Of Cheryl via EPA
Sent: Tuesday, October 9, 2018 2:27 PM
To: R5Hotline <R5Hotline@epa.gov>
Subject: Feedback from EPA in Illinois

Submitted on 10/09/2018 3:27PM Eastern Time

Comments: Have they checked the Sterigenics facility in Oakbrook, IL?
Name: Cheryl
Email: Personal Email / Ex. 6 yahoo.com
Phone:

Appointment

From: Armitage, Julie [Julie.Armitage@Illinois.gov]
Sent: 9/4/2018 4:12:19 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]

Subject: Accepted: [External] Sterigenics stack test
Location: Personal Phone / Ex. 6

Start: 9/4/2018 7:30:00 PM
End: 9/4/2018 8:00:00 PM
Show Time As: Busy

Recurrence: (none)

State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all attachments. Receipt by an unintended recipient does not waive attorney-client privilege, attorney work product privilege, or any other exemption from disclosure.

Message

From: Lewis, Evelyn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FB53946761BE49669C95BB1A46057596-LEWIS, EVEL]
on behalf of R5Hotline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D22AEE2080934019AD33F544D4279264-R5HOTLINE]
Sent: 10/9/2018 1:58:57 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Ambient Air Testing Sterigenics Willowbrook

Good morning Katie,

Would you or someone in your area able to respond to this?

Thanks
Evelyn Lewis
Multimedia Communications

-----Original Message-----
From: Jennifer Diancin [mailto: Personal Email / Ex. 6 @gmail.com]
Sent: Saturday, October 6, 2018 10:00 PM
To: R5Hotline <R5Hotline@epa.gov>
Subject: Ambient Air Testing Sterigenics Willowbrook

Can you provide some detail on the "limitations" of the testing you described below? Is there currently no equipment or techniques out there that can assess long-term public health risk? Clarification would be appreciated, thanks. Also wondering how soon we can expect these tests to be done?

"U.S. EPA has received a number of requests to conduct additional outdoor air quality air monitoring ethylene oxide in Willowbrook. While there are limitations to the ability of currently available monitoring instruments and techniques to measure ethylene oxide at all levels that may present a long-term public health risk, U.S. EPA intends to conduct additional outdoor air quality monitoring."

Jennifer

Message

From: McCree, Barbara [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D9C75B26978B45B29E8354F8C82E8D17-BMCCREE]
on behalf of R5Hotline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D22AEE2080934019AD33F544D4279264-R5HOTLINE]
Sent: 9/5/2018 8:00:27 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Comment from Contact EPA Region 5 page

Katie

We were directed to send these to you.

Barbara McCree
Multimedia Communications
6-7935

-----Original Message-----
From: drupal_admin@epa.gov [mailto:drupal_admin@epa.gov] On Behalf Of Scott Fisher via EPA
Sent: Wednesday, September 5, 2018 11:51 AM
To: R5Hotline <R5Hotline@epa.gov>
Subject: Comment from Contact EPA Region 5 page

Submitted on 09/05/2018 12:51PM Eastern Time

Comments: I am looking for more information regarding Sterigenics International Inc. and their release of Ethylene Oxide emissions. I run an aquatics facility 1000 feet from their facility and am worried about the exposure of my customers and staff. To continue to willingly bring customers and staff to my facility I need to be assured that I am not causing them harm.
Name: Scott Fisher
Organization (optional): WEST Superior Training
State: Illinois
Email: Personal Email / Ex. 6 @gmail.com
Phone: Personal Phone / Ex. 6

Message

From: McCree, Barbara [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D9C75B26978B45B29E8354F8C82E8D17-BMCCREE]
on behalf of R5Hotline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D22AEE2080934019AD33F544D4279264-R5HOTLINE]
Sent: 9/5/2018 7:31:50 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Comment from Contact EPA Region 5 page

-----Original Message-----
From: drupal_admin@epa.gov [mailto:drupal_admin@epa.gov] On Behalf Of Scott Fisher via EPA
Sent: Wednesday, September 5, 2018 11:51 AM
To: R5Hotline <R5Hotline@epa.gov>
Subject: Comment from Contact EPA Region 5 page

Submitted on 09/05/2018 12:51PM Eastern Time

Comments: I am looking for more information regarding Sterigenics International Inc. and their release of Ethylene Oxide emissions. I run an aquatics facility 1000 feet from their facility and am worried about the exposure of my customers and staff. To continue to willingly bring customers and staff to my facility I need to be assured that I am not causing them harm.
Name: Scott Fisher
Organization (optional): WEST Superior Training
State: Illinois
Email: Personal Email / Ex. 6 @gmail.com
Phone: Personal Phone / Ex. 6

Message

From: Lewis, Evelyn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FB53946761BE49669C95BB1A46057596-LEWIS, EVEL]
on behalf of R5Hotline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D22AEE2080934019AD33F544D4279264-R5HOTLINE]
Sent: 10/9/2018 1:14:01 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Sterigenics - Willowbrook, IL

Importance: High

Good morning Katie,

Would you respond to this?

Thanks
Evelyn Lewis
Multimedia Communications

From: Sylvia McIvor [mailto: Personal Email / Ex. 6
Sent: Monday, October 8, 2018 11:55 AM
To: R5Hotline <R5Hotline@epa.gov>
Cc: Bryon Vana <bvana@darienil.gov>; kweaver@darienil.gov
Subject: Sterigenics - Willowbrook, IL
Importance: High

To the IL EPA,

I am an Alderman in the City of Darien. Our City limit is literally across the street from the Sterigenics facility in Willowbrook, IL. According to your website:

Stack tests to measure current emissions have been conducted. Early indications from the stack testing suggest that emissions have been significantly reduced since Sterigenics began operating with the additional pollution controls. U.S. EPA and Illinois EPA will work with the company to evaluate the possible need for additional action.

To provide updated, comprehensive information to the public, U.S.EPA will analyze stack testing results, conduct additional risk and exposure modeling, and conduct outdoor air quality monitoring for ethylene oxide. The Agency will share results on this website.

When will the stack testing results be available and made public? When will the U.S. EPA analyze the stack testing results, conduct additional risk and exposure modeling and conduct outdoor air quality monitoring for ethylene oxide? In addition, where are the specific testing locations? What is the time frame to evaluate the need for possible additional action and/or shutting down this facility?

As you are well aware, the additional pollution controls were installed recently, decades after these emissions were first and continually released into the air surrounding this facility. What are the ramifications for the many years of emissions without the additional pollution controls?

I have copied our Mayor, Kathy Weaver as well as our City Manager, Bryon Vana, on this email.

Thank you,

Sylvia McIvor
C Personal Phone / Ex. 6

Message

From: Dee, Rhiannon [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0A0754B3EF5D410DAE9C7539A8AE1B45-RDEE]
Sent: 6/27/2018 8:36:28 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Write-up Status?

Thank you!

From: Siegel, Kathryn
Sent: Wednesday, June 27, 2018 3:34 PM
To: Dee, Rhiannon <dee.Rhiannon@epa.gov>
Subject: RE: Write-up Status?

Just sent something. Ed was getting feedback from Jeff and Jim before I sent. Let me know if there are any questions. Thanks!

From: Dee, Rhiannon
Sent: Wednesday, June 27, 2018 3:25 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Write-up Status?

Hi there,

Checking in on the Sterigenics write-up. Let me know if I can be of help.

Thanks.

Rhiannon Dee
Writer/Editor
U.S. EPA Region 5
312-886-4882
dee.rhiannon@epa.gov

Message

From: Lewis, Evelyn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FB53946761BE49669C95BB1A46057596-LEWIS, EVEL]
on behalf of R5Hotline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D22AEE2080934019AD33F544D4279264-R5HOTLINE]
Sent: 10/5/2018 3:51:28 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Sterigenics Stack Report Details

Good Morning Katie

Are you able to respond to this?

Thanks
Evelyn Lewis
Multimedia Communications

-----Original Message-----
From: Jennifer Diancin [mailto: Personal Email / Ex. 6 @gmail.com]
Sent: Friday, October 5, 2018 9:46 AM
To: R5Hotline <R5Hotline@epa.gov>
Subject: Sterigenics Stack Report Details

It is my understanding that a report will be released soon of the stack report findings. I'm eager to know how soon we can expect the report or what the status is on it to then proceed with the monitoring. It is on the forefront of my mind to know the details of the community's current exposure and boundaries of the compromised zone, and how whatever amount of EtO still being emitted from Sterigenics reacts in our various environmental conditions. E.g. how the chemical breaks down in air, sunlight, rain, and wind, thus effecting rate of human exposure as well as soil and drinking water absorption— all that effects our daily lives and general well-being. A timeline of the plan of action moving forward would be appreciated and end much speculation and fear in the community. Thank you for your time and attention to this matter.

Jennifer

Message

From: Colledge, Michelle [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=20FA592058B44FA4B2FC724A8DB2241B-MCOLLEDG]
Sent: 8/21/2018 3:48:41 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Johnson, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fa0bb816084b41598201f9335c5155fb-Mojohnso]
Subject: RE: message to Willowbrook employees -- DRAFT

Katie-

I think the letter looks fine. We can reiterate how conservative our assumptions were on the line.

Michelle

Michelle A. Colledge MPH, PhD
CAPT, U.S. Public Health Service
Agency for Toxic Substances and Disease Registry/NCEH/CDC, Region 5
77 W. Jackson Blvd., Room 413
Mailstop ATSD-4J
Chicago, Illinois 60604
Tel: 312-886-1462
Fax: 312-886-6066

please consider the environment before printing this email

From: Siegel, Kathryn
Sent: Tuesday, August 21, 2018 10:46 AM
To: Colledge, Michelle <Colledge.Michelle@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>
Subject: FW: message to Willowbrook employees -- DRAFT

Mark and Michelle,

For the 2pm meeting, please come prepared to give a brief overview of your findings and provide any feedback on the draft message to Willowbrook employees.

Let me know if you have any questions. Thanks!

From: Siegel, Kathryn
Sent: Tuesday, August 14, 2018 4:15 PM
To: Johnson, Mark <johnson.mark@epa.gov>; Colledge, Michelle <Colledge.Michelle@epa.gov>
Cc: Rountree, Jillian <Rountree.Jillian@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>
Subject: message to Willowbrook employees -- DRAFT

Confidential Internal Deliberative

Mark and Michelle,

In preparation for tomorrow's meeting, I am attaching a draft message for Willowbrook employees.

For additional background, I am also attaching:

- 6/22 email – Willowbrook Air Monitoring Data
- 6/27 email – Willowbrook Indoor Air Sampling
- 8/2 email – Sterigenics Badge Sample Data

Please email any feedback or let us know if would like to meet before 2pm tomorrow to discuss. Thank you!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

Message

From: Rountree, Jillian [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7D304E5E55A54908B24B17E57ECDBF3C-JROUNTRE]
Sent: 8/28/2018 9:24:32 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: 043110AAC - Sterigenics stack test

Thank you!

Jillian Rountree
Air and Radiation Division Detail Attorney
U.S. EPA Region 5
312-353-3849
Some of my email messages and attachments contain information that is privileged, confidential, or prohibited from disclosure under applicable law. If you believe you may have received this message in error, please inform the sender immediately. Further, do not read, print, or distribute any messages or attachments received in error. Immediately delete and otherwise destroy any such messages and attachments. Thank you.

From: Siegel, Kathryn
Sent: Tuesday, August 28, 2018 4:14 PM
To: Rountree, Jillian <Rountree.Jillian@epa.gov>
Subject: FW: 043110AAC - Sterigenics stack test

From: Mattison, Kevin [mailto:Kevin.Mattison@illinois.gov]
Sent: Tuesday, August 28, 2018 11:47 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: 043110AAC - Sterigenics stack test

Attach is the plan and yes I do plan on attending the conf. call at 1:30pm CST.

From: Siegel, Kathryn [mailto:siegel.kathryn@epa.gov]
Sent: Tuesday, August 28, 2018 11:44 AM
To: Mattison, Kevin <Kevin.Mattison@Illinois.gov>
Subject: [External] RE: 043110AAC - Sterigenics stack test

Thanks, Kevin. Could you send a copy of the plan when you get a chance? Do you still plan to participate in the call with OAQPS on 9/4?

I'm sure you're aware, but just in case, there was an article about the facility in the Chicago Tribune this morning and there is a public meeting tomorrow night.

Call me if you'd like to discuss anything. Thank you!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

From: Mattison, Kevin [mailto:Kevin.Mattison@illinois.gov]
Sent: Tuesday, August 28, 2018 11:39 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: 043110AAC - Sterigenics stack test

Katie,

I just rec'd the test plan this morning.

Testing is scheduled for September 20-21, 2018.

Kevin Mattison
Office ☏ 847-294-4019

From: Siegel, Kathryn [mailto:siegel.kathryn@epa.gov]
Sent: Monday, August 27, 2018 1:31 PM
To: Mattison, Kevin <Kevin.Mattison@Illinois.gov>
Subject: [External] 043110AAC - Sterigenics stack test

Hi Kevin,

Following up on my voicemail, have you received a stack testing plan from Sterigenics? Has a date been set? Please email or call when you get a chance. Thanks!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

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Message

From: McCree, Barbara [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D9C75B26978B45B29E8354F8C82E8D17-BMCCREE]
on behalf of R5Hotline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D22AEE2080934019AD33F544D4279264-R5HOTLINE]
Sent: 10/3/2018 3:10:33 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Feedback from EPA in Illinois

Kathy

Would you please respond to this question?

Thanks

Barbara McCree
Multimedia Communications

-----Original Message-----
From: drupal_admin@epa.gov [mailto:drupal_admin@epa.gov] On Behalf Of Cathy Bogigian via EPA
Sent: Wednesday, October 3, 2018 9:57 AM
To: R5Hotline <R5Hotline@epa.gov>
Subject: Feedback from EPA in Illinois

Submitted on 10/03/2018 10:57AM Eastern Time

Comments: Some local residents that live near Sterigenic in Willowbrook have reported a dramatic change in the number of trucks entering the Sterigenics facility on certain occasions and are questioning if this is being done during air monitor testing to influence test results of Ethylene Oxide? And is the EPA also looking into the EO emissions from Ele in McCook Illinois?
Name: Cathy Bogigian
Email: Personal Email / Ex. 6
Phone: Personal Phone / Ex. 6

Message

From: Nam, Ed [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A2653F1DDD59470688BA557DD84D9690-NAM, ED]
Sent: 10/3/2018 2:31:59 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: EPA Sterigenics webpage

From: Mayor Mickey [mailto:Mickey@mayormickey.com]
Sent: Tuesday, October 02, 2018 1:52 PM
To: Nam, Ed <nam.ed@epa.gov>
Subject: RE: EPA Sterigenics webpage

Hi Ed,

Thank you so much for letting me know. Please let me know if there is anything more you need from us.

All the best, Mickey

Mickey Straub
Mayor
Village of Burr Ridge
A Very Special Place...to Live, Work, Dine & Shop

From: Nam, Ed <nam.ed@epa.gov>
Sent: Tuesday, October 2, 2018 1:33 PM
To: Mayor Mickey <Mickey@mayormickey.com>
Cc: Koerber, Mike <Koerber.Mike@epa.gov>
Subject: RE: EPA Sterigenics webpage

Hi Mayor Mickey,

It was really great to meet you last week. Thanks for reaching out. I'm sure you'll get a response from Cathy soon, but I also wanted to let you know that we are working on that language now and hope to release it soon. I'm cc'ing Mike Koerber as well as his team is managing the risk communication.

Thanks,
-Ed

-Edward Nam
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

From: Mayor Mickey [mailto:Mickey@mayormickey.com]
Sent: Tuesday, October 02, 2018 12:48 PM
To: Nam, Ed <nam.ed@epa.gov>
Subject: FW: EPA Sterigenics webpage

Hi Ed,

It was great to meet you last week and I look forward to next time! I just wanted to keep you in the loop…please see below. Unless I am missing something, this update is missing critical information and I think will do nothing but fuel fear across the community!

And for your information, law firms are now holding workshops in our town to teach people how to sue Sterigenics. Welcome to Illinois!

All the best, Mickey

Mickey Straub
Mayor | Village of Burr Ridge
7660 S. County Line Road, Burr Ridge, IL 60527
MStraub@Burr-Ridge.gov
Mickey@MayorMickey.com
Village: 630-654-8181

From: Mayor Mickey <Mickey@mayormickey.com>
Sent: Tuesday, October 2, 2018 12:13 PM
To: 'Stepp, Cathy' <stepp.cathy@epa.gov>
Cc: 'Evan Walter' <EWalter@burr-ridge.gov>; Douglas Pollock <DPOLLOCK@BURR-RIDGE.GOV>
Subject: RE: EPA Sterigenics webpage

Dear Cathy,

Thank you for the update, but it appears to me that additional information and clarification is necessary? I think this excerpt will likely just increase the health scare, unless it included more details as to what level of exposure is necessary:

> "ATSDR concluded: "if measured and modeled data represent typical ethylene oxide ambient concentrations in ambient air, an elevated cancer risk exists for residents and offsite workers in the Willowbrook community surrounding the Sterigenics facility. These elevated risks present a public health hazard to these populations."

For example, one of your high ranking EPA officials told me that the cancer risk was only greater assuming you were sitting in a lawn chair with "70 years of exposure 24 hours per day". Why wasn't something like that clearly specified?

Also, why weren't the results of the most recent Stack Test included and explained in layman's terms. (Pardon me if I missed them.)

Thank you for your efforts.

All the best, Mickey

Mickey Straub
Mayor | Village of Burr Ridge
7660 S. County Line Road, Burr Ridge, IL 60527
MStraub@Burr-Ridge.gov
Mickey@MayorMickey.com
Village: 630-654-8181

From: Stepp, Cathy <stepp.cathy@epa.gov>
Sent: Tuesday, October 2, 2018 11:24 AM
To: clarisol_duque@durbin.senate.gov; jasmine_hunt@durbin.senate.gov; Tran_Nguyen@durbin.senate.gov; david_applegate@duckworth.senate.gov; Radha_adhar@duckworth.senate.gov; Hilary.Denk@mail.house.gov; Gary.Timmins@mail.house.gov; Samantha.warren@mail.house.gov; Joe.Fawell@mail.house.gov; lee.campuzano@mail.house.gov; hannah.chargin@mail.house.gov; joel.creswell@mail.house.gov; sam.pfister@illinois.gov; brian.oszakiewski@mail.house.gov; kweaver@darienil.gov; bvana@darienil.gov; senatorcurran@gmail.com; repdurkin@hotmail.com; durkin@ilhousegop.org; ftrilla@willowbrook.il.us; Mickey@MayorMickey.com; dpollock@burr-ridge.gov; alec.messina@illinois.gov; laura.roche@illinois.gov; Julie.Armitage@illinois.gov; lissa@serafin.com; rcipriano@schiffhardin.com; mmahoney@hrs.ilga.gov; greg.hart@dupageco.org; Lise.T.Spacapan@illinois.gov; patty.schuh@illinois.gov; Dan.Cronin@dupageco.org; Cynthia_Bajjalieh@durbin.senate.gov; marina_faz-huppert@duckworth.senate.gov; bill.dart@illinois.gov
Cc: Thiede, Kurt <thiede.kurt@epa.gov>; Payne, James <payne.james@epa.gov>
Subject: EPA Sterigenics webpage

Good Morning –

I wanted to let you all know the EPA Sterigenics webpage has been expanded to include additional information to help explain the work being done in and around the Sterigenics facility in Willowbrook, IL. Thank you all for your attention to this matter, as well as your willingness to work with us to understand how best to communicate to the community.

The webpage can be found at: https://www.epa.gov/il/sterigenics-willowbrook-facility

Thank you,

Cathy Stepp
Regional Administrator

Message

From: Beckmann, Ronna Erin [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=CA0A5C6DFB9F407CBC70B71EEAB91ACE-RBECKMAN]
Sent: 6/22/2018 1:33:18 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: Re: Sterigenics FAQs -- DRAFT

Thanks!

Ronna Beckmann
Office of External Communications
U.S. Environmental Protection Agency, Region 5
312.886.0689

On Jun 21, 2018, at 5:23 PM, Siegel, Kathryn <siegel.kathryn@epa.gov> wrote:

> Ronna, while we are waiting for OAQPS feedback before we finalize the FAQs/talking points, I wanted to share this draft. Please reach out with any questions or if you want to begin strategizing for the calls tomorrow. Thanks!
>
> ---
>
> **From:** Siegel, Kathryn
> **Sent:** Thursday, June 21, 2018 4:59 PM
> **To:** Sasser, Erika <Sasser.Erika@epa.gov>
> **Cc:** Nam, Ed <nam.ed@epa.gov>
> **Subject:** Sterigenics FAQs -- DRAFT
> **Importance:** High
>
> Hi Erika,
>
> Attached please find draft FAQs for Sterigenics. Considering the urgency of this matter, feedback in tracked changes would be appreciated as soon as possible, but no later than 10am Central tomorrow.
>
> Calls to stakeholders are beginning in the morning. The FAQs will also be used as web copy and the web team needs a final version by 10am Central.
>
> Thank you for your attention and insights.
>
> Katie Siegel, Chief
> Air Toxics and Assessment Branch
> Air and Radiation Division
> U.S. EPA Region 5
> siegel.kathryn@epa.gov
> (312) 886-3006
>
> <steregenics-web-outline-draft_ARDfeedback.docx>

Message

From: Shaffer, Loretta [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=8B2C6BBD3D1E407AAC279D330822AEFD-LSHAFFER]
Sent: 8/23/2018 1:07:34 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Rollout of Sterigenics Data - Willowbrook

Okay, just checking.

From: Siegel, Kathryn
Sent: Thursday, August 23, 2018 8:07 AM
To: Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Subject: RE: Rollout of Sterigenics Data - Willowbrook

Not yet…

I'll let you know as soon as I hear something. Thank you!

From: Shaffer, Loretta
Sent: Thursday, August 23, 2018 8:06 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Rollout of Sterigenics Data - Willowbrook

Hi Katie, any word yet on scheduling this conference call?

From: Siegel, Kathryn
Sent: Wednesday, August 22, 2018 10:46 AM
To: Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Cc: Nam, Ed <nam.ed@epa.gov>
Subject: FW: Rollout of Sterigenics Data - Willowbrook

Hi Loretta,

We may need to set up a conference call with Willowbrook employees tomorrow. Their names are in the email below.

While we haven't given to go ahead to schedule and we are waiting for a couple of other meetings to be confirmed, I wanted you to have these names handy. Thanks!

From: Padovani, Steven
Sent: Wednesday, August 22, 2018 9:22 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Nam, Ed <nam.ed@epa.gov>; Borries, Samuel <borries.samuel@epa.gov>; Short, Thomas <short.thomas@epa.gov>; Ribordy, Michael <ribordy.mike@epa.gov>; Brown, Jaime <brown.jaime@epa.gov>
Subject: RE: Rollout of Sterigenics Data - Willowbrook

You might want to also cc Deliberative Process / Ex. 5
Deliberative Process / Ex. 5

Steve Padovani, Chief
Field Services Section

Superfund Division
US EPA, Region 5
77 West Jackson Blvd
Chicago, IL 60604
312-353-6755

From: Padovani, Steven
Sent: Wednesday, August 22, 2018 9:08 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Nam, Ed <nam.ed@epa.gov>; Borries, Samuel <borries.samuel@epa.gov>; Short, Thomas <short.thomas@epa.gov>
Subject: RE: Rollout of Sterigenics Data - Willowbrook

Hi Katie,

As discussed this morning, the following people work at Willowbrook:

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Steve Padovani, Chief
Field Services Section
Superfund Division
US EPA, Region 5
77 West Jackson Blvd
Chicago, IL 60604
312-353-6755

From: Siegel, Kathryn
Sent: Tuesday, August 21, 2018 3:24 PM
To: Nam, Ed <nam.ed@epa.gov>; Glover, John <Glover.John@epa.gov>; Durno, Mark <durno.mark@epa.gov>; Newton, Cheryl <Newton.Cheryl@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Payne, James <payne.james@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>; Colledge, Michelle <Colledge.Michelle@epa.gov>; Borries, Samuel <borries.samuel@epa.gov>; Padovani, Steven <padovani.steven@epa.gov>; Short, Thomas <short.thomas@epa.gov>
Subject: RE: Rollout of Sterigenics Data - Willowbrook

Thanks for meeting this afternoon. As discussed, please find a close hold, draft message to Willowbrook employees attached. Send any comments to me in tracked changes.

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

-----Original Appointment-----
From: Nam, Ed
Sent: Monday, August 20, 2018 5:55 PM
To: Nam, Ed; Glover, John; Durno, Mark; Newton, Cheryl; Siegel, Kathryn; Cain, Alexis; Furey, Eileen; Payne, James; Kelley, Jeff; Johnson, Mark; Colledge, Michelle; Borries, Samuel; Padovani, Steven; Short, Thomas
Cc: Thiede, Kurt; Bollweg, George
Subject: Rollout of Sterigenics Data - Willowbrook
When: Tuesday, August 21, 2018 2:00 PM-3:00 PM (UTC-06:00) Central Time (US & Canada).
Where: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Hello,

This email and attachments are close hold:
I'm rescheduling this meeting from last week. I wanted to discuss the communications plan with the Willowbrook employees.

Here is call in information: Personal Phone / Ex. 6
Conf code: Personal Phone / Ex. 6

In prep for the meeting tomorrow, I wanted to send around three documents, all background material:

- The first document is Jim Payne's email of June 22 to the employees at Willowbrook.
- The second is the ATSDR letter send to me on July 26 describing the risk to the workers and residents of the area, and recommendations for next steps. Some of you may have already seen this, but I wanted to let you know that the document is close hold right now, though ATSDR will be posting it to their website soon. If you want to quick summary, you can just skip to the conclusions. If you want more detail, p.10 shows some calculations for the chronic (long term) risk for the people who work near the facility.
- The third document is the one page briefing paper from John Glover for Cathy Stepp summarizing the indoor air monitoring that was conducted in July.

Thanks,
-Ed

Message

From: Rountree, Jillian [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7D304E5E55A54908B24B17E57ECDBF3C-JROUNTRE]
Sent: 8/30/2018 5:22:39 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]
Subject: RE: Today's Presentation

Thank you Katie!

Jillian Rountree
Air and Radiation Division Detail Attorney
U.S. EPA Region 5
312-353-3849
Some of my email messages and attachments contain information that is privileged, confidential, or prohibited from disclosure under applicable law. If you believe you may have received this message in error, please inform the sender immediately. Further, do not read, print, or distribute any messages or attachments received in error. Immediately delete and otherwise destroy any such messages and attachments. Thank you.

From: Siegel, Kathryn
Sent: Thursday, August 30, 2018 12:07 PM
To: Rountree, Jillian <Rountree.Jillian@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: FW: Today's Presentation

FYI

Sterigenics clarified that this is not confidential

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Wednesday, July 18, 2018 6:42 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; King, Steven <Steven.King@Illinois.gov>; Mattison, Kevin <Kevin.Mattison@Illinois.gov>; Ogulei, David <Ogulei.David@epa.gov>
Subject: Today's Presentation

It was nice meeting with all of you today at our Willowbrook facility. As promised during today's meeting, attached is my presentation. I hope this discussion and tour was helpful in better understanding our EO sterilization process and emissions. I look forward to continuing to work with you on this issue.

Let me know if you have any further questions.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Nam, Ed [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A2653F1DDD59470688BA557DD84D9690-NAM, ED]
Sent: 8/22/2018 9:37:11 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Willowbrook Air Monitoring Data

FYI. The changes looked ok to me. They are clearing it with Nancy Grantham.
-Ed

From: Payne, James
Sent: Wednesday, August 22, 2018 4:11 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: RE: Willowbrook Air Monitoring Data

For review.

DRAFT EMAIL

Dear Willowbrook Employees,

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Jim

From: Payne, James
Sent: Friday, June 22, 2018 3:27 PM
To: Personal Privacy / Ex. 6; Padovani, Steven <padovani.steven@epa.gov>; Short, Thomas <short.thomas@epa.gov>; Borries, Samuel <borries.samuel@epa.gov>; Ballotti, Doug <ballotti.douglas@epa.gov>
Cc: Stepp, Cathy <stepp.cathy@epa.gov>; Thiede, Kurt <thiede.kurt@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Newton, Cheryl <Newton.Cheryl@epa.gov>; Glover, John <Glover.John@epa.gov>
Subject: Willowbrook Air Monitoring Data

Personal Privacy / Ex. 6

Dear Willowbrook Employees,

Our Air program has conducted screening-level air toxics modeling and sampling near the Willowbrook, IL office over the last several months. Just recently it has come to my attention that the results of the screening activities detected low levels of ethylene oxide (EtO) in the air outside the office. As you may know, EtO is a flammable gas used as a sterilizing agent for medical equipment and as a chemical intermediate in the manufacture of other chemicals.

The levels detected were far below the levels that would be expected to result in health effects from acute or intermediate exposure, but EPA plans to conduct additional work to ensure that it understands the source and long term exposure of EtO in the area, including any effects on indoor air quality.

As indicated by the **attached** fact sheet and information from the Agency for Toxic Substances and Disease Registry (ATSDR), the levels detected using a 12-hour grab-sample were several orders of magnitude below important short-term

health values. These monitored concentrations were about 20 times below the ATSDR's screening levels for intermediate inhalation as well as more than 1500 times below the concentration identified by the federal Acute Exposure Guideline Level at which the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects.

The Agency continues to work to address EtO and other air toxics at the national level to reduce long-term, life-time exposures for chemicals posing chronic cancer risks.

Our Region has and will continue to be on the frontline in developing appropriate sampling and analysis procedures for EtO. To that end, EPA has a proposal to fund more sensitive sampling and a plan to develop an analytical procedure to evaluate the modeled risk to determine future action by the agency to mitigate emissions of EtO. EPA Region 5 has many EtO facilities and thus some of the greatest immediate need for this more sensitive monitoring technology in the nation. In addition, we are working closely with other parts of EPA to develop a comprehensive monitoring and assessment strategy for the Willowbrook office.

While our agency continues its work on this issue, employees and residents of Region 5 should be confident in our current assessment that the levels of EtO measured at Willowbrook do not pose an immediate health risk.

Thank you all for your continued work for the American people and please enjoy your weekend. If you have additional questions, feel free to contact me and I will make sure that your questions are addressed.

Jim

Message

From: Lewis, Evelyn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FB53946761BE49669C95BB1A46057596-LEWIS, EVEL]
on behalf of R5Hotline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D22AEE2080934019AD33F544D4279264-R5HOTLINE]
Sent: 10/4/2018 3:43:00 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: El`e Facility in McCook, IL

Good morning Katie,

Is this something you need to respond to?

Thanks
Evelyn Lewis
Multimedia Communications

From: Deborah Stone1 (Environment and Sustainability) [mailto:Deborah.Stone@cookcountyil.gov]
Sent: Thursday, October 4, 2018 9:09 AM
To: R5Hotline <R5Hotline@epa.gov>
Cc: Kevin Schnoes1 (Environment and Sustainability) <Kevin.Schnoes@cookcountyil.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: El`e Facility in McCook, IL

Please direct this inquiry to the head of the Region V Air and Radiation Division or the head of the Inspectional unit for Air and Radiation, thank you.
I am the Director of the Cook County Department of Environment and Sustainability.
Given recent concerns regarding ethylene oxide, we intent to conduct an inspection of the El`e (formerly/also known as Pelron) facility in McCook, Illinois, which has been identified (along with Sterigenics in Willowbrook) as a facility using EtO.
We intend to reinspect the El`e facility in McCook between now and October 18. We would like to request that the IEPA Air Division send an inspector with us.
Can you please have the appropriate person contact either myself, or Kevin Schnoes at 312-603-8214 to discuss schedules?
Thank you.
Deborah Stone, Director
Cook County Department of Environment and Sustainability
312-603-8204

Message

From: Borries, Samuel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=399D8FCC81224C52B9BAE279E0A02871-SBORRIES]
Sent: 8/21/2018 10:18:16 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Brown, Jaime [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=210136c42e0847dc9b9dd0a4820f9199-JBrown18]
Subject: RE: Rollout of Sterigenics Data - Willowbrook

Hi Katie,

Deliberative Process / Ex. 5

Sam Borries
Chief, Emergency Response Branch 2
USEPA Region 5, Superfund Division
Office: 312-353-8360
Mobile: 312-802-5336

From: Siegel, Kathryn
Sent: Tuesday, August 21, 2018 3:24 PM
To: Nam, Ed <nam.ed@epa.gov>; Glover, John <Glover.John@epa.gov>; Durno, Mark <durno.mark@epa.gov>; Newton, Cheryl <Newton.Cheryl@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Payne, James <payne.james@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>; Colledge, Michelle <Colledge.Michelle@epa.gov>; Borries, Samuel <borries.samuel@epa.gov>; Padovani, Steven <padovani.steven@epa.gov>; Short, Thomas <short.thomas@epa.gov>
Subject: RE: Rollout of Sterigenics Data - Willowbrook

Thanks for meeting this afternoon. As discussed, please find a close hold, draft message to Willowbrook employees attached. Send any comments to me in tracked changes.

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

-----Original Appointment-----
From: Nam, Ed
Sent: Monday, August 20, 2018 5:55 PM
To: Nam, Ed; Glover, John; Durno, Mark; Newton, Cheryl; Siegel, Kathryn; Cain, Alexis; Furey, Eileen; Payne, James; Kelley, Jeff; Johnson, Mark; Colledge, Michelle; Borries, Samuel; Padovani, Steven; Short, Thomas
Cc: Thiede, Kurt; Bollweg, George
Subject: Rollout of Sterigenics Data - Willowbrook
When: Tuesday, August 21, 2018 2:00 PM-3:00 PM (UTC-06:00) Central Time (US & Canada).
Where: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Hello,

This email and attachments are close hold:

I'm rescheduling this meeting from last week. I wanted to discuss the communications plan with the Willowbrook employees.

Here is call in information: Personal Phone / Ex. 6
Conf code: Personal Phone / Ex. 6

In prep for the meeting tomorrow, I wanted to send around three documents, all background material:

- The first document is Jim Payne's email of June 22 to the employees at Willowbrook.
- The second is the ATSDR letter send to me on July 26 describing the risk to the workers and residents of the area, and recommendations for next steps. Some of you may have already seen this, but I wanted to let you know that the document is close hold right now, though ATSDR will be posting it to their website soon. If you want to quick summary, you can just skip to the conclusions. If you want more detail, p.10 shows some calculations for the chronic (long term) risk for the people who work near the facility.
- The third document is the one page briefing paper from John Glover for Cathy Stepp summarizing the indoor air monitoring that was conducted in July.

Thanks,
-Ed

Message

From: Rountree, Jillian [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7D304E5E55A54908B24B17E57ECDBF3C-JROUNTRE]
Sent: 8/14/2018 8:51:20 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Redrafted Willowbrook employees communication

Thanks, Katie Attorney Client & Deliberative Process / Ex. 5

Jillian Rountree
Air and Radiation Division Detail Attorney
U.S. EPA Region 5
312-353-3849
Some of my email messages and attachments contain information that is privileged, confidential, or prohibited from disclosure under applicable law. If you believe you may have received this message in error, please inform the sender immediately. Further, do not read, print, or distribute any messages or attachments received in error. Immediately delete and otherwise destroy any such messages and attachments. Thank you.

From: Siegel, Kathryn
Sent: Tuesday, August 14, 2018 3:47 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>
Cc: Bollweg, George <bollweg.george@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Redrafted Willowbrook employees communication

Thanks for the great input. I incorporated your feedback in the attached letter:

- Attorney Client & Deliberative Process / Ex. 5

Unless someone strongly objects, I am going to send the attached letter to Mark and Michelle at 4:15pm. Thanks!

From: Cain, Alexis
Sent: Tuesday, August 14, 2018 3:18 PM
To: Rountree, Jillian <Rountree.Jillian@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>
Cc: Bollweg, George <bollweg.george@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Redrafted Willowbrook employees communication

Attorney Client & Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Rountree, Jillian
Sent: Tuesday, August 14, 2018 2:52 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Sieffert, Margaret

<Sieffert.Margaret@epa.gov>
Subject: RE: Redrafted Willowbrook employees communication

Two quick points. Attorney Client & Deliberative Process / Ex. 5

Attorney Client & Deliberative Process / Ex. 5

Jillian Rountree
Air and Radiation Division Detail Attorney
U.S. EPA Region 5
312-353-3849
Some of my email messages and attachments contain information that is privileged, confidential, or prohibited from disclosure under applicable law. If you believe you may have received this message in error, please inform the sender immediately. Further, do not read, print, or distribute any messages or attachments received in error. Immediately delete and otherwise destroy any such messages and attachments. Thank you.

From: Siegel, Kathryn
Sent: Tuesday, August 14, 2018 2:37 PM
To: Furey, Eileen <furey.eileen@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>
Cc: Rountree, Jillian <Rountree.Jillian@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Redrafted Willowbrook employees communication

Last call for edits. I will accept all changes and send the draft letter, plus the 6/22 and 6/27 communications, to Mark and Michelle for their feedback before tomorrow's 2pm meeting.

From: Furey, Eileen
Sent: Tuesday, August 14, 2018 2:33 PM
To: Nam, Ed <nam.ed@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Redrafted Willowbrook employees communication

I recommend attaching both the 6/22 and 6/27 communications to the Willowbrook employees.

Good edits. Make sure you accept all changes before sending.

ELF

Eileen L. Furey
Deputy Director
Air and Radiation Division
U.S. EPA Region 5
(312) 886-7950

From: Nam, Ed
Sent: Tuesday, August 14, 2018 2:28 PM
To: Cohen, Eric <cohen.eric@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Redrafted Willowbrook employees communication

Looks good. I made some minor mods, and inserted Margaret's edit.

Shall we attach John Glover's briefing paper for the RA?

-Ed

From: Cohen, Eric
Sent: Tuesday, August 14, 2018 2:22 PM
To: Furey, Eileen <furey.eileen@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Redrafted Willowbrook employees communication

With Margaret's correction, ok

From: Furey, Eileen
Sent: Tuesday, August 14, 2018 1:52 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>
Subject: Redrafted Willowbrook employees communication

Ed –
Once you're okay with this draft, Katie will send it to ATSDR to make sure they are too. This draft has some tweaks since the earlier draft this morning.
Eileen

Eileen L. Furey
Deputy Director
Air and Radiation Division
U.S. EPA Region 5
(312) 886-7950

Message

From: Johnson, Mark [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FA0BB816084B41598201F9335C5155FB-MOJOHNSO]
Sent: 8/21/2018 9:08:16 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Colledge, Michelle [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=20fa592058b44fa4b2fc724a8db2241b-MColledg]
Subject: RE: message to Willowbrook employees -- DRAFT
Attachments: Willowbrook message 8-21-18 MCMJ ed.DOCX

Katie

Here are comments from Michelle and I on the message for workers.

Mark

Mark D. Johnson, PhD, DABT
Regional Director/Toxicologist
Agency for Toxic Substances and Disease Registry (ATSDR)
77 W. Jackson Blvd. Rm. 433
Chicago, IL 60604
Email: mdjohnson@cdc.gov
Office: 312-353-3436
Cell: 312-307-7415

From: Siegel, Kathryn
Sent: Tuesday, August 21, 2018 10:46 AM
To: Colledge, Michelle <Colledge.Michelle@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>
Subject: FW: message to Willowbrook employees -- DRAFT

Mark and Michelle,

For the 2pm meeting, please come prepared to give a brief overview of your findings and provide any feedback on the draft message to Willowbrook employees.

Let me know if you have any questions. Thanks!

From: Siegel, Kathryn
Sent: Tuesday, August 14, 2018 4:15 PM
To: Johnson, Mark <johnson.mark@epa.gov>; Colledge, Michelle <Colledge.Michelle@epa.gov>
Cc: Rountree, Jillian <Rountree.Jillian@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>
Subject: message to Willowbrook employees -- DRAFT

Confidential Internal Deliberative

Mark and Michelle,

In preparation for tomorrow's meeting, I am attaching a draft message for Willowbrook employees.

For additional background, I am also attaching:

- 6/22 email – Willowbrook Air Monitoring Data
- 6/27 email – Willowbrook Indoor Air Sampling
- 8/2 email – Sterigenics Badge Sample Data

Please email any feedback or let us know if would like to meet before 2pm tomorrow to discuss. Thank you!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

Message

From: Colledge, Michelle [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=20FA592058B44FA4B2FC724A8DB2241B-MCOLLEDG]
Sent: 8/23/2018 9:10:21 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: links to live site for nata data

Thank you!

Michelle A. Colledge MPH, PhD
CAPT, U.S. Public Health Service
Agency for Toxic Substances and Disease Registry/NCEH/CDC, Region 5
77 W. Jackson Blvd., Room 413
Mailstop ATSD-4J
Chicago, Illinois 60604
Tel: 312-886-1462
Fax: 312-886-6066

please consider the environment before printing this email

From: Siegel, Kathryn
Sent: Thursday, August 23, 2018 4:07 PM
To: Colledge, Michelle <Colledge.Michelle@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>
Subject: RE: links to live site for nata data

Updated Sterigenics site:

https://www.epa.gov/il/sterigenics-willowbrook-facility-documents

Hoping to get some text and the map added.

From: Siegel, Kathryn
Sent: Thursday, August 23, 2018 8:06 AM
To: Colledge, Michelle <Colledge.Michelle@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>
Subject: RE: links to live site for nata data

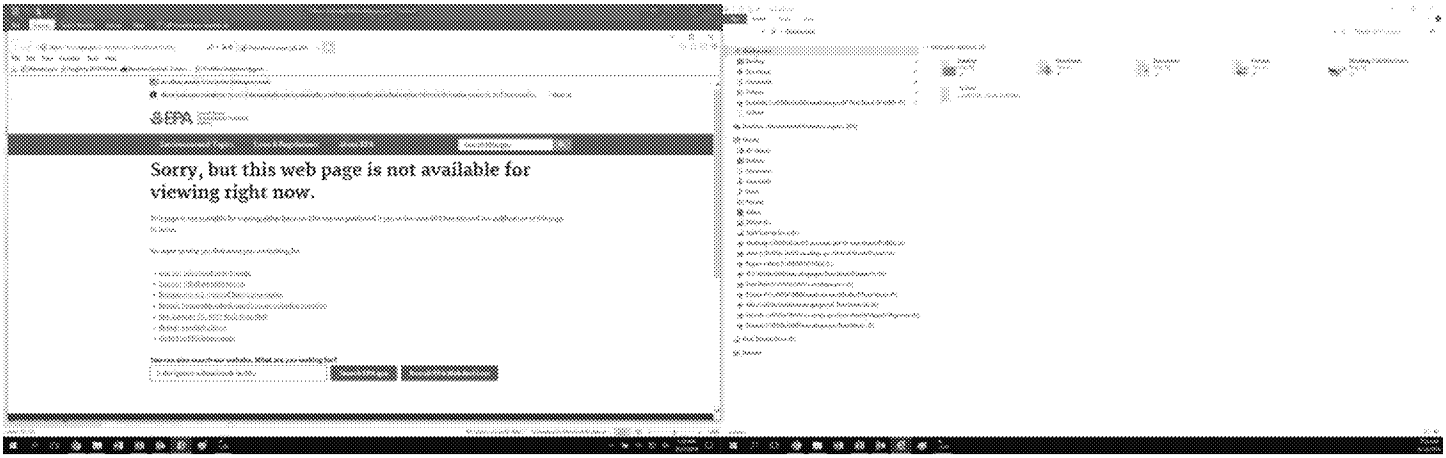
Use these for now:

https://www.epa.gov/national-air-toxics-assessment

https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide

From: Colledge, Michelle
Sent: Thursday, August 23, 2018 7:54 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>
Subject: RE: links to live site for nata data

This is what that link looks like in my browser, FYI



Michelle A. Colledge MPH, PhD
CAPT, U.S. Public Health Service
Agency for Toxic Substances and Disease Registry/NCEH/CDC, Region 5
77 W. Jackson Blvd., Room 413
Mailstop ATSD-4J
Chicago, Illinois 60604
Tel: 312-886-1462
Fax: 312-886-6066

please consider the environment before printing this email

From: Siegel, Kathryn
Sent: Wednesday, August 22, 2018 1:31 PM
To: Colledge, Michelle <Colledge.Michelle@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>
Subject: FW: links to live site for nata data

Many thanks!!!

From: Kelley, Jeff
Sent: Wednesday, August 22, 2018 1:22 PM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Bassler, Rachel <Bassler.Rachel@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Payne, James <payne.james@epa.gov>
Subject: FW: links to live site for nata data

All the web pages are live … Sterigenics is at https://www.epa.gov/il/sterigenics-willowbrook-facility

---

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Grantham, Nancy
Sent: Wednesday, August 22, 2018 1:21 PM
To: Regional Public Affairs Directors <Regional_Public_Affairs_Directors@epa.gov>

Cc: Richardson, RobinH <Richardson.RobinH@epa.gov>; Haman, Patricia <Haman.Patricia@epa.gov>; Bowles, Jack <Bowles.Jack@epa.gov>; Thundiyil, Karen <Thundiyil.Karen@epa.gov>; Davis, Matthew <Davis.Matthew@epa.gov>
Subject: FW: links to live site for nata data

See below

Nancy Grantham
Office of Public Affairs
US Environmental Protection Agency
202-564-6879 (desk)
202-253-7056 (mobile)

https://wcms.epa.gov/national-air-toxics-assessment/2014-national-air-toxics-assessment
https://wcms.epa.gov/national-air-toxics-assessment/2014-nata-fact-sheet
https://wcms.epa.gov/hazardous-air-pollutants-ethylene-oxide

Message

From: Nam, Ed [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A2653F1DDD59470688BA557DD84D9690-NAM, ED]
Sent: 9/25/2018 5:49:31 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Sterigenics letter

Katie,

I appreciate the fact that your folks are working on a lot of responses. Can you please start drafting one for this too? I'm not sure if it's being controlled.

Thanks
-Ed

From: Nam, Ed
Sent: Monday, September 17, 2018 1:13 PM
To: Kathryn Siegel (siegel.kathryn@epa.gov) <siegel.kathryn@epa.gov>; Jeff Kelley (kelley.jeff@epa.gov) <kelley.jeff@epa.gov>; Alexis Cain (cain.alexis@epa.gov) <cain.alexis@epa.gov>; Eileen Furey (furey.eileen@epa.gov) <furey.eileen@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>
Subject: FW: Sterigenics letter

Please see the attached letter from the IL Attorney General's office.

-Ed

From: Wallace, Elizabeth [mailto:EWallace@atg.state.il.us]
Sent: Monday, September 17, 2018 11:38 AM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Payne, James <payne.james@epa.gov>; Nelson, Leverett <nelson.leverett@epa.gov>; John.J.kim@illinois.gov; lisa.smith@dupageco.org; Dunn, Matthew <MDunn@atg.state.il.us>
Subject: Sterigenics letter

Good morning,

Please see the attached letter. If you have questions or wish to discuss further, Matt Dunn's direct line is (217) 524-5511, and my direct line is below.

Thank you for your assistance and we look forward to continuing to work with you on this matter.

Best regards,

Beth

Elizabeth Wallace, Chief
Environmental Bureau / Chicago
Office of the Illinois Attorney General
69 W. Washington St., 18th Flr.

Chicago, IL 60602
(312)814-5396
(312)814-2347 (fax)
ewallace@atg.state.il.us

Message

From: Schwebke, Peggy [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0630A26994834C9F8ABD6FF9F2000B9F-PSCHWEBK]
Sent: 10/3/2018 7:43:11 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: URGENT, DUE by 2:00 p.m.: review draft R5 OA

Thanks, Katie.

Peggy J. Schwebke
Division Program Analyst/Planner
Air & Radiation Division, Immediate Office
U.S. EPA, Region 5
phone: (312) 353-9309

From: Siegel, Kathryn
Sent: Wednesday, October 03, 2018 2:24 PM
To: Schwebke, Peggy <schwebke.peggy@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: URGENT, DUE by 2:00 p.m.: review draft R5 OA

Hi Peggy,

I talked to Alexis and we'd like the bullet to read how you fixed it. Thanks!

From: Schwebke, Peggy
Sent: Wednesday, October 03, 2018 11:46 AM
To: Breneman, Sara <breneman.sara@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: URGENT, DUE by 2:00 p.m.: review draft R5 OA

In my review, I identified four ARD bullets, one in each of the categories in section 3, plus our row in section 4.

I identified the following errors:
** Worked with Illinois EPA and ~~Sterigencis~~ Sterigenics to reduce emissions of ethylene oxide (EtO) ~~from~~ and secured ORD funding to develop EtO measurement methods.

Please let me know if you find anything else or have any concerns. Thanks.

Peggy J. Schwebke
Division Program Analyst/Planner
Air & Radiation Division, Immediate Office
U.S. EPA, Region 5
phone: (312) 353-9309

From: Schwebke, Peggy
Sent: Wednesday, October 03, 2018 11:15 AM

To: Breneman, Sara <breneman.sara@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Nam, Ed <nam.ed@epa.gov>; Furey, Eileen (furey.eileen@epa.gov) <furey.eileen@epa.gov>
Subject: URGENT, DUE by 2:00 p.m.: review draft R5 OA
Importance: High

Please review the attached draft Region 5 organizational assessment and let me know **by 2:00 p.m. today** if anything for our division is incorrect or you have any concerns about the way they worded our content.

Thanks. Almost done!

Peggy J. Schwebke
Division Program Analyst/Planner
Air & Radiation Division, Immediate Office
U.S. EPA, Region 5
phone: (312) 353-9309

From: Jencius, Morgan
Sent: Wednesday, October 03, 2018 11:08 AM
To: Taylor, Jori <taylor.jori@epa.gov>; Schwebke, Peggy <schwebke.peggy@epa.gov>; Hogan-Chereskin, Jean <hogan-chereskin.jean@epa.gov>; Russ, Michael <russ.michael@epa.gov>; Fisseha, Ashley <Fisseha.Ashley@epa.gov>
Cc: Holst, Linda <holst.linda@epa.gov>; Baltazar, Debbie <baltazar.debbie@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Harris, Michael <harris.michael@epa.gov>; Korleski, Christopher <korleski.christopher@epa.gov>; Nettesheim, Todd <nettesheim.todd@epa.gov>; Ballotti, Doug <ballotti.douglas@epa.gov>; Short, Thomas <short.thomas@epa.gov>; Maldonado, Mayra <maldonado.mayra@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>
Subject: ACTION - red flag review: R5 FY 2018 Organizational Assessment DRAFT 10-3-18

Please identify your division/office content, review for accuracy and share any red flag comments by 3 pm this afternoon.

Thanks to everyone for their content and quick replies. Region 5 had another great year of accomplishments!

Message

From: Colledge, Michelle [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=20FA592058B44FA4B2FC724A8DB2241B-MCOLLEDG]
Sent: 9/28/2018 1:58:35 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Johnson, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fa0bb816084b41598201f9335c5155fb-Mojohnso]
Subject: Re: IEPA website

Thanks, Katie. We saw the article that says EPA HQ has committed to community sampling. Are those SUMMA cans still good?? ☺

Michelle A. Colledge MPH, PhD
CAPT, U.S. Public Health Service
Agency for Toxic Substances and Disease Registry/NCEH/CDC, Region 5
77 W. Jackson Blvd., Room 413
Mailstop ATSD-4J
Chicago, Illinois 60604
Tel: 312-886-1462
Fax: 312-886-6066

please consider the environment before printing this email

From: Siegel, Kathryn
Sent: Friday, September 28, 2018 8:57 AM
To: Johnson, Mark; Colledge, Michelle
Subject: IEPA website

https://www2.illinois.gov/epa/topics/community-relations/sites/sterigenics/Pages/default.aspx

Sterigenics - Sterigenics

www2.illinois.gov

The Illinois EPA will update this page with additional information as it become available and with answers to questions posed from the public.. Navigation

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

Message

From: Schwebke, Peggy [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0630A26994834C9F8ABD6FF9F2000B9F-PSCHWEBK]
Sent: 10/3/2018 4:50:18 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: final numbers for OA

Got it. Thanks, Katie.

Peggy J. Schwebke
Division Program Analyst/Planner
Air & Radiation Division, Immediate Office
U.S. EPA, Region 5
phone: (312) 353-9309

From: Siegel, Kathryn
Sent: Wednesday, October 03, 2018 11:19 AM
To: Schwebke, Peggy <schwebke.peggy@epa.gov>
Subject: RE: final numbers for OA

Peggy,

Here are our updated numbers for the org assessment:

Deliberative Process / Ex. 5

I will send you and Ed additional bullets for his self-assessment in a separate email. Thanks!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

From: Schwebke, Peggy
Sent: Tuesday, October 02, 2018 11:45 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: final numbers for OA

If you mean noon tomorrow, I think that will be OK. Ed's self-evaluation is due by COB tomorrow, so noon should give us enough time to make any changes to just the numbers.

For the R5 OA, the final version is due to HQ by COB Tuesday, Oct. 9, so we can continue making changes to numbers throughout this week.

P.S. I got a message from OAR this morning that included Kelly as a contact, so I called and found out that she's working in OAR now and is the backup for my regular contact (Marc Vincent). I didn't know that until now, but I might be talking to her more in the future!

Peggy J. Schwebke
Division Program Analyst/Planner
Air & Radiation Division, Immediate Office
U.S. EPA, Region 5
phone: (312) 353-9309

From: Siegel, Kathryn
Sent: Tuesday, October 02, 2018 11:38 AM
To: Schwebke, Peggy <schwebke.peggy@epa.gov>
Subject: RE: final numbers for OA

Hi Peggy,

Would noon on Wednesday work for the final org assessment numbers? Thanks!

From: Schwebke, Peggy
Sent: Monday, October 01, 2018 9:14 AM
To: Breneman, Sara <breneman.sara@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: final numbers for OA
Importance: High

Good morning, everyone. Just wanted to remind you to send me your final numbers as soon as possible for any bullets in the organizational assessment that currently have red text. We need to update them in the ARD OA so that final numbers go in the R5 version before ORA sends it to HQ, and we need to include them in Ed's self-evaluation, which is due on Wednesday.

Thanks, and happy new (fiscal) year!

Peggy J. Schwebke
Division Program Analyst/Planner
Air & Radiation Division, Immediate Office
U.S. EPA, Region 5
phone: (312) 353-9309

Message

From: Jones, Kathy A [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=209210C7644B47D3884E7B202C77ACE6-KJONES03]
Sent: 1/4/2018 3:30:51 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]; Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Subject: RE: There are no reports for the ARD Weekly Report to the RA - 1-5-18

Sure. Will do.

From: Nam, Ed
Sent: Thursday, January 04, 2018 9:08 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Jones, Kathy A <jones.kathya@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: There are no reports for the ARD Weekly Report to the RA - 1-5-18

Great, thanks. Kathy, can you please prepare the email I can forward?

Thanks
-Ed

From: Siegel, Kathryn
Sent: Thursday, January 04, 2018 9:00 AM
To: Nam, Ed <nam.ed@epa.gov>; Jones, Kathy A <jones.kathya@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Schwebke, Peggy <schwebke.peggy@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: There are no reports for the ARD Weekly Report to the RA - 1-5-18

Please let us know if you have any feedback. Thanks!

Activity: Letters Sent to Ethylene Oxide (EtO) Sources about Possible Cancer Risk

Press Interest/Coverage: None

Issue: On December 22, the Air and Radiation Division sent letters to two sources of EtO—Sterigenics, a commercial sterilizer in Willowbrook, Illinois, and Elé Corporation, a chemical manufacturer in Lyons, Illinois.

The letters inform the two facilities that preliminary modeling indicates that their EtO emissions may be causing high cancer risks. The letters offer the facilities the opportunity to evaluate the modeling and to provide updated modeling inputs, if appropriate, and they express EPA's interest in working with the companies on a voluntary basis to reduce risks to the community.

Illinois EPA has been informed of this activity and will be offered the opportunity to participate in any future discussions with the facilities. The Air and Radiation Division will be evaluating additional EtO sources for possible risk; in December 2016, EPA increased its estimate of EtO cancer potency by approximately 60-fold.

Attachments: None

From: Nam, Ed
Sent: Wednesday, January 03, 2018 4:54 PM
To: Jones, Kathy A <jones.kathya@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Schwebke, Peggy <schwebke.peggy@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Breneman, Sara <breneman.sara@epa.gov>; Mooney, John <Mooney.John@epa.gov>
Subject: RE: There are no reports for the ARD Weekly Report to the RA - 1-5-18

I've asked Katie to write one up. Will submit tomorrow by noon.

Thanks
-Ed

From: Jones, Kathy A
Sent: Wednesday, January 03, 2018 4:27 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Schwebke, Peggy <schwebke.peggy@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Subject: There are no reports for the ARD Weekly Report to the RA - 1-5-18

* * * * *
To:
Rowan, Anne; Williams, Felicia; Martinez, Isidra; Marshall, Marjorie

Cc:
Singer, Joshua; Peterson, John; Walts, Alan; Nam, Ed; Furey, Eileen; Breneman, Sara; Mooney, John; Siegel, Kathryn; King-Hackney, Ashadee; Frank, Nathan; Marshall, Sarah; Dickens, Brian; Damico, Genevieve; Aburano, Douglas; Blakley, Pamela; Nelson, Diane; Compher, Michael; Cain, Alexis; Jencius, Michele; Schwebke, Peggy; Shaffer, Loretta

* * * * *

Attached are ARD's Weekly Report to the RA chart and text documents for the week ending January 5.

Message

From: Siegel, Kathryn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F57A52EFEAD9497CB582B11B8C85F09F-KSIEGE02]
Sent: 10/11/2018 3:37:29 PM
To: Johnson, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fa0bb816084b41598201f9335c5155fb-Mojohnso]
Subject: RE: connection to Dr. Orris

Thanks, Mark. I'll circle back afterwards.

From: Johnson, Mark
Sent: Thursday, October 11, 2018 7:15 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Re: connection to Dr. Orris

Katie

I am going to be in East Chicago for an event this afternoon. I may be able to participate briefly, but go ahead without me.

Mark

Sent from my iPhone

On Oct 10, 2018, at 5:22 PM, Siegel, Kathryn <siegel.kathryn@epa.gov> wrote:

> Great! Let's do 2-3pm tomorrow. I will follow up with a calendar invite.
>
> We are happy to host you or do it by phone. Let us know which you prefer.
>
> Thanks and looking forward to our discussion!
>
> Katie Siegel, Chief
> Air Toxics and Assessment Branch
> Air and Radiation Division
> U.S. EPA Region 5
> siegel.kathryn@epa.gov
> (312) 886-3006
>
> ---
>
> **From:** Orris, Peter [mailto:porris@uic.edu]
> **Sent:** Saturday, October 06, 2018 4:52 PM
> **To:** Siegel, Kathryn <siegel.kathryn@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>
> **Cc:** Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Twickler, Donna <twickler.donna@epa.gov>; Mattison, Kevin <Kevin.Mattison@Illinois.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>
> **Subject:** RE: connection to Dr. Orris
>
> Dr. Siegel-
>
> great

10/11 – 1-3 pm or 10/17 2-3 are both fine – just let me know
want to do it in person – can come down to you – or here is fine as well
or by phone

Let me know

Iceland – World Medical Association – went well for environmental issues
cold and rainy – North Atlantic –

p

Peter Orris, MD, MPH
Professor and Chief
Occupational and Environmental Medicine
University of Illinois Hospital and Health Sciences System
835 S. Wolcott, MC 684
Chicago, IL 60612
Of Ph 312-413-0369
Direct 312-413-0105
Fx 312-413-8485

From: Siegel, Kathryn <siegel.kathryn@epa.gov>
Sent: Friday, October 05, 2018 5:46 PM
To: Orris, Peter <porris@uic.edu>; Johnson, Mark <johnson.mark@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Twickler, Donna <twickler.donna@epa.gov>; Mattison, Kevin <Kevin.Mattison@Illinois.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>
Subject: RE: connection to Dr. Orris

Dr. Orris,

Great to connect with you.

Would any of the following times work for a call? If not, please suggest some alternatives.

- 10/11: 1-3pm
- 10/17: 11am-12pm or 2-3pm

Hope your meeting in Iceland went well. We look forward to talking soon. Thanks!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

From: Orris, Peter [mailto:porris@uic.edu]
Sent: Sunday, September 30, 2018 11:42 PM
To: Johnson, Mark <johnson.mark@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Twickler, Donna <twickler.donna@epa.gov>; Colledge, Michelle

<Colledge.Michelle@epa.gov>
Subject: RE: connection to Dr. Orris

Mark
Thank you for the introduction
As you note that I will be in Iceland for a meeting from Monday 6 PM to Friday 4 PM

What I have found out with respect to the statement from Sterigenics at the community meeting that "the FDA requires using ETO for sterilizing certain products"

Called around at FDA till I found those in charge of the area –

Actually the FDA sets standards for what sterilizing means (how sterile is required) but does not mandate any sterilant. The health industry relies on the AAMI consensus standards –
we bought the technical document. Unfortunately it is structured to tell you what sterilant can be used with which materials – not vice versa – so we had to take the charts and check
if any material required ETO and all other modalities either could not be used or was markedly inferior.
The good news is it supported what I had heard – there is no material that can not be sterilized by other methods or materials such as H202.
I suggest involving Jim Boiano at NIOSH who wrote a paper on comparison with H202 a few years ago. (CDC/NIOSH/DSHEFS) jmb4@cdc.gov

And final proof of the pudding – when I checked here at UIC Hospital – we are sterilizing nothing with ETO nor do we contract anyone else to do so for us.

p
Peter Orris, MD, MPH
Professor and Chief
Occupational and Environmental Medicine
University of Illinois Hospital and Health Sciences System
835 S. Wolcott, MC 684
Chicago, IL 60612
Of Ph 312-413-0369
Direct 312-413-0105
Fx 312-413-8485

From: Johnson, Mark <johnson.mark@epa.gov>
Sent: Friday, September 28, 2018 4:15 PM
To: Orris, Peter <porris@uic.edu>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Twickler, Donna <twickler.donna@epa.gov>; Colledge, Michelle <Colledge.Michelle@epa.gov>
Subject: FW: connection to Dr. Orris

Peter

EPA has developed an EtO strategy that includes the evaluation of alternative technologies. Katie Siegel, Branch Chief with the Air and Radiation Division at EPA-Region 5, is leading a group of EPA that is reaching out to organizations and experts in this area. Given your interest in the consideration of EtO in the medical field, they wanted to contact you to see if you would be willing to discuss this issue further. Attached are some fact sheets that provide some additional background.

I know that you are heading out of the country next week, but maybe you could let us know your availability the following week and we can set up a call. Have a good trip. Thanks.

Mark

Mark D. Johnson, PhD, DABT
Regional Director/Toxicologist
Agency for Toxic Substances and Disease Registry (ATSDR)
77 W. Jackson Blvd. Rm. 433
Chicago, IL 60604
Email: mdjohnson@cdc.gov
Office: 312-353-3436
Cell: 312-307-7415

From: Siegel, Kathryn
Sent: Monday, September 10, 2018 3:35 PM
To: Colledge, Michelle <Colledge.Michelle@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Twickler, Donna <twickler.donna@epa.gov>
Subject: connection to Dr. Orris

Hi Mark and Michelle,

As part of our EtO strategy, we have been doing outreach to NGOS, like Practice GreenHealth, and developing case studies and fact sheets (see attached).

From press articles, I understand that Dr. Peter Orris has been also trying to advance alternatives. Would you please introduce us over email? We'd like to see if he'd be interested in a meeting or call to see how we can amplify each other's efforts. Thanks!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006