Public Health Concerns of the H2S Exceedances Near & Around New Indy Facility, SC

June 12 – June 20/2021

Updated Analysis

DRAFT

Public Health Concerns of the H2S Exceedances Near & Around New Indy Facility, SC

July 23, 2021

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Introduction:

There have been concerns that New Indy Facility located in Catawba, South Carolina had been generating bad odor and the communities around the facility were reporting odor complaints daily. Therefore, Region 4 EPA and SCDHEC have been collecting H2S data at the facility's 3 stations and 10 additional communities surrounding the facility. This report is generated to conduct an analysis of the H2S concentrations, number of complaints and the extent of H2S plumes for July 12 to July 21, 2021. The H2S concentrations exceeded the 600ppb on 6/12 (675ppb), 6/14 (1330ppb), 6/15 (624.7ppb, 676.6ppb, 674.9ppb), and 6/20 (812ppb, 1024ppb). To better understand the relativeness of these exceedances, all days between 6/12 and 6/21 have been analyzed.

Methods:

Daily reports of H2S concentrations for each of the 3 fence line stations at the Facility and the 10 communities were gathered along with the locations of the odor complaints. This data was summarized, mapped, and analyzed for each of the days. The H2S concentrations were collected by the monitors every 30 minutes for potential exceedances for 600ppb and were summarized and analyzed based on daily results. The odor complaints were reported by the public anytime to SCDHEC to their website.

All the daily odor complaints were layered on top of the maximum H2S concentrations collected for the same day. In addition, wind roses (direction of the wind & speed) for each day was generated at the facility station.

Map 1. Locations of Fence line Monitors

Map 2. Locations of Facility Stations & the Communities.

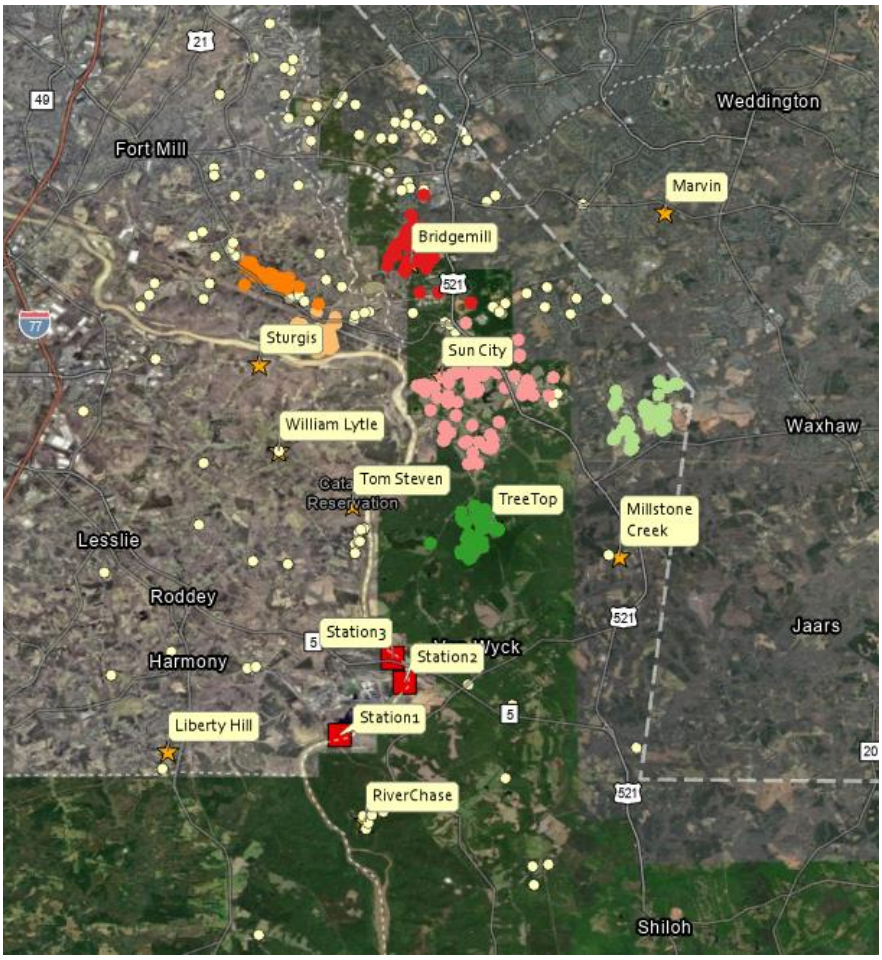


Table 1. Summary - Maximum Concentrations(ppb) at Facility Stations & Communities.

	Maximum H2S Concentration												
Date (Odor Complaints)*	Stat1	Stat2	Stat3	Sturgis	William Lytle	TreeTop	Marvin	Sun City	Millstone Creek	Bridge Mill	River Chase	Liberty Hill	Tom Steven
6/12/2021 (21)	675	107	38	0	0	2	0	3	10	0	26	0	0
6/13/2021 (11)	568	1	45	0	0	0	0	18	0	0	11	10	0
6/14/2021 (567)	1330	160	101	74	89	20	17	33	21	16	59	9	92
6/15/2021 (58)	677	146	42	0	0	3	13	10	30	2	18	0	10
6/16/2021 (4)	533	19	5	0	0	0	0	5	0	0	34	0	0
6/17/2021 (15)	528	10	12	0	2	0	0	6	2	0	15	1	1
6/18/2021 (108)	291	32	77	8	12	2	1	15	2	4	3	16	10
6/19/2021 (56)	272	35	60	7	0	5	4	18	9	4	0	0	9
6/20/2021 (61)	1024	52	40	21	17	4	5	9	7	2	36	2	55
6/21/2021 (64)	68	56	5	0	0	20	23	12	16	1	0	0	3

(Odor Complaints)* = Source "Lancaster & York Counties Odor 2021", DHEC - Odor Complaints - Jan/June 2021

Table 2. Maximum H2S Concentrations at the Facility Fenceline.

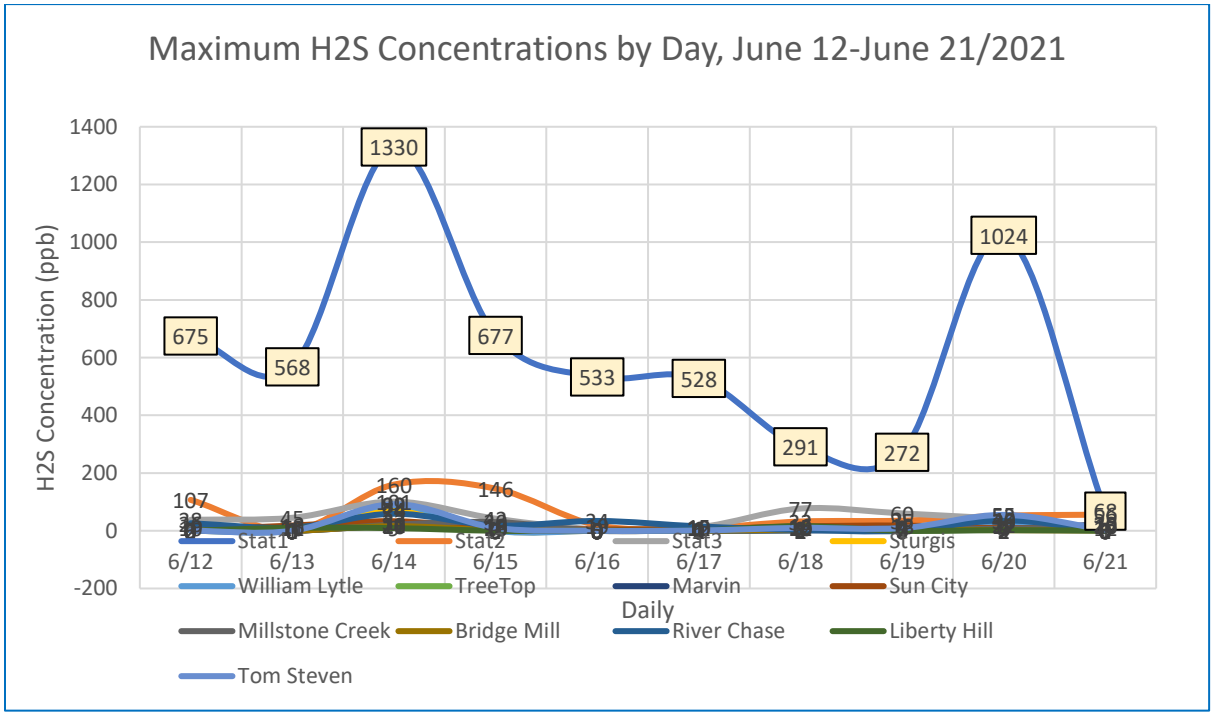
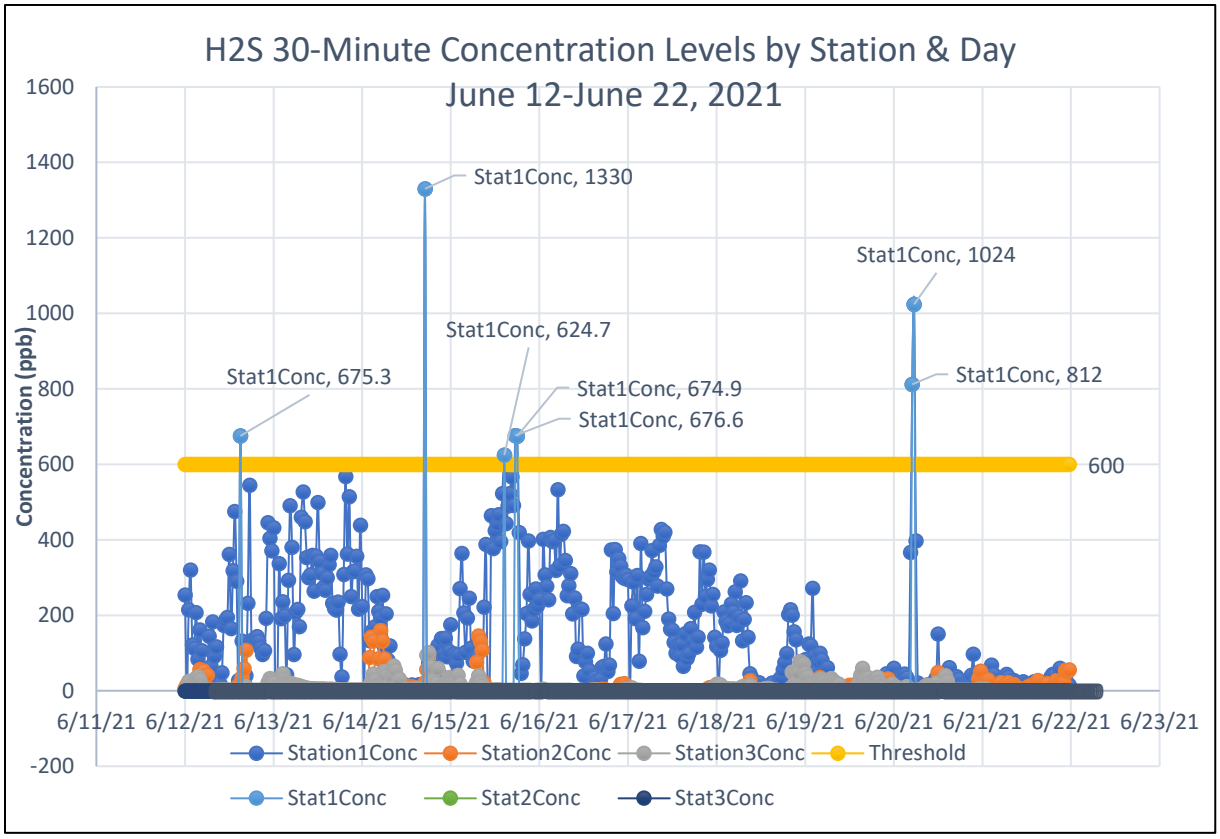


Table 3. Maximum H2S Concentrations at the Facility Fenceline.

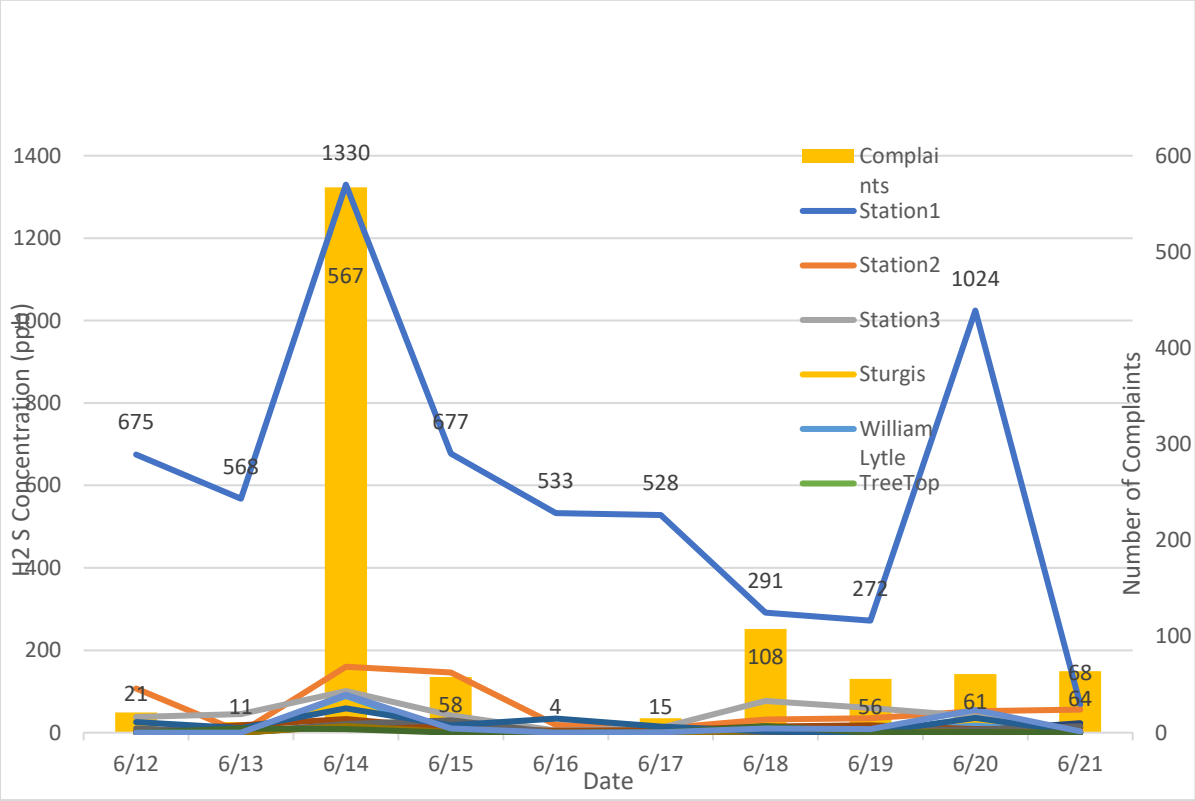


(Odor Complaints)* = Source "Lancaster & York Counties Odor 2021", DHEC - Odor Complaints - Jan/June 2021

Table 4. Highest H2S Concentrations (ppb) at the Facility Stations and the Communities with Total Complaints by Day.

	Highest Daily H2S Concentrations (date)									
Facility	**6/12**	**6/13**	**6/14**	**6/15**	**6/16**	**6/17**	**6/18**	**6/19**	**6/20**	**6/21**
Station1	675	568	1330	677	533	528	291	272	1024	68
Station2	107	1	160	146	19	10	32	35	52	56
Station3	38	45	101	42	5	12	77	60	40	5
Community										
Sturgis	0	0	74	0	0	0	8	7	21	0
William Lytle	0	0	89	0	0	2	12	0	17	0
TreeTop	2	0	20	3	0	0	2	5	4	20
Marvin	0	0	17	13	0	0	1	4	5	23
Sun City	3	18	33	10	5	6	15	18	9	12
Millstone Creek	10	0	21	30	0	2	2	9	7	16
Bridgemill	0	0	16	2	0	0	4	4	2	1
RiverChase	26	11	59	18	34	15	3	0	36	0
Liberty Hill	0	10	9	0	0	1	16	0	2	0
Tom Steven	0	0	92	10	0	1	10	9	55	3
Complaints	21	11	567	58	4	15	108	56	61	64

Table 5. Number of complaints and the highest H2S concentrations, 6/12 – 6/21, 2021



June 12/ 2021

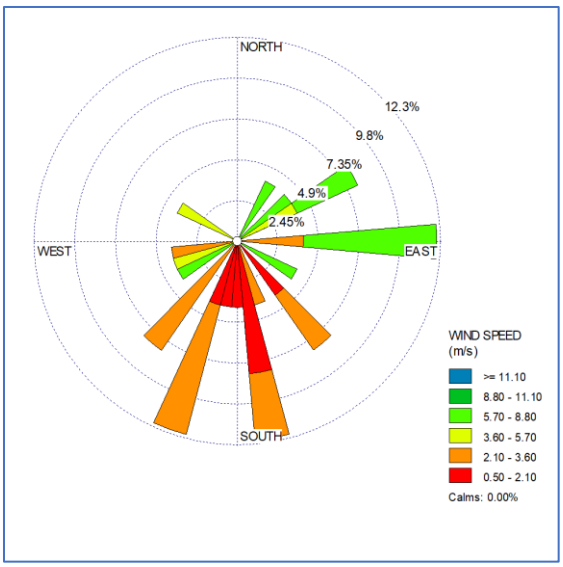
Data:

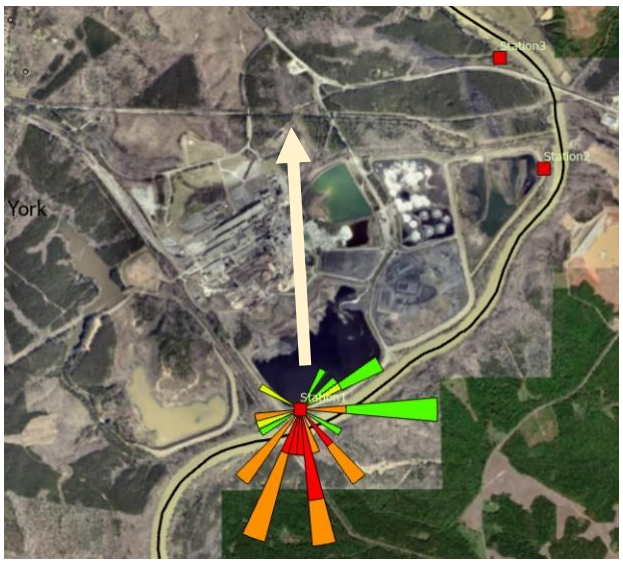
June 12, 2021 (21 Odor Complaints)	Station 1	Station 2	Station 3
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/12/21 12:00 AM	254.1	6.0	1.2
6/12/21 12:30 AM	AX	14.7	3.6
6/12/21 1:00 AM	215.1	AX	25.4
6/12/21 1:30 AM	320.0	0.4	AX
6/12/21 2:00 AM	121.3	0.2	18.1
6/12/21 2:30 AM	112.5	0.2	11.5
6/12/21 3:00 AM	207.3	0.2	33.8
6/12/21 3:30 AM	83.2	1.0	38.0
6/12/21 4:00 AM	161.4	56.6	29.0
6/12/21 4:30 AM	106.5	51.7	9.6
6/12/21 5:00 AM	8.7	53.2	3.7
6/12/21 5:30 AM	38.2	38.6	2.0
6/12/21 6:00 AM	31.5	42.2	1.8
6/12/21 6:30 AM	144.6	4.4	1.4
6/12/21 7:00 AM	63.8	0.3	1.3
6/12/21 7:30 AM	182.5	0.2	1.3
6/12/21 8:00 AM	92.1	0.2	1.2
6/12/21 8:30 AM	116.8	0.2	1.6
6/12/21 9:00 AM	24.2	0.3	1.9
6/12/21 9:30 AM	18.7	0.4	1.9
6/12/21 10:00 AM	47.6	0.2	1.9
6/12/21 10:30 AM	173.7	0.3	1.9
6/12/21 11:00 AM	188.2	0.3	1.8
6/12/21 11:30 AM	194.3	0.4	2.0
6/12/21 12:00 PM	362.1	0.3	1.8
6/12/21 12:30 PM	165.2	0.2	1.6
6/12/21 1:00 PM	318.4	0.2	1.5
6/12/21 1:30 PM	474.9	0.2	1.5
6/12/21 2:00 PM	290.2	0.2	1.7
6/12/21 2:30 PM	27.3	15.3	1.1
6/12/21 3:00 PM	675.3	0.3	1.1
6/12/21 3:30 PM	132.1	36.1	1.9
6/12/21 4:00 PM	23.7	59.1	1.6
6/12/21 4:30 PM	40.2	107.4	11.8
6/12/21 5:00 PM	231.9	2.2	1.4
6/12/21 5:30 PM	545.1	0.2	1.1

June 12, 2021 (21 Odor Complaints)	Station 1	Station 2	Station 3
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
6/12/21 6:00 PM	132.5	0.2	1.5
6/12/21 6:30 PM	134.6	0.2	1.5
6/12/21 7:00 PM	139.2	0.2	1.1
6/12/21 7:30 PM	144.0	0.2	1.4
6/12/21 8:00 PM	131.2	0.2	1.4
6/12/21 8:30 PM	112.9	0.2	1.1
6/12/21 9:00 PM	95.9	0.2	1.0
6/12/21 9:30 PM	106.7	0.2	1.0
6/12/21 10:00 PM	191.8	0.2	1.1
6/12/21 10:30 PM	445.9	0.2	21.5
6/12/21 11:00 PM	404.1	0.2	33.0
6/12/21 11:30 PM	371.2	0.2	28.4

A. Which way is the wind blowing from the facility on June 12, 2021?

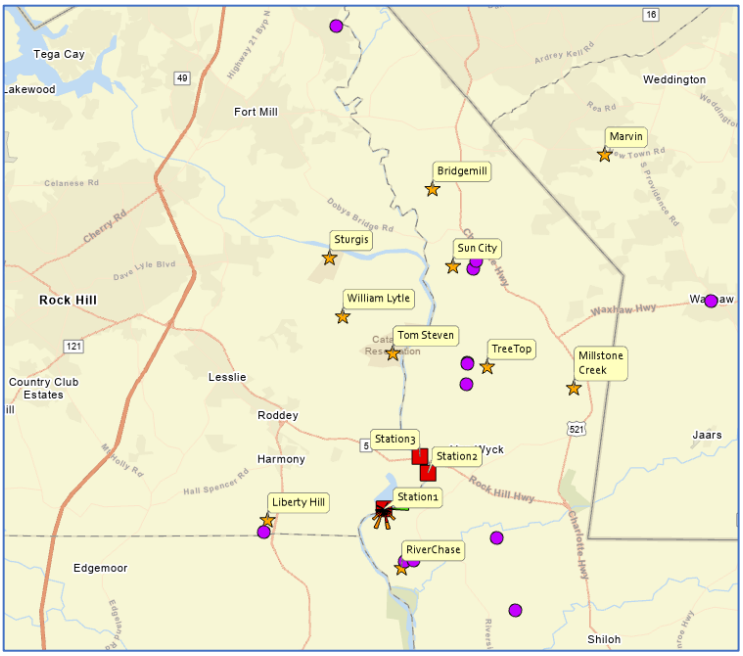
Wind & Speed Direction are based on Meteorological data from Station 1 (for Station2 & Station3) – Going North





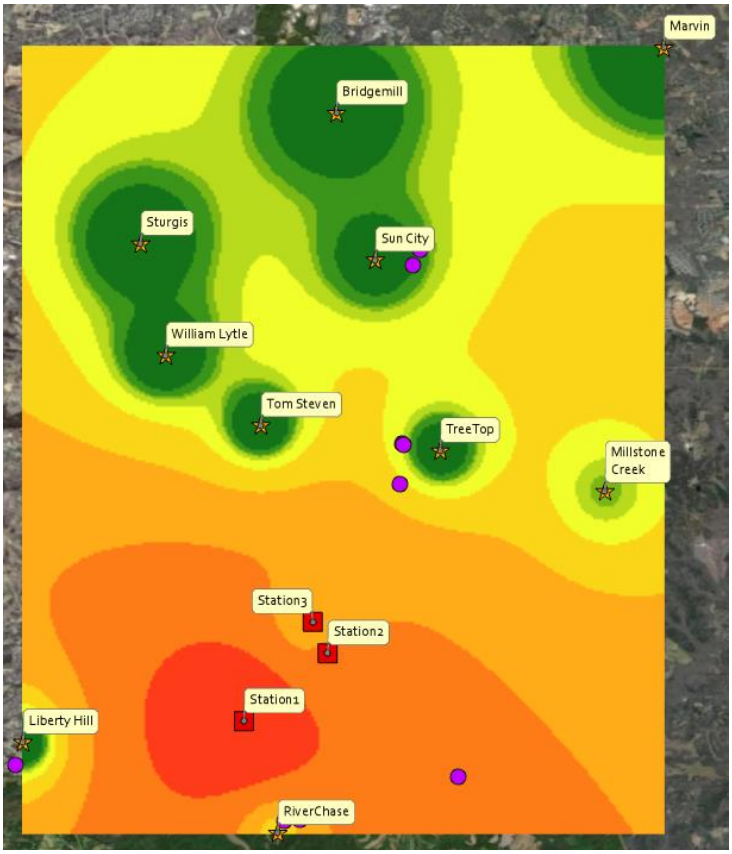
B. Where are the complaints on June 12, 2021?

There were 21 odor complaints which is not enough to see any clusters.



C. What is the concentration distribution on June 12, 2021?

There was one incident of 675 ppb for H2S, above the 600-ppb exceedance level on this day. This density map shows that the increased H2S concentration on this day was still near the Facility & had not reached completely at the northern communities. Higher concentration contours are in red near the Facility.



June 13/2021

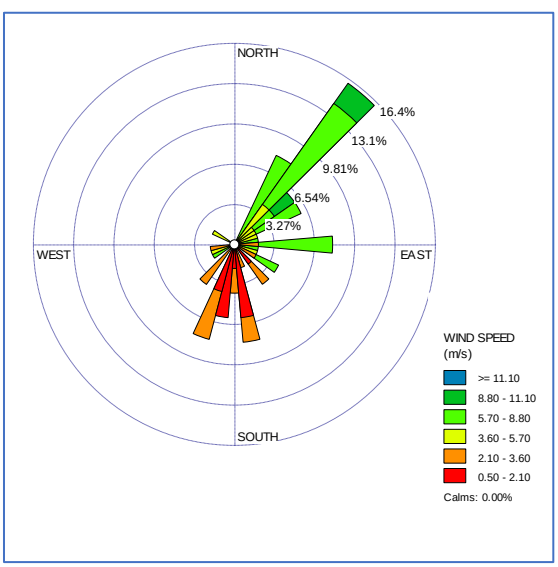
Data:

June 13, 2021 (11 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/13/21 12:00 AM	431.8	0.2	22.3
6/13/21 12:30 AM	BF	0.2	4.5
6/13/21 1:00 AM	BF	BF	8.0
6/13/21 1:30 AM	336.7	BF	BF
6/13/21 2:00 AM	191.4	0.6	BF
6/13/21 2:30 AM	236.1	0.2	45.2
6/13/21 3:00 AM	199.1	0.2	31.2
6/13/21 3:30 AM	43.1	0.2	23.7
6/13/21 4:00 AM	293.0	0.2	20.1
6/13/21 4:30 AM	490.7	0.2	18.7
6/13/21 5:00 AM	380.5	0.2	19.5
6/13/21 5:30 AM	95.9	0.2	13.6
6/13/21 6:00 AM	208.9	0.2	15.1
6/13/21 6:30 AM	216.1	0.2	14.6
6/13/21 7:00 AM	169.9	0.2	12.8
6/13/21 7:30 AM	459.9	0.2	11.1
6/13/21 8:00 AM	527.2	0.2	9.5
6/13/21 8:30 AM	448.4	0.2	8.2
6/13/21 9:00 AM	352.8	0.2	7.3
6/13/21 9:30 AM	299.5	0.2	6.6
6/13/21 10:00 AM	307.8	0.2	5.9
6/13/21 10:30 AM	358.8	0.2	5.4
6/13/21 11:00 AM	264.2	0.2	5.2
6/13/21 11:30 AM	357.1	0.2	5.1
6/13/21 12:00 PM	499.0	0.2	5.0
6/13/21 12:30 PM	342.7	0.2	4.9
6/13/21 1:00 PM	311.5	0.2	4.8
6/13/21 1:30 PM	273.6	0.2	4.5
6/13/21 2:00 PM	266.8	0.2	4.3
6/13/21 2:30 PM	299.9	0.2	4.3
6/13/21 3:00 PM	334.8	0.2	4.3
6/13/21 3:30 PM	359.1	0.2	4.3
6/13/21 4:00 PM	232.0	0.2	4.1

June 13, 2021 (11 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
6/13/21 4:30 PM	218.1	0.2	3.8
6/13/21 5:00 PM	214.2	0.2	3.2
6/13/21 5:30 PM	235.0	0.2	2.9
6/13/21 6:00 PM	97.5	0.2	2.6
6/13/21 6:30 PM	37.1	0.2	2.4
6/13/21 7:00 PM	308.3	0.2	2.3
6/13/21 7:30 PM	567.9	0.2	2.3
6/13/21 8:00 PM	362.7	0.2	2.2
6/13/21 8:30 PM	514.6	0.2	2.1
6/13/21 9:00 PM	250.0	0.2	2.0
6/13/21 9:30 PM	315.8	0.2	2.3
6/13/21 10:00 PM	318.0	0.6	2.4
6/13/21 10:30 PM	356.4	0.4	2.0
6/13/21 11:00 PM	216.6	0.6	2.0
6/13/21 11:30 PM	439.0	0.8	2.0

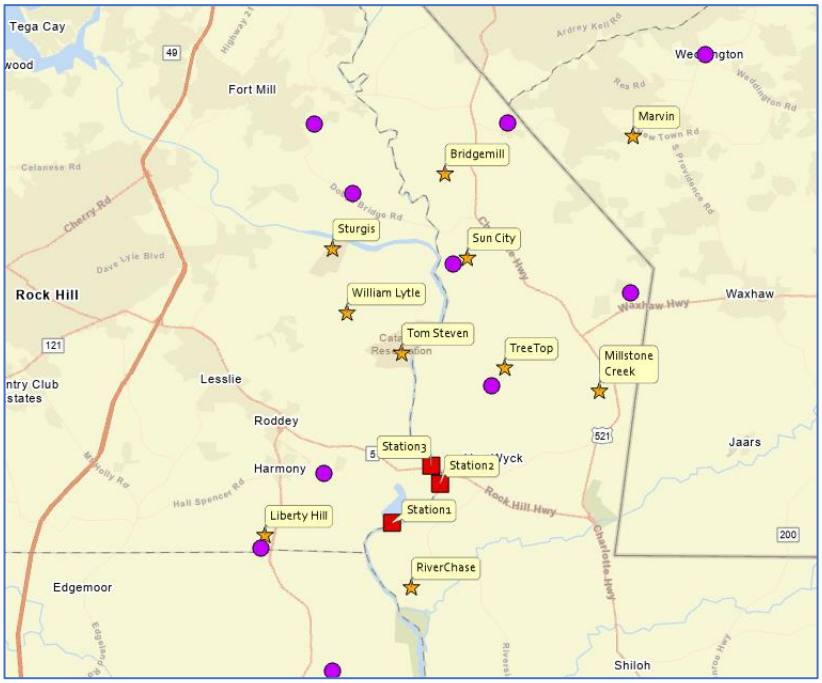
A. Which way is the wind blowing from the Facility on June 13, 2021?

Wind & Speed Direction based on Meteorological data from Station 1 (for Station2 & Station3) – Going North.



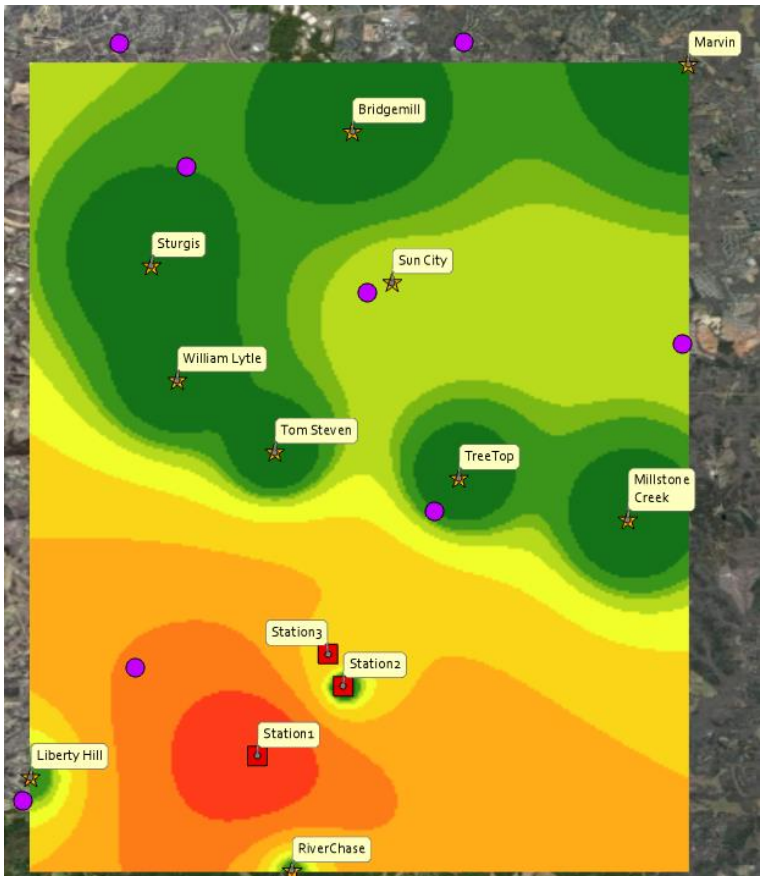
B. Where are the complaints on June 13, 2021?

There were 11 odor complaints with no obvious clusters. With the wind direction from the New Indy Facility (Fence Line data) – it shows that majority of the odor complaints went/observed north of the Facility & not south of the Facility.



C. What is the concentration distribution on June 13, 2021?

This concentration density map shows that northern wind direction from the Facility had caused the H2S concentration to reach the northern communities – especially Tom Steven community.



June 14/2021

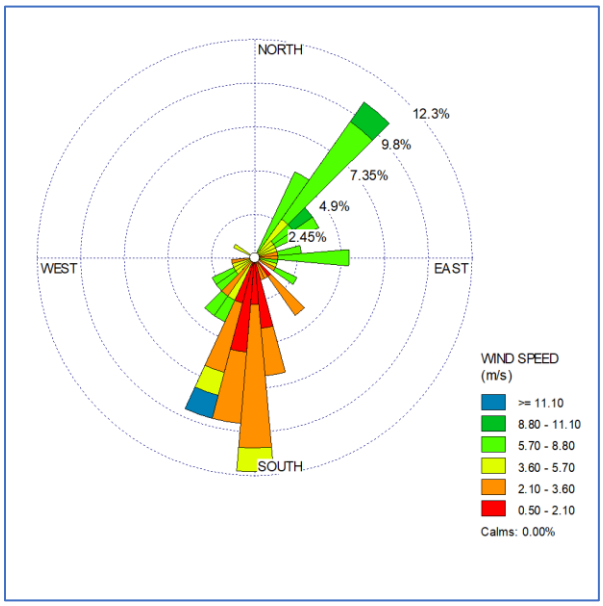
Data:

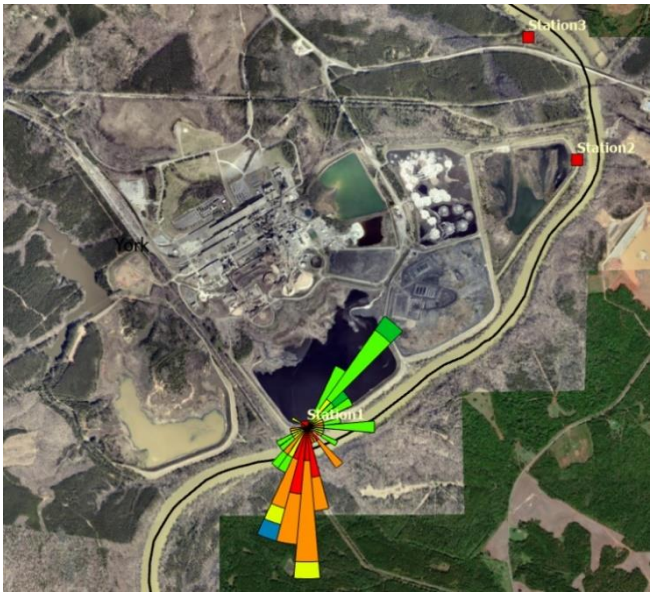
June 14, 2021 (567 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/14/21 12:00 AM	223.2	0.6	2.2
6/14/21 12:30 AM	AX	0.5	2.3
6/14/21 1:00 AM	307.4	AX	5.9
6/14/21 1:30 AM	296.9	2.5	AX
6/14/21 2:00 AM	132.7	88.7	10.4
6/14/21 2:30 AM	156.1	141.9	23.5
6/14/21 3:00 AM	152.0	132.2	44.8
6/14/21 3:30 AM	170.0	40.1	27.5
6/14/21 4:00 AM	249.6	20.1	12.8
6/14/21 4:30 AM	211.0	85.2	14.1
6/14/21 5:00 AM	193.6	159.8	10.7
6/14/21 5:30 AM	253.5	131.5	21.6
6/14/21 6:00 AM	115.8	84.3	52.0
6/14/21 6:30 AM	204.0	28.1	40.0
6/14/21 7:00 AM	81.0	12.1	15.1
6/14/21 7:30 AM	119.4	7.2	9.3
6/14/21 8:00 AM	63.0	19.6	39.1
6/14/21 8:30 AM	39.6	19.4	66.0
6/14/21 9:00 AM	1.7	14.0	53.7
6/14/21 9:30 AM	1.2	11.5	19.3
6/14/21 10:00 AM	3.4	18.9	32.0
6/14/21 10:30 AM	6.3	6.2	BF
6/14/21 11:00 AM	7.7	14.0	BF
6/14/21 11:30 AM	16.6	5.9	4.8
6/14/21 12:00 PM	8.8	13.0	3.6
6/14/21 12:30 PM	9.7	11.2	3.0
6/14/21 1:00 PM	9.8	7.7	2.9
6/14/21 1:30 PM	15.8	10.5	3.7
6/14/21 2:00 PM	14.1	4.2	5.8
6/14/21 2:30 PM	9.7	3.3	6.5
6/14/21 3:00 PM	13.7	7.4	6.7
6/14/21 3:30 PM	17.0	1.9	4.7
6/14/21 4:00 PM	10.2	0.2	2.8
6/14/21 4:30 PM	18.4	0.2	2.5
6/14/21 5:00 PM	1330.0	22.2	2.3
6/14/21 5:30 PM	14.9	56.2	94.5
6/14/21 6:00 PM	74.1	93.5	101.2
6/14/21 6:30 PM	49.3	60.1	64.2
6/14/21 7:00 PM	30.3	27.3	27.2
6/14/21 7:30 PM	55.0	3.7	11.6

June 14, 2021 (567 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/14/21 8:00 PM	33.8	7.1	20.2
6/14/21 8:30 PM	120.3	1.9	58.9
6/14/21 9:00 PM	42.5	0.2	8.4
6/14/21 9:30 PM	138.5	0.2	3.5
6/14/21 10:00 PM	97.0	0.2	8.7
6/14/21 10:30 PM	139.7	0.2	22.4
6/14/21 11:00 PM	90.3	0.2	4.7
6/14/21 11:30 PM	104.7	0.2	34.9

A. Which way is the wind blowing from the facility on June 14, 2021?

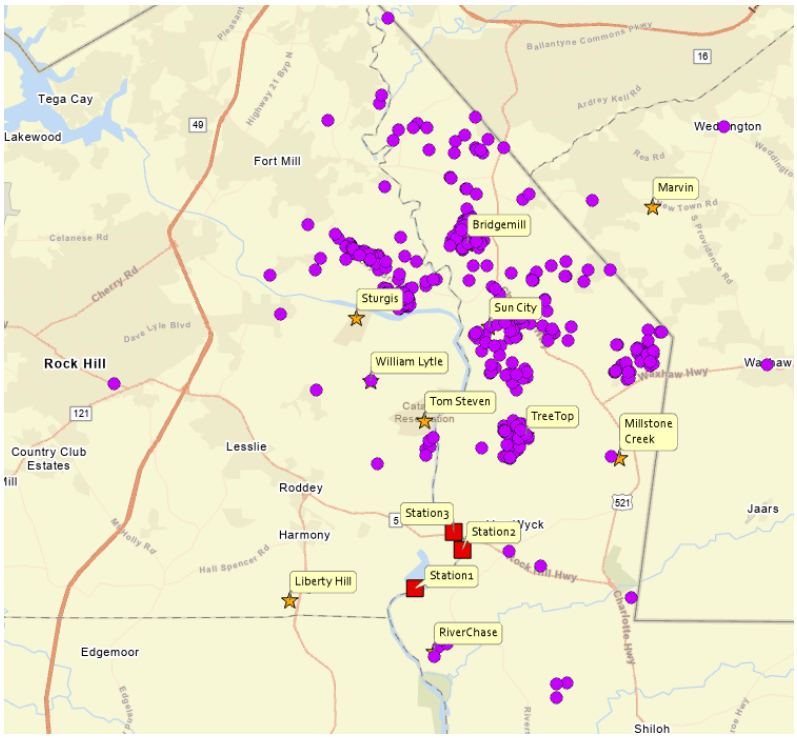
Wind & Speed Direction based on Meteorological data from Station 1 (for Station2 & Station3) – Going North





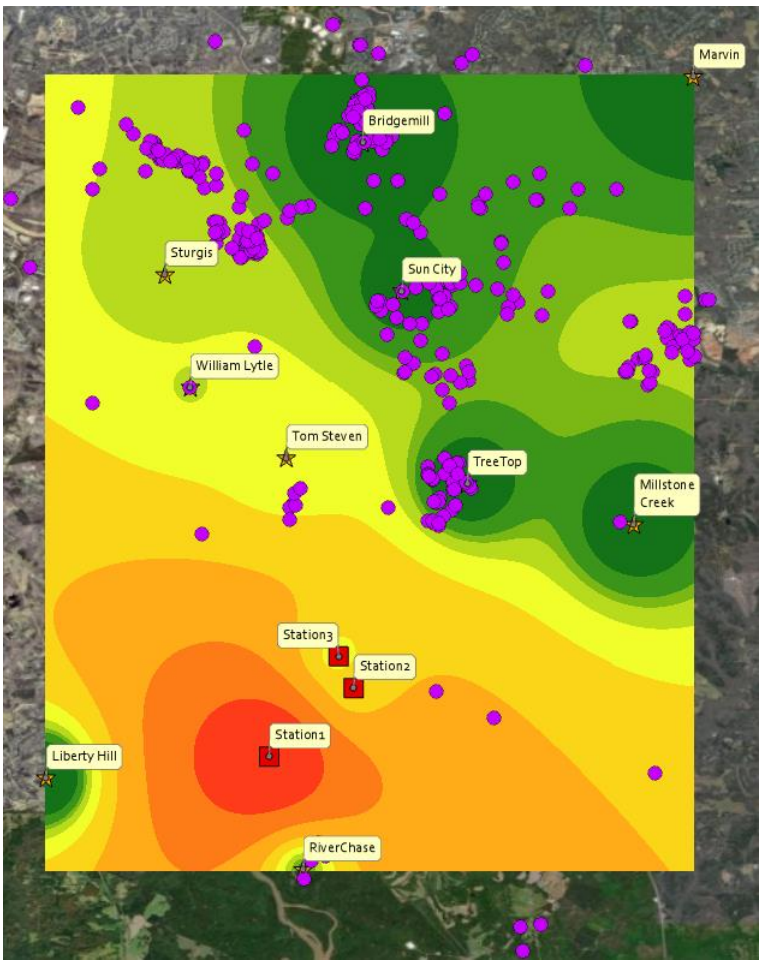
B. Where are the complaints on June 14, 2021?

There were 567 odor complaints with clusters showing mostly near Sun City, Tom Steven and east of TreeTop communities. With the wind direction from the New Indy Facility (Fence Line data) – it shows that majority of the odor complaints went/observed north of the Facility & not south of the Facility.



D. What is the concentration distribution on June 14, 2021?

This concentration density map shows that northern wind direction from the facility has reached sufficiently enough to smell the 1330 ppb in all the communities – even though the highest H2S concentration at the communities do not reflect that.



June 15/2021

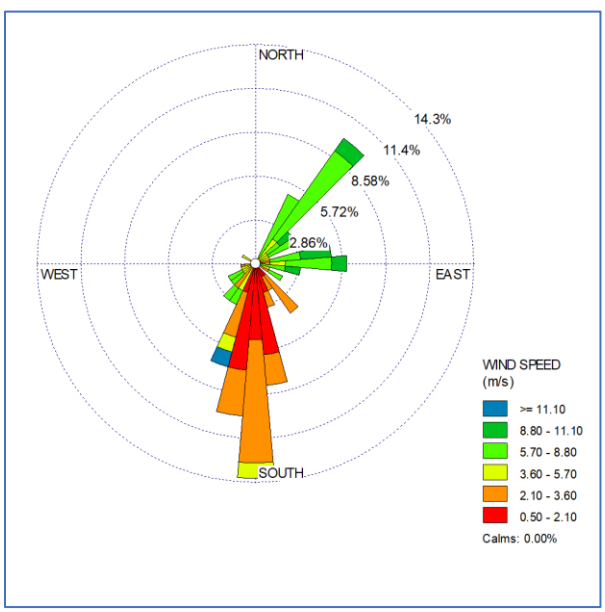
Data:

	Station 1	Station 2	Station 3
Jun 15, 2021 (58 odor Complaints)	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/15/21 12:00 AM	175.3	18.1	33.1
6/15/21 12:30 AM	AX	24.7	27.7
6/15/21 1:00 AM	97.7	AX	25.7
6/15/21 1:30 AM	73.6	23.1	AX
6/15/21 2:00 AM	95.7	9.7	41.6
6/15/21 2:30 AM	270.6	0.5	18.7
6/15/21 3:00 AM	364.5	0.2	5.9
6/15/21 3:30 AM	206.4	0.2	2.1
6/15/21 4:00 AM	102.1	0.2	1.7
6/15/21 4:30 AM	192.7	0.2	1.7
6/15/21 5:00 AM	245.4	0.4	2.2
6/15/21 5:30 AM	113.4	0.5	3.4
6/15/21 6:00 AM	78.9	2.1	5.3
6/15/21 6:30 AM	88.7	6.1	7.1
6/15/21 7:00 AM	89.1	75.7	22.3
6/15/21 7:30 AM	132.1	145.8	39.4
6/15/21 8:00 AM	3.6	131.0	22.2
6/15/21 8:30 AM	2.2	108.2	14.4
6/15/21 9:00 AM	221.7	21.6	3.5
6/15/21 9:30 AM	388.0	0.2	2.3
6/15/21 10:00 AM	AY	0.7	2.1
6/15/21 10:30 AM	AY	0.6	1.8
6/15/21 11:00 AM	464.2	0.2	1.7
6/15/21 11:30 AM	377.3	0.2	1.7
6/15/21 12:00 PM	424.5	0.2	1.8
6/15/21 12:30 PM	443.4	0.2	1.8
6/15/21 1:00 PM	466.9	0.2	1.9
6/15/21 1:30 PM	395.4	0.2	1.8
6/15/21 2:00 PM	522.6	0.2	1.7
6/15/21 2:30 PM	624.7	0.2	1.5
6/15/21 3:00 PM	442.8	0.2	1.4
6/15/21 3:30 PM	489.8	0.2	1.2
6/15/21 4:00 PM	523.0	0.2	1.2
6/15/21 4:30 PM	566.8	0.2	1.1

	Station 1	Station 2	Station 3
Jun 15, 2021 (58 odor Complaints)	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/15/21 5:00 PM	491.0	0.2	0.9
6/15/21 5:30 PM	676.6	0.2	0.9
6/15/21 6:00 PM	674.9	0.2	0.9
6/15/21 6:30 PM	419.0	0.2	0.9
6/15/21 7:00 PM	46.4	0.2	1.0
6/15/21 7:30 PM	69.3	0.2	1.0
6/15/21 8:00 PM	138.0	0.2	1.1
6/15/21 8:30 PM	205.2	0.2	1.0
6/15/21 9:00 PM	397.5	0.2	1.0
6/15/21 9:30 PM	255.3	0.2	1.0
6/15/21 10:00 PM	185.7	0.2	0.8
6/15/21 10:30 PM	215.5	0.2	0.8
6/15/21 11:00 PM	269.7	0.2	1.0
6/15/21 11:30 PM	225.3	0.2	1.0

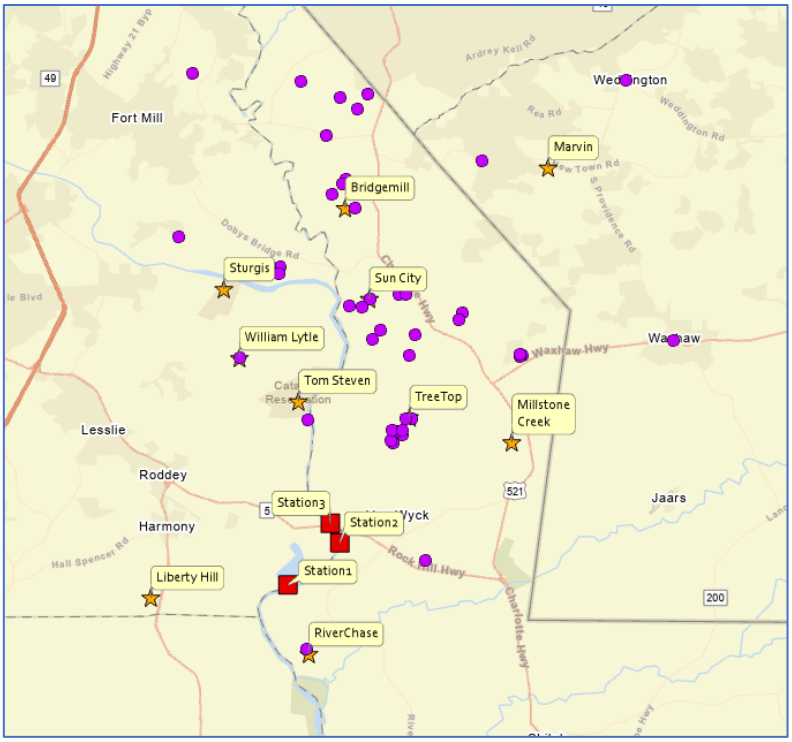
A. Which way is the wind blowing from the facility?

Wind & Speed Direction based on Meteorological data from Station 1 (for Station2 & Station3) – Going North



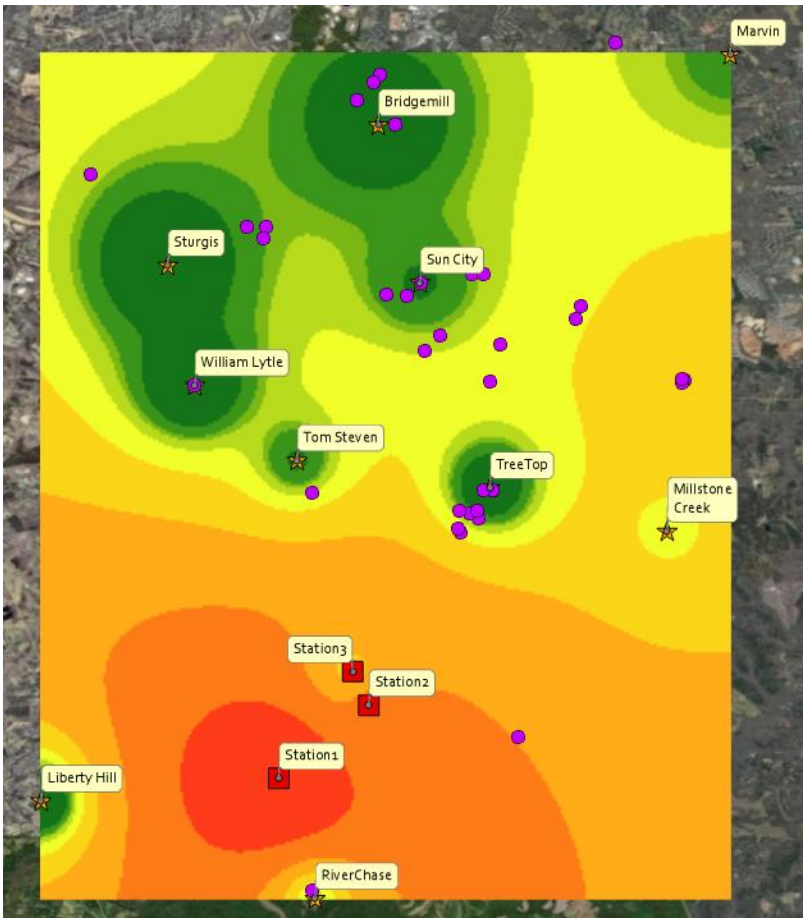
B. Where are the complaints on June 15, 2021?

There were 58 odor complaints. With the wind direction from the New Indy Facility (Fence Line data) – it shows that majority of the odor complaints went/observed north of the Facility & not very much south of the Facility.



C. What is the concentration distribution on June 15, 2021?

This concentration density map shows that northern wind direction from the Facility had caused the H2S concentration to reach the northern communities – especially Tom Steven & TreeTop communities.



June 16/2021

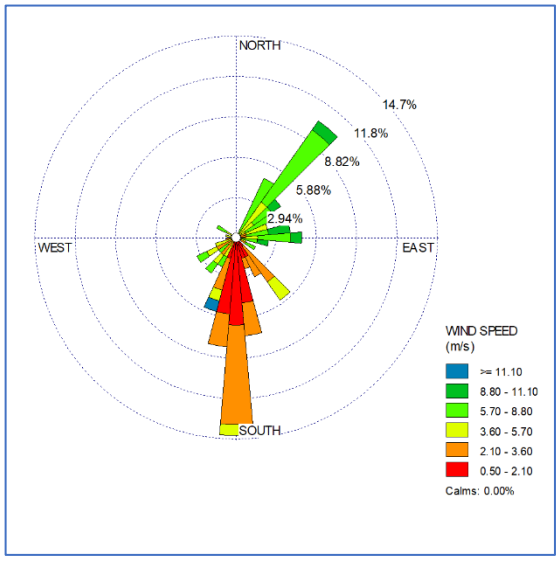
Data:

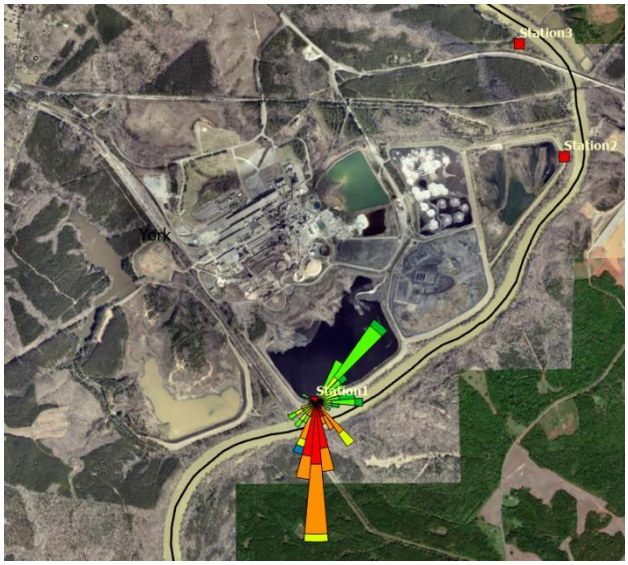
Jun 16, 2021 (4 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/16/21 12:00 AM	242.5	0.2	1.0
6/16/21 12:30 AM	AX	0.2	0.9
6/16/21 1:00 AM	401.8	AX	4.7
6/16/21 1:30 AM	307.2	0.2	AX
6/16/21 2:00 AM	277.3	0.2	1.5
6/16/21 2:30 AM	241.4	0.2	1.2
6/16/21 3:00 AM	406.3	0.2	1.1
6/16/21 3:30 AM	395.3	0.2	1.1
6/16/21 4:00 AM	397.8	0.2	1.0
6/16/21 4:30 AM	318.9	0.2	1.0
6/16/21 5:00 AM	532.9	0.2	0.9
6/16/21 5:30 AM	332.4	0.2	0.9
6/16/21 6:00 AM	414.9	0.2	0.9
6/16/21 6:30 AM	422.9	0.2	0.9
6/16/21 7:00 AM	345.7	0.2	1.1
6/16/21 7:30 AM	252.3	0.2	1.0
6/16/21 8:00 AM	278.4	0.2	1.0
6/16/21 8:30 AM	311.2	0.2	0.9
6/16/21 9:00 AM	204.0	0.2	0.8
6/16/21 9:30 AM	246.4	0.4	0.9
6/16/21 10:00 AM	91.2	0.3	0.9
6/16/21 10:30 AM	110.9	0.6	0.8
6/16/21 11:00 AM	217.8	0.2	1.0
6/16/21 11:30 AM	216.0	0.2	0.9
6/16/21 12:00 PM	39.8	0.2	0.7
6/16/21 12:30 PM	77.1	0.2	0.8
6/16/21 1:00 PM	99.8	0.2	0.6
6/16/21 1:30 PM	53.8	0.2	0.7
6/16/21 2:00 PM	7.3	1.9	0.8
6/16/21 2:30 PM	12.2	1.5	2.2
6/16/21 3:00 PM	35.1	1.3	1.5
6/16/21 3:30 PM	25.0	3.3	3.3
6/16/21 4:00 PM	8.7	2.9	0.9
6/16/21 4:30 PM	31.1	1.5	0.8
6/16/21 5:00 PM	62.7	4.8	0.6
6/16/21 5:30 PM	65.3	3.0	0.6
6/16/21 6:00 PM	124.3	1.7	0.6
6/16/21 6:30 PM	51.3	1.1	0.7
6/16/21 7:00 PM	67.9	0.4	0.8
6/16/21 7:30 PM	373.7	0.2	0.8
6/16/21 8:00 PM	204.6	0.2	0.9

Jun 16, 2021 (4 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/16/21 8:30 PM	374.3	0.4	0.8
6/16/21 9:00 PM	315.1	2.0	0.9
6/16/21 9:30 PM	350.4	9.3	0.9
6/16/21 10:00 PM	330.2	17.0	1.0
6/16/21 10:30 PM	302.5	11.9	1.0
6/16/21 11:00 PM	298.5	18.8	1.6
6/16/21 11:30 PM	306.9	5.4	4.0

A. Which way is the wind blowing on June 16, 2021?

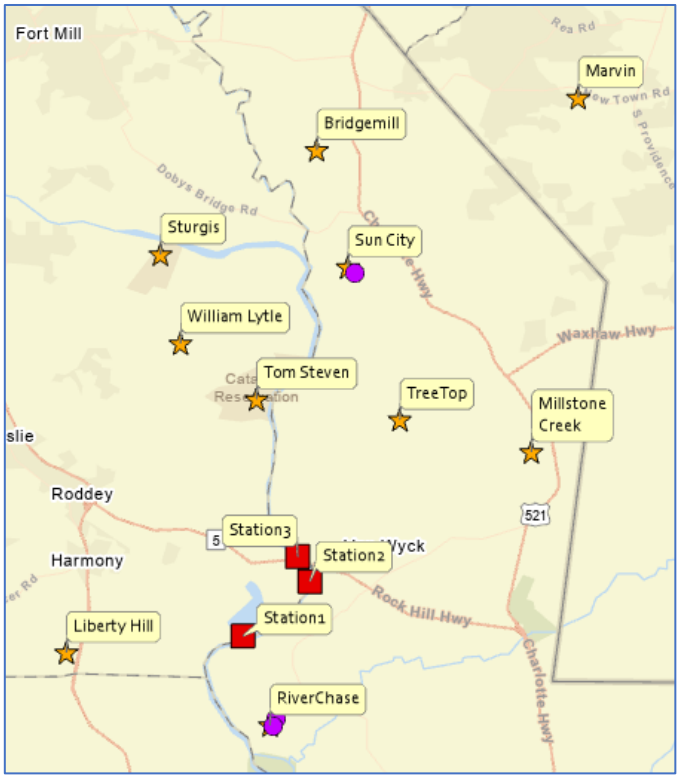
Wind & Speed Direction based on Meteorological data from Station 1 (for Station2 & Station3) – Going North





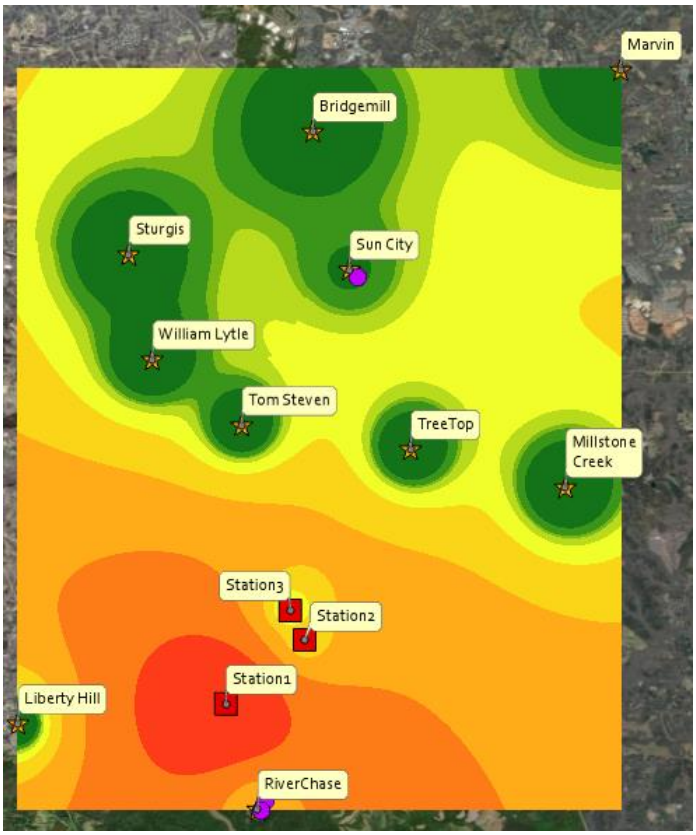
B. Where are the complaints on June 16, 2021?

There were only 4 odor complaints with RiverChase Community, south of the Facility, having more H2S concentration than other communities on this day.



C. What is the concentration distribution on June 16, 2021?

This concentration density map shows that northern wind direction from the Facility had caused the H2S concentration to reach the northern communities – especially Tom Steven community.



June 17/2021

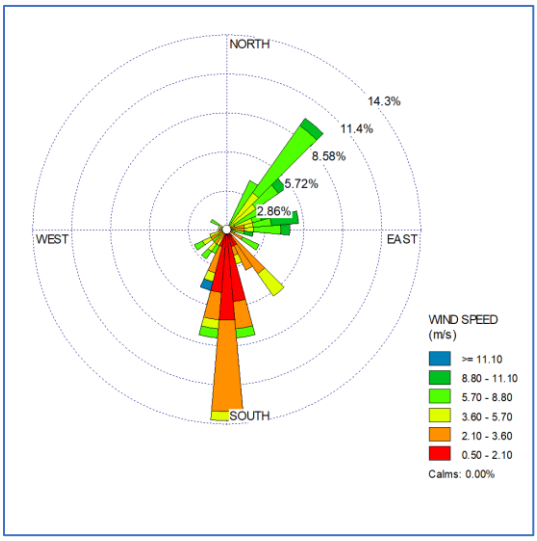
Data:

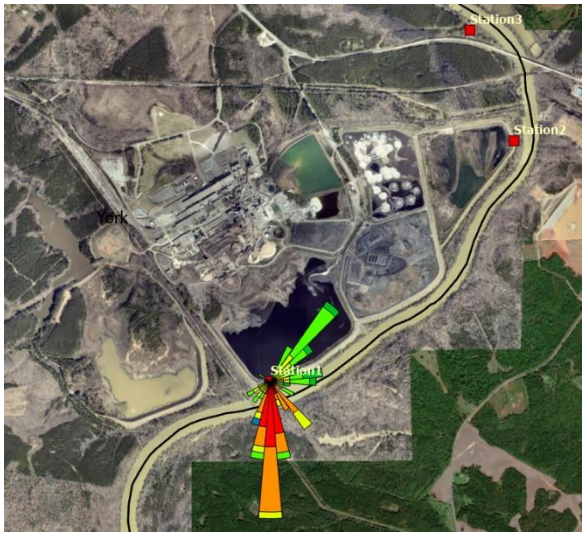
	Station 1	Station 2	Station 3
	H2S	H2S	H2S
Jun 17, 2021 (15 Odor Complaints)	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/17/21 12:00 AM	294.8	10.0	2.3
6/17/21 12:30 AM	AX	5.3	3.2
6/17/21 1:00 AM	225.4	AX	7.9
6/17/21 1:30 AM	288.0	1.7	AX
6/17/21 2:00 AM	191.6	1.0	1.9
6/17/21 2:30 AM	305.8	0.9	1.2
6/17/21 3:00 AM	78.7	0.4	1.0
6/17/21 3:30 AM	390.9	0.2	0.9
6/17/21 4:00 AM	167.5	0.2	0.8
6/17/21 4:30 AM	210.8	0.2	0.8
6/17/21 5:00 AM	255.5	0.2	0.8
6/17/21 5:30 AM	296.4	0.2	0.8
6/17/21 6:00 AM	302.5	0.2	0.8
6/17/21 6:30 AM	372.0	0.2	0.8
6/17/21 7:00 AM	316.2	0.2	0.7
6/17/21 7:30 AM	328.6	0.2	0.7
6/17/21 8:00 AM	277.8	0.2	0.8
6/17/21 8:30 AM	385.7	0.2	0.8
6/17/21 9:00 AM	427.7	0.2	0.7
6/17/21 9:30 AM	410.3	0.4	0.7
6/17/21 10:00 AM	420.4	0.2	0.7
6/17/21 10:30 AM	269.9	0.2	0.6
6/17/21 11:00 AM	190.7	0.2	0.6
6/17/21 11:30 AM	162.9	0.2	0.6
6/17/21 12:00 PM	160.3	0.2	0.6
6/17/21 12:30 PM	128.3	0.2	0.6
6/17/21 1:00 PM	99.4	0.2	0.6
6/17/21 1:30 PM	121.7	0.2	0.6
6/17/21 2:00 PM	93.3	0.2	0.6
6/17/21 2:30 PM	123.0	0.2	0.6
6/17/21 3:00 PM	64.6	0.2	0.6
6/17/21 3:30 PM	151.5	0.2	0.7
6/17/21 4:00 PM	86.5	0.2	0.6
6/17/21 4:30 PM	98.5	0.2	0.5
6/17/21 5:00 PM	165.2	0.2	0.5
6/17/21 5:30 PM	132.2	0.2	0.4
6/17/21 6:00 PM	208.2	0.2	0.3
6/17/21 6:30 PM	115.8	0.2	0.5

	Station 1	Station 2	Station 3
	H2S	H2S	H2S
Jun 17, 2021 (15 Odor Complaints)	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/17/21 7:00 PM	141.9	0.2	0.6
6/17/21 7:30 PM	368.1	0.2	0.7
6/17/21 8:00 PM	229.7	0.2	0.7
6/17/21 8:30 PM	367.8	0.2	0.8
6/17/21 9:00 PM	250.3	1.4	1.2
6/17/21 9:30 PM	295.6	4.5	2.6
6/17/21 10:00 PM	320.5	8.5	2.3
6/17/21 10:30 PM	225.2	8.9	1.7
6/17/21 11:00 PM	255.5	2.1	5.8
6/17/21 11:30 PM	141.8	0.5	11.6

A. Which way is the wind blowing on June 17, 2021?

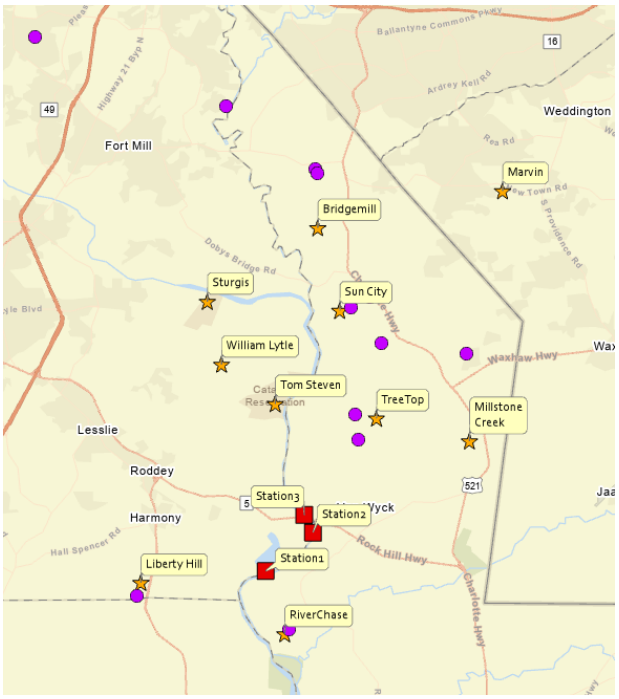
Wind & Speed Direction based on Meteorological data from Station 1 (for Station2 & Station3) – Going North





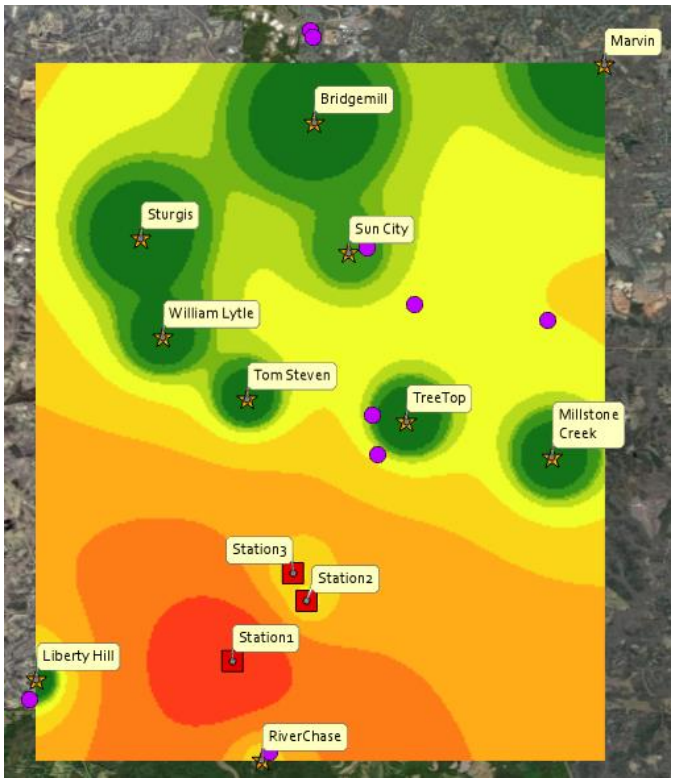
B. Where are the complaints on June 17, 2021?

There were 15 odor complaints.



C. What is the concentration distribution on June 17, 2021?

This concentration density map shows that northern wind direction from the Facility had caused the H2S concentration to reach the northern communities – especially Tom Steven community.



June 18/2021

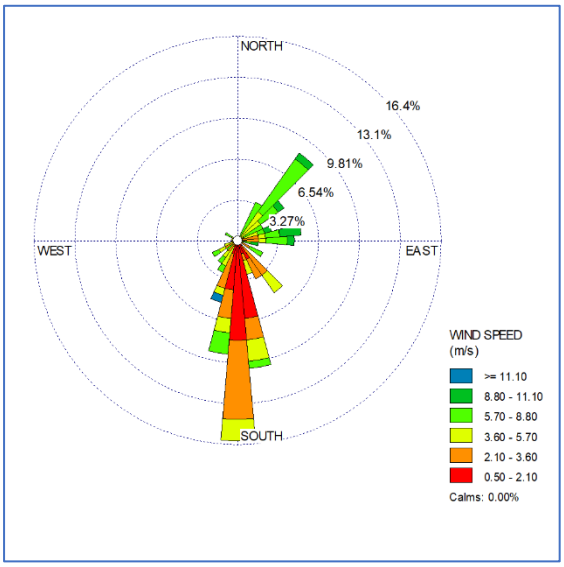
Data:

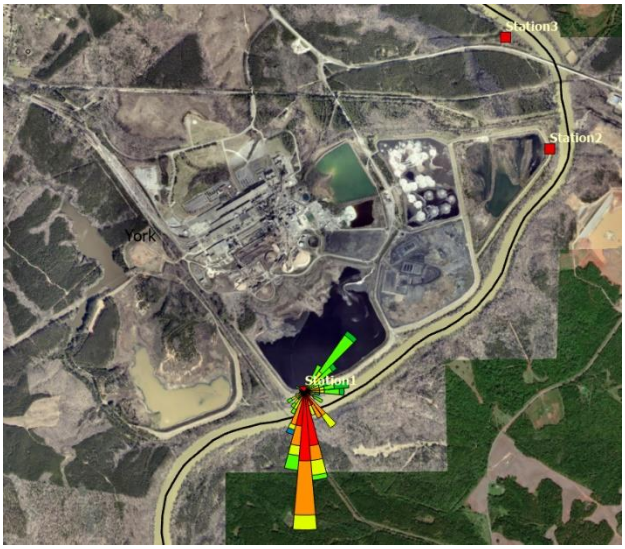
Calendar Day	Station 1	Station 2	Station 3
	H2S	H2S	H2S
Jun 18, 2021	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/18/21 12:00 AM	118.0	0.8	17.4
6/18/21 12:30 AM	AX	5.4	17.3
6/18/21 1:00 AM	107.7	AX	15.3
6/18/21 1:30 AM	126.9	4.4	AX
6/18/21 2:00 AM	208.8	4.5	6.5
6/18/21 2:30 AM	184.4	3.2	6.5
6/18/21 3:00 AM	172.8	4.8	5.9
6/18/21 3:30 AM	178.2	2.2	3.3
6/18/21 4:00 AM	230.2	1.0	4.3
6/18/21 4:30 AM	208.5	2.5	5.8
6/18/21 5:00 AM	262.4	3.1	2.5
6/18/21 5:30 AM	173.7	2.0	2.0
6/18/21 6:00 AM	197.4	1.5	5.6
6/18/21 6:30 AM	291.4	4.4	5.8
6/18/21 7:00 AM	132.8	5.4	11.9
6/18/21 7:30 AM	189.6	5.5	5.4
6/18/21 8:00 AM	233.3	5.1	9.7
6/18/21 8:30 AM	141.8	2.8	4.9
6/18/21 9:00 AM	45.7	26.4	14.7
6/18/21 9:30 AM	33.3	0.5	1.8
6/18/21 10:00 AM	18.0	0.2	0.8
6/18/21 10:30 AM	15.9	0.2	1.0
6/18/21 11:00 AM	17.4	1.2	1.0
6/18/21 11:30 AM	21.5	0.3	1.2
6/18/21 12:00 PM	11.3	1.2	3.3
6/18/21 12:30 PM	9.0	0.6	3.5
6/18/21 1:00 PM	6.6	3.0	5.2
6/18/21 1:30 PM	5.8	0.9	6.5
6/18/21 2:00 PM	10.3	0.6	6.7
6/18/21 2:30 PM	12.4	3.4	5.8
6/18/21 3:00 PM	20.6	0.2	2.5
6/18/21 3:30 PM	7.4	0.2	0.9
6/18/21 4:00 PM	10.7	0.2	1.4
6/18/21 4:30 PM	12.5	0.2	1.0
6/18/21 5:00 PM	29.8	0.2	0.7
6/18/21 5:30 PM	36.1	0.2	0.7

Calendar Day	Station 1	Station 2	Station 3
	H2S	H2S	H2S
Jun 18, 2021	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/18/21 6:00 PM	55.9	0.2	0.6
6/18/21 6:30 PM	75.3	0.2	0.7
6/18/21 7:00 PM	99.0	0.2	1.5
6/18/21 7:30 PM	202.4	0.2	1.5
6/18/21 8:00 PM	215.3	0.8	7.5
6/18/21 8:30 PM	200.8	7.8	49.9
6/18/21 9:00 PM	156.4	6.4	49.9
6/18/21 9:30 PM	135.1	1.3	22.8
6/18/21 10:00 PM	10.5	31.9	50.7
6/18/21 10:30 PM	14.4	14.6	77.2
6/18/21 11:00 PM	19.9	19.0	75.1
6/18/21 11:30 PM	46.2	14.4	71.7

A. Which way is the wind blowing from the facility?

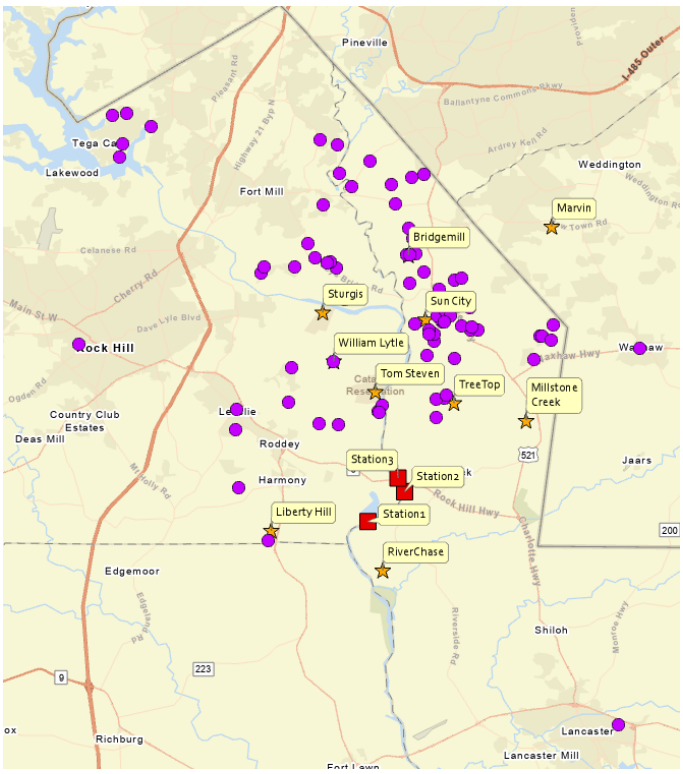
Wind & Speed Direction based on Meteorological data from Station 1 (for Station2 & Station3) – Going North





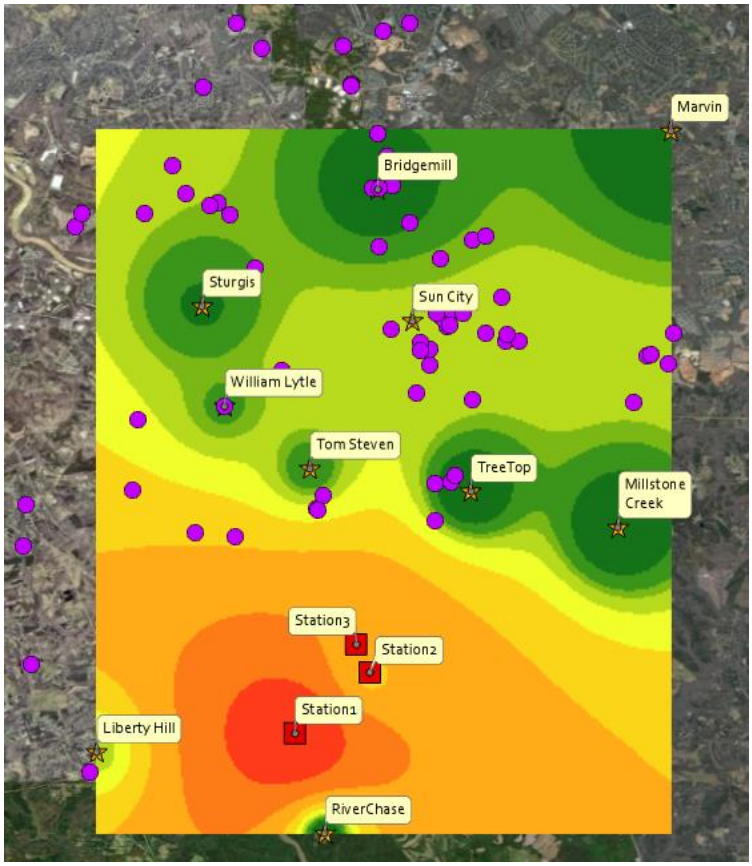
B. **Where are the complaints on June 108, 2021?**

There were 108 odor complaints with clusters showing mostly near Sun City, Tom Steven and east of Sun City communities. With the wind direction from the New Indy Facility (Fence Line data) – it shows that majority of the odor complaints went/observed north of the Facility & not south of the Facility.



C. **What is the concentration distribution on June 18, 2021?**

This concentration density map shows that northern wind direction from the Facility had caused the H2S concentration to reach the northern communities – especially Tom Steven community.



June 19/2021

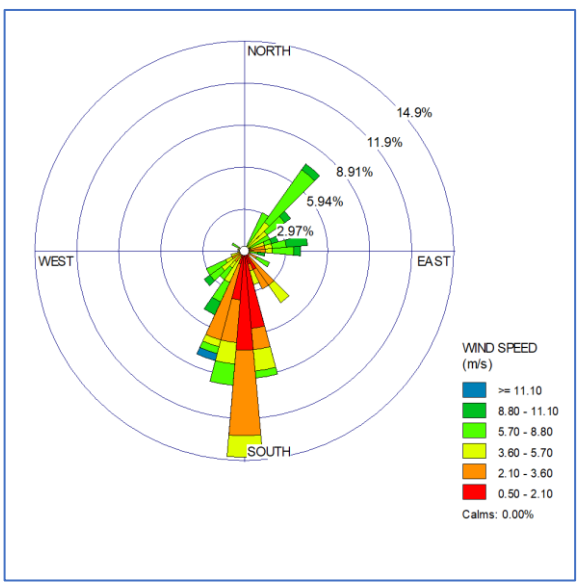
Data:

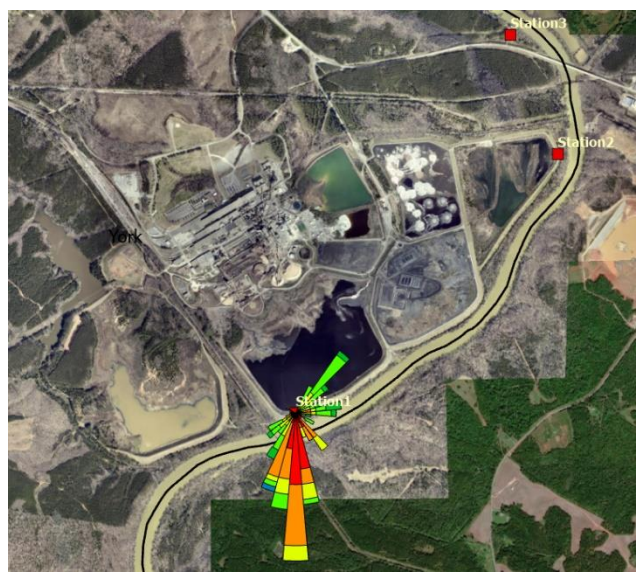
Jun 19, 2021 (56 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/19/21 12:00 AM	82.4	6.4	47.2
6/19/21 12:30 AM	AX	3.6	38.0
6/19/21 1:00 AM	123.9	AX	14.8
6/19/21 1:30 AM	120.4	0.4	AX
6/19/21 2:00 AM	272.2	0.2	17.4
6/19/21 2:30 AM	92.5	0.2	11.5
6/19/21 3:00 AM	54.8	0.2	13.9
6/19/21 3:30 AM	78.4	1.2	26.8
6/19/21 4:00 AM	100.0	35.4	31.3
6/19/21 4:30 AM	82.1	30.8	29.7
6/19/21 5:00 AM	49.8	3.7	24.3
6/19/21 5:30 AM	8.1	0.3	15.2
6/19/21 6:00 AM	61.3	5.5	14.1
6/19/21 6:30 AM	26.4	0.5	22.5
6/19/21 7:00 AM	21.4	5.1	32.7
6/19/21 7:30 AM	16.4	4.6	28.0
6/19/21 8:00 AM	3.0	20.0	23.0
6/19/21 8:30 AM	1.3	5.8	17.3
6/19/21 9:00 AM	1.1	7.8	17.9
6/19/21 9:30 AM	1.3	12.9	3.5
6/19/21 10:00 AM	1.5	9.9	1.6
6/19/21 10:30 AM	2.2	8.2	1.4
6/19/21 11:00 AM	1.5	5.5	1.4
6/19/21 11:30 AM	3.6	11.0	1.3
6/19/21 12:00 PM	1.8	14.5	1.6
6/19/21 12:30 PM	1.5	13.6	2.4
6/19/21 1:00 PM	1.4	12.6	1.4
6/19/21 1:30 PM	2.4	7.7	1.3
6/19/21 2:00 PM	1.1	18.8	6.7
6/19/21 2:30 PM	2.8	22.7	20.6
6/19/21 3:00 PM	3.7	7.3	41.5
6/19/21 3:30 PM	5.3	4.5	59.8
6/19/21 4:00 PM	4.3	31.1	33.7
6/19/21 4:30 PM	4.5	3.6	36.5
6/19/21 5:00 PM	4.2	5.3	34.9

Jun 19, 2021 (56 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/19/21 5:30 PM	1.8	20.2	24.1
6/19/21 6:00 PM	11.9	20.6	8.0
6/19/21 6:30 PM	16.7	22.5	23.9
6/19/21 7:00 PM	9.0	13.0	30.6
6/19/21 7:30 PM	12.5	10.3	36.3
6/19/21 8:00 PM	6.3	9.9	22.6
6/19/21 8:30 PM	6.9	31.6	14.1
6/19/21 9:00 PM	3.3	19.6	10.1
6/19/21 9:30 PM	17.8	4.0	1.3
6/19/21 10:00 PM	45.0	18.9	1.1
6/19/21 10:30 PM	17.7	31.9	1.3
6/19/21 11:00 PM	22.1	20.5	2.0
6/19/21 11:30 PM	45.2	5.4	17.9

A. Which way is the wind blowing on June 19, 2021?

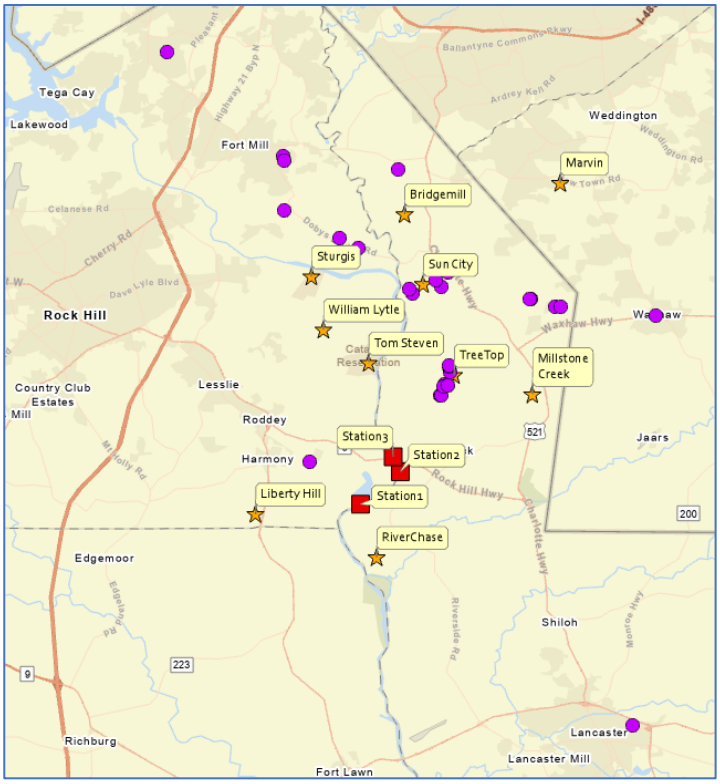
Wind & Speed Direction based on Meteorological data from Station 1 (for Station2 & Station3) – Going North.





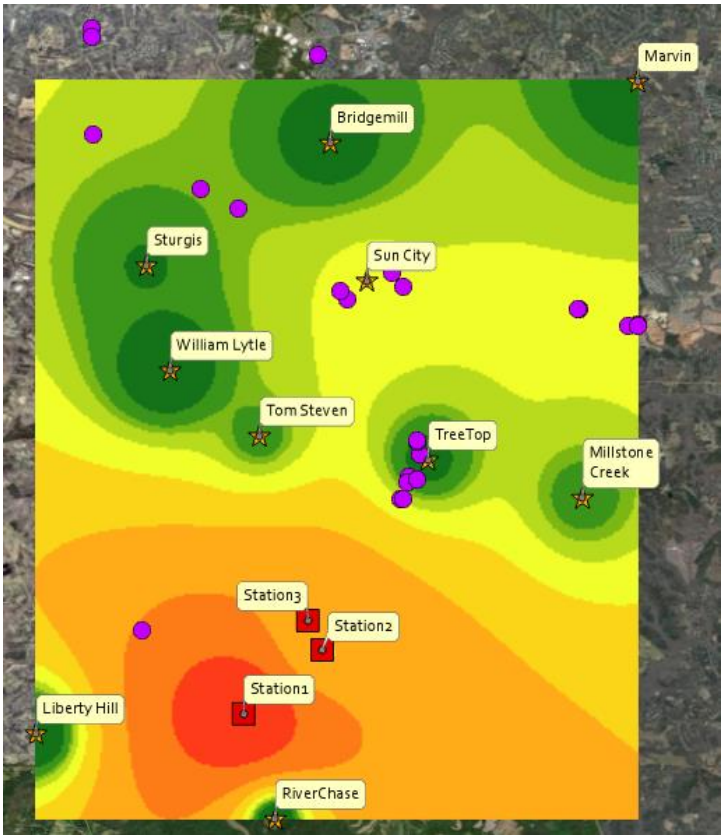
B. **Where are the complaints on June 19, 2021?**

There were 56 odor complaints.



C. What is the concentration distribution on June 19, 2021?

This concentration density map shows that northern wind direction from the Facility had caused the H2S concentration to reach the northern communities – especially TreeTop community.



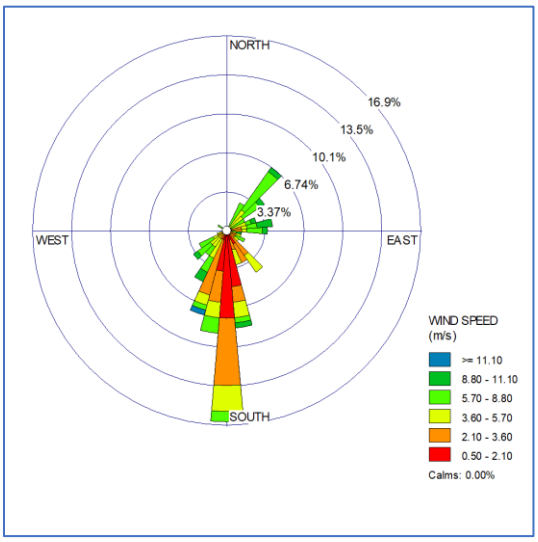
June 20/2021

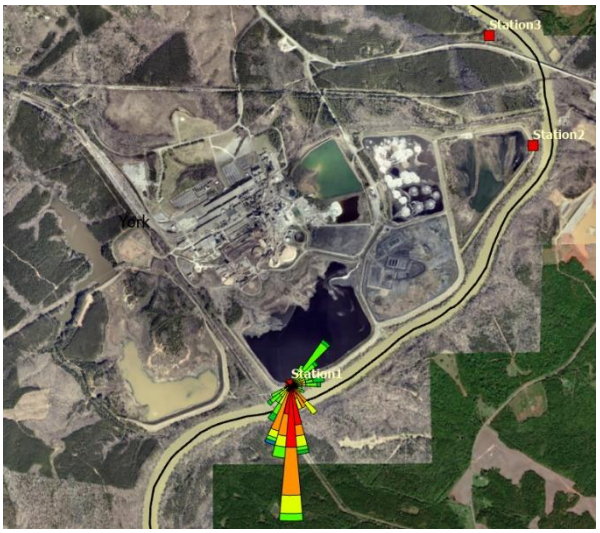
Data:

Jun 20, 2021 (61 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/20/21 12:00 AM	60.1	0.2	10.2
6/20/21 12:30 AM	BF	0.2	3.5
6/20/21 1:00 AM	BF	BF	8.9
6/20/21 1:30 AM	39.3	BF	BF
6/20/21 2:00 AM	36.8	2.8	BF
6/20/21 2:30 AM	26.8	0.2	2.4
6/20/21 3:00 AM	44.2	0.2	1.5
6/20/21 3:30 AM	35.6	0.2	11.9
6/20/21 4:00 AM	8.6	0.2	1.7
6/20/21 4:30 AM	366.4	0.2	1.1
6/20/21 5:00 AM	812.0	0.2	1.1
6/20/21 5:30 AM	1024.0	0.2	1.0
6/20/21 6:00 AM	397.0	0.2	1.0
6/20/21 6:30 AM	21.0	1.7	1.3
6/20/21 7:00 AM	13.4	2.7	2.7
6/20/21 7:30 AM	10.1	0.5	2.2
6/20/21 8:00 AM	12.6	0.2	1.5
6/20/21 8:30 AM	11.5	0.4	12.6
6/20/21 9:00 AM	16.1	0.4	14.5
6/20/21 9:30 AM	12.3	0.2	11.2
6/20/21 10:00 AM	17.5	0.2	7.6
6/20/21 10:30 AM	20.4	0.2	2.2
6/20/21 11:00 AM	15.9	0.2	1.7
6/20/21 11:30 AM	34.5	10.1	21.2
6/20/21 12:00 PM	150.9	48.5	9.3
6/20/21 12:30 PM	8.8	8.9	2.9
6/20/21 1:00 PM	9.4	7.6	1.3
6/20/21 1:30 PM	41.5	7.3	4.8
6/20/21 2:00 PM	34.5	23.4	40.2
6/20/21 2:30 PM	31.5	0.2	26.1
6/20/21 3:00 PM	61.6	0.2	1.6
6/20/21 3:30 PM	17.1	0.2	1.2
6/20/21 4:00 PM	2.9	0.2	1.4
6/20/21 4:30 PM	8.1	0.2	1.3
6/20/21 5:00 PM	37.6	0.2	1.2
6/20/21 5:30 PM	31.2	0.2	1.6
6/20/21 6:00 PM	12.0	0.2	1.5
6/20/21 6:30 PM	4.3	0.2	1.4

Jun 20, 2021 (61 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/20/21 7:00 PM	3.4	0.2	1.3
6/20/21 7:30 PM	20.8	0.2	1.1
6/20/21 8:00 PM	1.1	0.2	1.0
6/20/21 8:30 PM	21.8	0.2	1.5
6/20/21 9:00 PM	41.3	0.2	1.6
6/20/21 9:30 PM	97.0	0.2	1.6
6/20/21 10:00 PM	22.4	0.2	1.5
6/20/21 10:30 PM	47.0	0.9	1.4
6/20/21 11:00 PM	8.4	32.4	4.5
6/20/21 11:30 PM	22.2	52.4	4.5

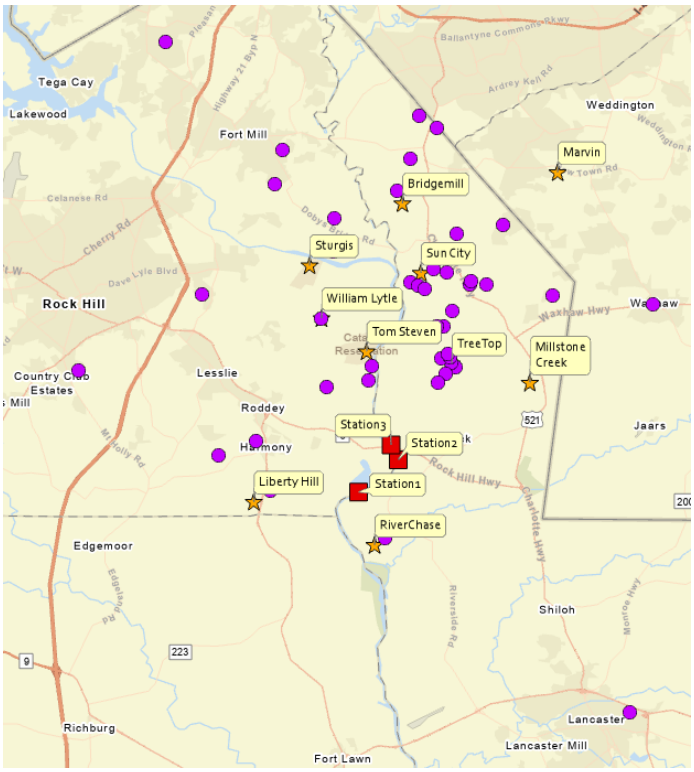
A. **Which way is the wind blowing on June 20, 2021?** Meteorological data from Station 1 (for Station2 & Station3) – Going North





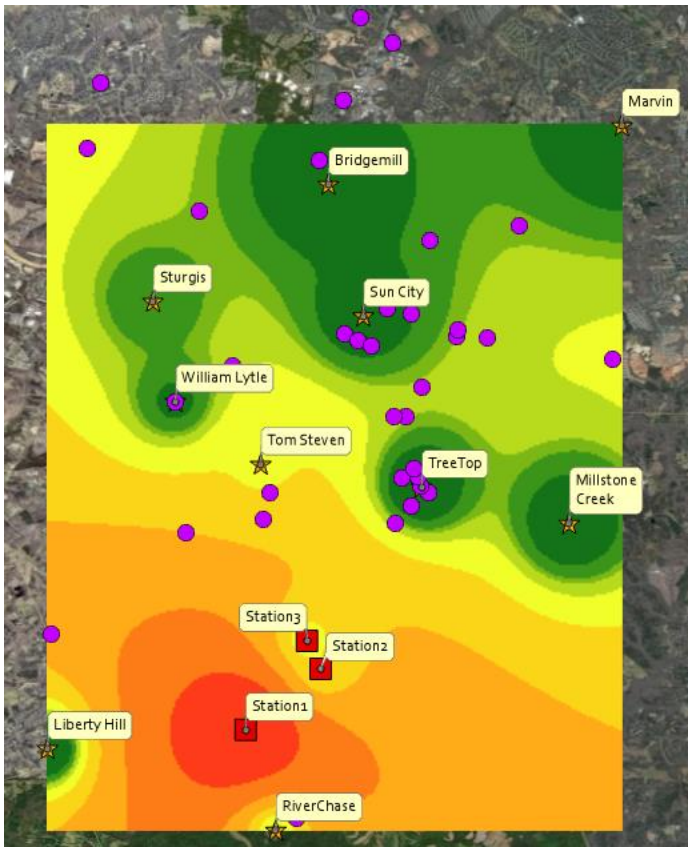
B. Where are the complaints June 20, 2021?

There were 61 odor complaints.



C. What is the concentration distribution on June 20, 2021?

This concentration density map shows that northern wind direction from the Facility had caused the H2S concentration to reach the northern communities – especially Tom Steven community.



June 21/2021

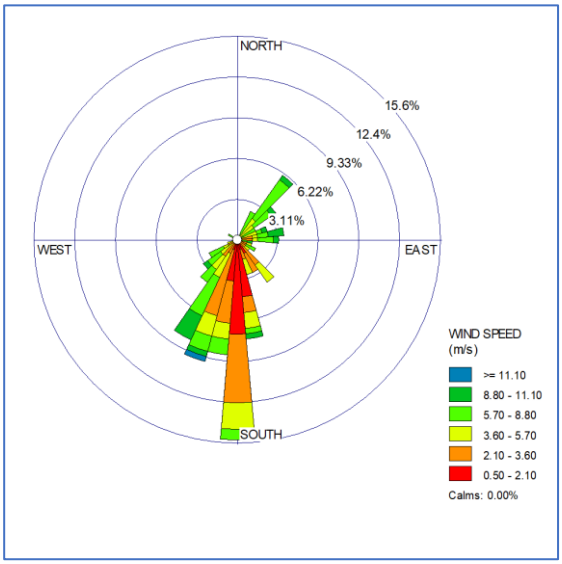
Data:

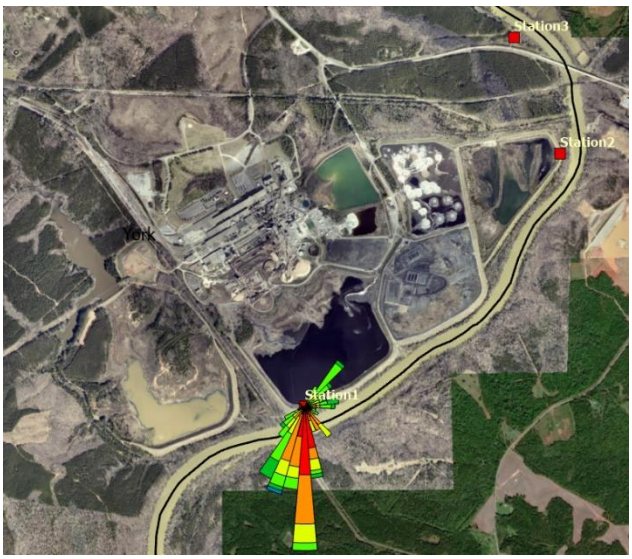
Jun 21, 2021 (64 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/21/21 12:00 AM	27.1	22.7	4.4
6/21/21 12:30 AM	AX	18.7	4.4
6/21/21 1:00 AM	41.1	AX	4.8
6/21/21 1:30 AM	38.3	28.9	AS
6/21/21 2:00 AM	45.7	5.5	AN
6/21/21 2:30 AM	68.2	0.6	AN
6/21/21 3:00 AM	43.3	0.2	AN
6/21/21 3:30 AM	18.4	4.7	AN
6/21/21 4:00 AM	23.6	7.3	AN
6/21/21 4:30 AM	20.7	11.9	AN
6/21/21 5:00 AM	22.1	21.3	AN
6/21/21 5:30 AM	29.5	8.6	AN
6/21/21 6:00 AM	21.3	13.0	AN
6/21/21 6:30 AM	43.5	17.8	AN
6/21/21 7:00 AM	37.0	21.5	AN
6/21/21 7:30 AM	11.1	13.7	AN
6/21/21 8:00 AM	26.0	12.2	AN
6/21/21 8:30 AM	28.0	16.3	AN
6/21/21 9:00 AM	22.6	11.5	AN
6/21/21 9:30 AM	7.0	7.2	AN
6/21/21 10:00 AM	9.3	6.1	AN
6/21/21 10:30 AM	17.6	2.1	AN
6/21/21 11:00 AM	24.4	1.6	AN
6/21/21 11:30 AM	18.4	4.5	AN
6/21/21 12:00 PM	17.2	8.2	AN
6/21/21 12:30 PM	16.0	11.9	AN
6/21/21 1:00 PM	10.4	13.9	AN
6/21/21 1:30 PM	9.0	14.3	AN
6/21/21 2:00 PM	23.9	3.0	AN
6/21/21 2:30 PM	11.7	13.0	AN
6/21/21 3:00 PM	11.6	28.0	AN
6/21/21 3:30 PM	24.2	2.4	AN
6/21/21 4:00 PM	16.0	6.4	AN
6/21/21 4:30 PM	15.2	10.3	AN

Jun 21, 2021 (64 Odor Complaints)	Station 1	Station 2	Station 3
	H2S	H2S	H2S
	30min Avg H2S Conc.	30min Avg H2S Conc.	30min Avg H2S Conc.
Units	ppb	ppb	ppb
6/21/21 5:00 PM	AY	8.6	AN
6/21/21 5:30 PM	10.6	19.3	AN
6/21/21 6:00 PM	27.8	4.0	AN
6/21/21 6:30 PM	36.2	0.2	AN
6/21/21 7:00 PM	43.4	0.2	AN
6/21/21 7:30 PM	42.4	0.2	AN
6/21/21 8:00 PM	14.3	26.4	AN
6/21/21 8:30 PM	20.6	14.1	AN
6/21/21 9:00 PM	59.5	22.3	AN
6/21/21 9:30 PM	10.2	23.6	AN
6/21/21 10:00 PM	13.9	22.4	AN
6/21/21 10:30 PM	31.0	54.2	AN
6/21/21 11:00 PM	19.7	50.8	AN
6/21/21 11:30 PM	14.9	55.5	AN

A. Which way is the wind blowing from the facility on June 21, 2021?

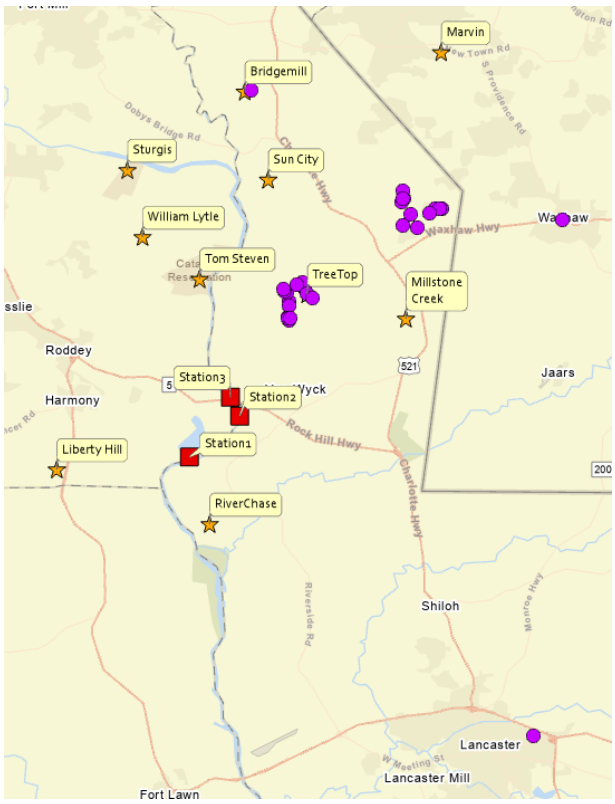
Wind & Speed Direction based on Meteorological data from Station 1 (for Station2 & Station3) – Going North





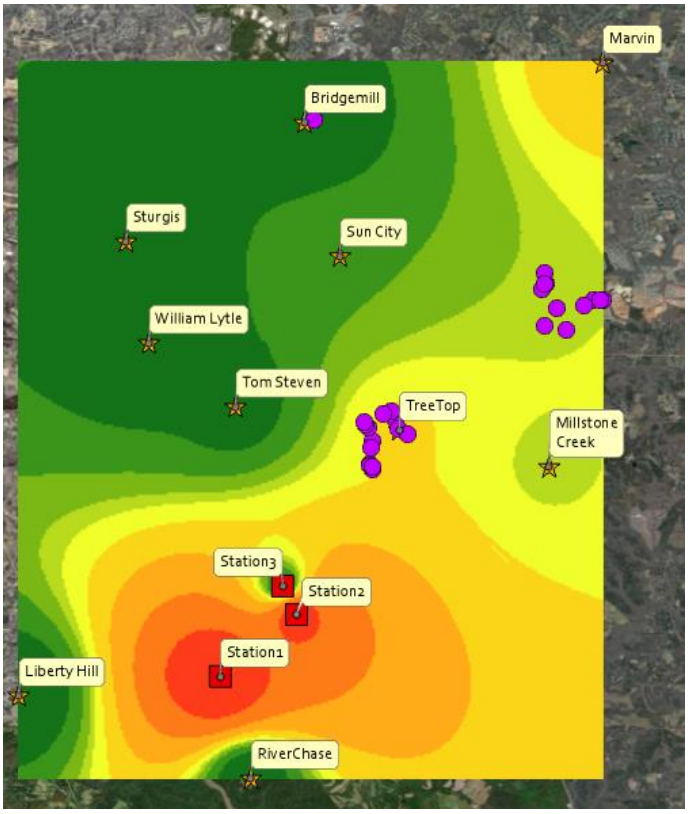
B. Where are the complaints on June 21, 2021?

There were 64 odor complaints with clusters showing mostly near TreeTop and northeast of TreeTop Communities.

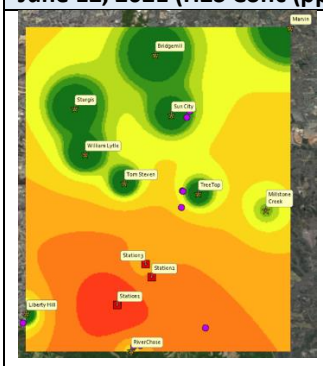


C. What is the concentration distribution on June 21, 2021?

This concentration density map shows that northern wind direction from the Facility had caused the H2S concentration to reach the northern communities – especially TreeTop.

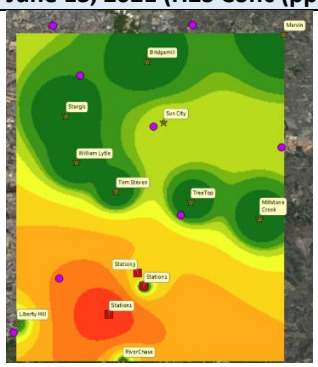


June 12, 2021 (H2S Conc (ppb))



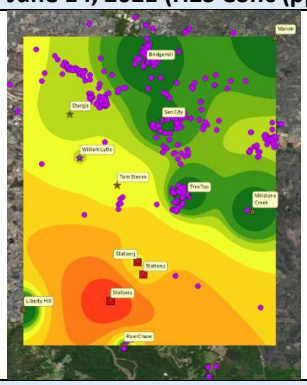
Odor Complaints = 21

June 13, 2021 (H2S Conc (ppb))



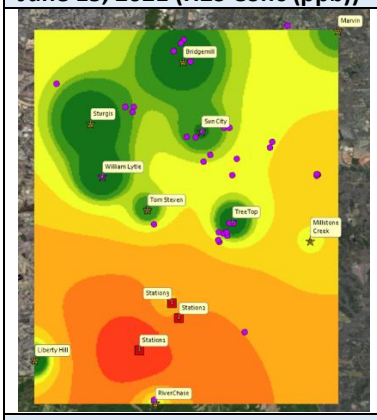
Odor Complaints = 11

June 14, 2021 (H2S Conc (ppb))



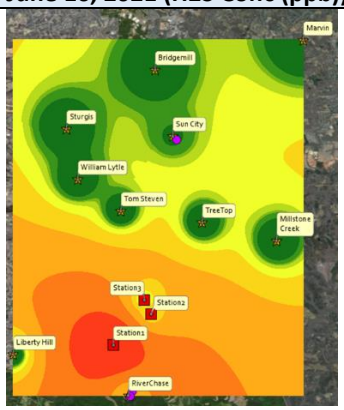
Odor Complaints = 567

June 15, 2021 (H2S Conc (ppb))



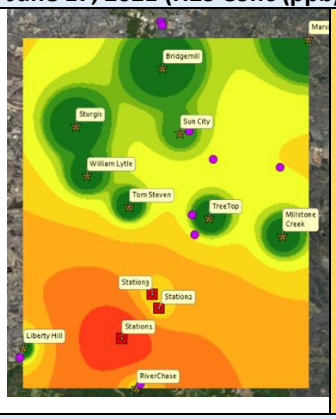
Odor Complaints = 58

June 16, 2021 (H2S Conc (ppb))



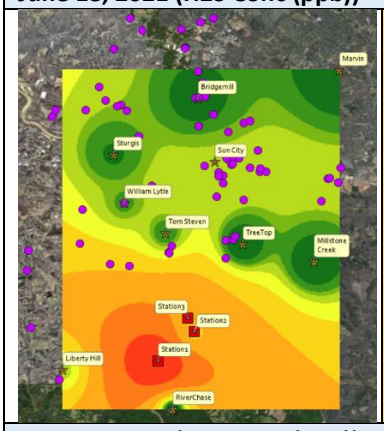
Odor Complaints = 4

June 17, 2021 (H2S Conc (ppb))



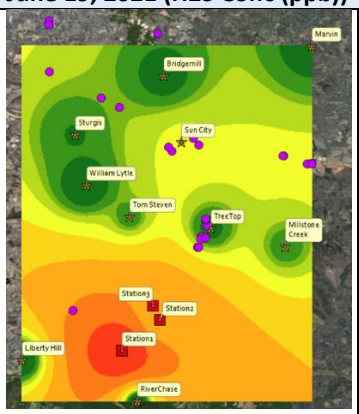
Odor Complaints = 15

June 18, 2021 (H2S Conc (ppb))



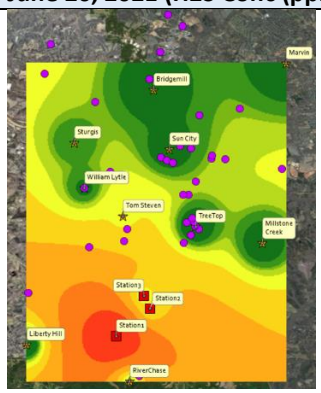
Odor Complaints = 108

June 19, 2021 (H2S Conc (ppb))



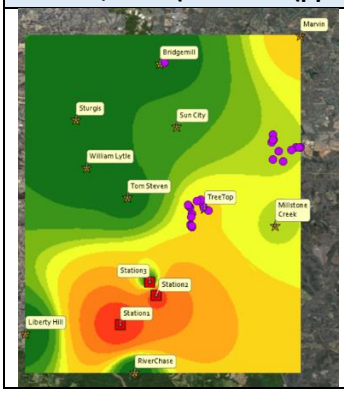
Odor Complaints = 56

June 20, 2021 (H2S Conc (ppb))



Odor Complaints = 61

June 21, 2021 (H2S Conc (ppb))



Odor Complaints = 64

Highest H2S Conc for the Day

Facility	Station1	Station2	Station3
6/12	675	107	38
6/13	568	1	45
6/14	1330	160	101
6/15	677	146	42
6/16	533	19	5
6/17	528	10	12
6/18	291	32	77
6/19	272	35	60
6/20	1024	52	40
6/21	68	56	5

Density Maps:

- (Highest H2S concentration for the day in red areas)
- (Lowest in green areas)

Number of Odor Complaints:
As reported daily to SCDHEC

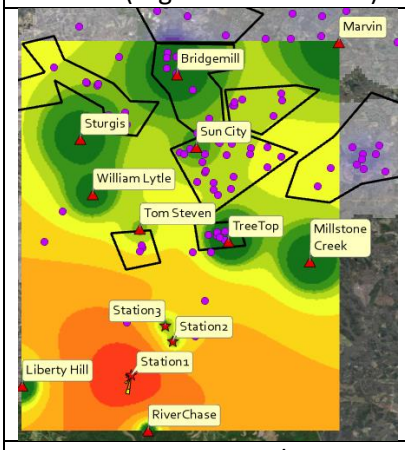
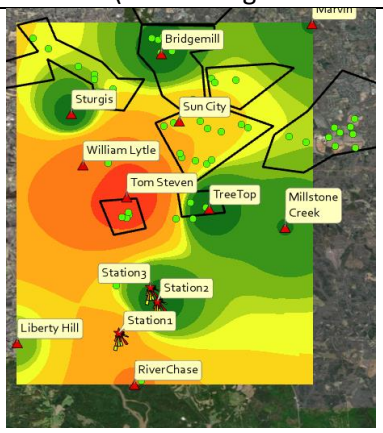
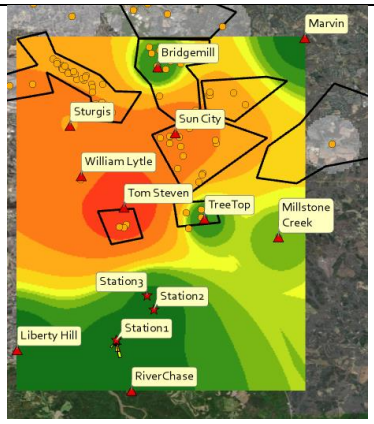
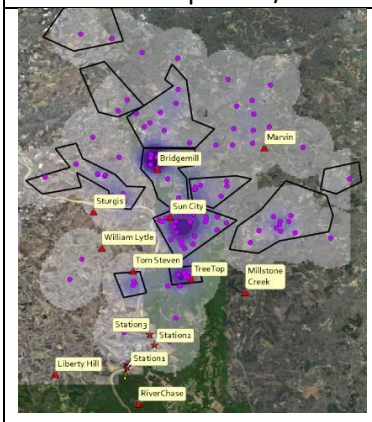
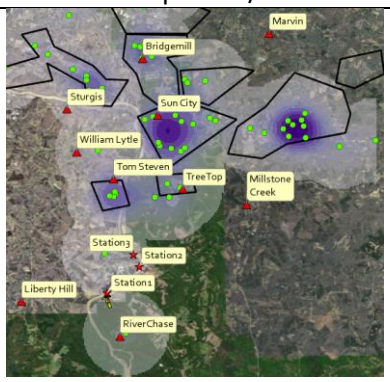
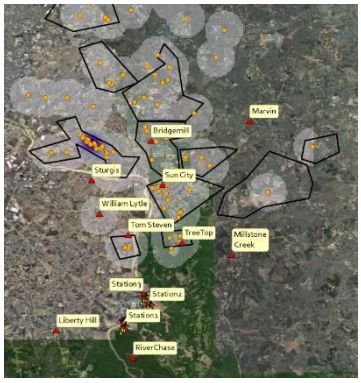
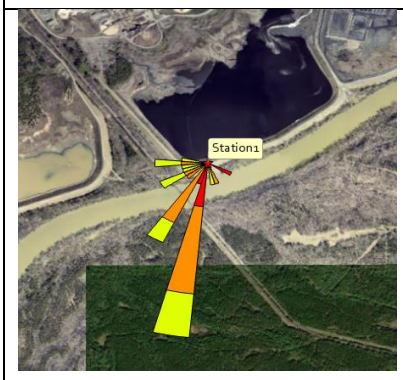
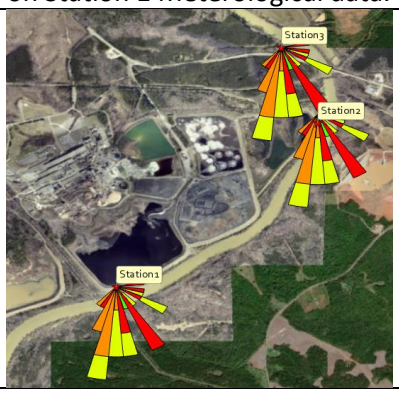
Analysis

Previous Observation (June 4 – 6, 2021)

On June 4, H2S concentration from the New Indy Facility peaked and large, several community wide odor complaints were reported. On June 5, even though the H2S concentrations began to lower at the Facility (fencelines), the northern wind direction sent the H2S concentration to increase in the northern communities but was not wide- spread to all the communities. Then, on June 6, even though the H2S concentrations at the Facility reduced, the northern wind direction from the Facility had caused the H2S concentration to go North and spread to several more communities with increased number of odor complaints.

Location	Date	Max	Date	Max	Date	Max
Station1	6/4/2021	1202.00	6/5/2021	7.34	6/6/2021	1.22
Station2	6/4/2021	22.56	6/5/2021	1.01	6/6/2021	0.61
Station3	6/4/2021	22.47	6/5/2021	3.08	6/6/2021	1.96
Sturgis	6/4/2021	8.00	6/5/2021	2.00	6/6/2021	7.00
William Lytle	6/4/2021	11.00	6/5/2021	10.00	6/6/2021	11.00
TreeTop	6/4/2021	1.00	6/5/2021	1.00	6/6/2021	2.00
Marvin	6/4/2021	8.00	6/5/2021	3.00	6/6/2021	1.00
Sun City	6/4/2021	25.00	6/5/2021	6.00	6/6/2021	10.00
Millstone Creek	6/4/2021	5.00	6/5/2021	3.00	6/6/2021	3.00
Bridgemill	6/4/2021	8.00	6/5/2021	2.00	6/6/2021	2.00
RiverChase	6/4/2021	5.00	6/5/2021	9.00	6/6/2021	0.00
Liberty Hill	6/4/2021	0.00	6/5/2021	4.00	6/6/2021	0.00
Tom Steven	6/4/2021	28.00	44352	22.00	6/6/2021	21.00
Total Complaints	160		76		178	

Summary of previous H2S odor observations in communities.

June 4, 2021	June 5, 2021	June 6, 2021
H2S Con (Highest in red areas)	H2S Con (Lowest in green areas)	H2S Concentration
		
160 Odor complaints / clusters	75 Odor complaints / clusters	178 Odor complaints / clusters
		
WindRose for the day (North)	All 3 Fenceline Stations based on Station 1 Meterological data.	WindRose at Fenceline
		

Current Observation (June 12-21, 2021)

Several additional data were analyzed because of several exceedances were observed on 6/12 (675 ppb), 6/14 (1330 ppb), 6/15 (624.7ppb, 676.6ppb, 674.9ppb) and 6/20 (812ppb, 1024ppb). This report summarizes all the data to show the locations of the facility fencelines & communities where H2S data was collected. Also, the odor complaints that were reported by the public was analyzed.

The data does show that the number of complaints increased on days of H2S exceedances. This data is based on the daily exceedance level of 600ppb. The concentration density maps show that H2S concentrations have not been as high as it was observed

On the H2S monitoring reports – several abbreviations have been used.

AQS Null Data Codes	
Qualifier Code	Item Description
AB	TECHNICIAN UNAVAILABLE
AC	CONSTRUCTION/REPAIRS IN AREA
AD	SHELTER STORM DAMAGE
AE	SHELTER TEMPERATURE OUTSIDE LIMITS
AI	INSUFFICIENT DATA (CAN'T CALCULATE)
AM	MISCELLANEOUS VOID
AN	MACHINE MALFUNCTION
AO	BAD WEATHER
AP	VANDALISM
AS	POOR QUALITY ASSURANCE RESULTS
AT	CALIBRATION
AU	MONITORING WAIVED
AV	POWER FAILURE (POWR)
AW	WILDLIFE DAMAGE
AX	PRECISION CHECK (PREC)
AY	Q C CONTROL POINTS (ZERO/SPAN)
AZ	Q C AUDIT (AUDT)
BA	MAINTENANCE/ROUTINE REPAIRS
BB	UNABLE TO REACH SITE
BC	MULTI-POINT CALIBRATION
BD	AUTO CALIBRATION
BE	BUILDING/SITE REPAIR
BF	PRECISION/ZERO/SPAN
BJ	OPERATOR ERROR
BK	SITE COMPUTER/DATA LOGGER DOWN