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ENVIRONMENT

Subject:
January 2015 – December 2016 System Status Report
Soil Vapor Recovery System
United Stellar Industries Property
131 Sunnyside Boulevard Site, Plainview, New York

Date:
April 12, 2017

Contact:
Steven M. Feldman

Phone:
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Email:
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Our ref:
NY001422.0004.00005

Dear Ms. Eigenbrodt:

ARCADIS of New York, Inc. (Arcadis) has prepared this system status report for the Vapor Recovery System (VRS), on behalf of 131 Sunnyside, LLC (Sunnyside), at the United Stellar Industries Property located at 131 Sunnyside Blvd. in Plainview, New York. The following report provides documentation of all monitoring activities and data evaluation conducted between January 1, 2015 and December 31, 2016 (hereinafter referred to as the reporting period).

BACKGROUND

A letter report, summarizing the results of the VRS pilot test was submitted to the New York State Department of Environmental Conservation (NYSDEC) by ARCADIS on May 11, 2005. The VRS was restarted and is being operated in accordance with the VRS pilot test extension letter originally submitted to the NYSDEC on September 7, 2005, and modified based on the following:

- Revised and submitted by ARCADIS on November 18, 2005 based on NYSDEC comments, dated October 11, 2005.
- ARCADIS responses, dated May 15, 2006 based on NYSDEC comments, dated February 2, 2006.

On September 22, 2009, the NYSDEC accepted the system modifications proposed in the August 20, 2009 submittal, “Air Emission Regulatory Review and Current Status, Related Calculations, and Proposed Modifications to Current System Configuration and Monitoring Procedures” (Regulatory Review). As

recommended in the Regulatory Review, the vapor phase granular activated carbon (VPGAC) was taken off-line on December 3, 2009 and the frequency of performance and compliance monitoring was decreased from monthly to quarterly beginning with the Fourth Quarter of 2009. No complications were encountered during the system modification.

- A system Status report covering the period of July 2012 through December 2014 was submitted on April 14, 2015. Recommendations made in the report to operate the VRS as a sub-slab depressurization system were accepted by the NYSDEC, with concurrence with the NYSDOH, in a letter dated April 30, 2015.

Operational data collected during the quarterly monitoring events are summarized in Table 1. A brief analysis of performance monitoring data is provided below.

Vapor Recovery System Operation

The VRS consists of three vacuum extraction locations (SVE-1, SVE-2 and SVE-3), six induced vacuum/vapor monitoring points (MP-1 through MP-6), a 5-horsepower regenerative blower, and a moisture separator. As previously discussed, the two 400 pound VPGACs were removed from system operation on December 3, 2009. Control valves, monitoring gauges, and sample ports were installed as necessary to adjust system operation and provide a means for collecting the data provided within this report.

RESULTS

Operational measurements including applied vacuum levels at each extraction point, extraction air flow rates, and photo-ionization detector (PID) readings are summarized in Table 1. In summary, the VRS is operating as designed. Key observations are as follows:

- Air flow rates at the vacuum extraction points measured during this reporting period ranged from approximately 30.9 to 76.5 actual cubic feet per minute (acfm).
- VRS wellhead vacuum measurements during this reporting period ranged from -36.0 to -44.0 inches water column (iwc).
- PID measurements during this reporting period ranged from 0.0 to 0.1 parts per million by volume (ppmv).
- Induced vacuum levels (i.e., negative pressure) measured at the monitoring point locations (MP-1 through MP-6) are summarized below:
    - Negative pressure was measured in monitoring point MP-1 during the March 26, 2015, June 26, 2015, September 29, 2015, March 24, 2016 June 23, 2016 and December 16, 2016 monitoring events. There was no induced vacuum measured at monitoring point MP-1 during the December 18, 2015 monitoring event.
    - Negative pressure was measured in monitoring points MP-2 during this reporting period.
    - Negative pressure was measured in monitoring point MP-3 during the, June 26, 2015, March 24, 2016, June 23, 2016 and December 16, 2016 monitoring events. There was no induced vacuum

measured at monitoring point MP-3 during the March 26, 2015, September 29, 2015, and December 18, 2015 monitoring events.

- Negative pressure was measured in monitoring point MP-4 during the, June 26, 2015, September 29, 2015, December 18, 2015, March 24, 2016, June 23, 2016 and December 16, 2016 monitoring events. There was no induced vacuum measured at monitoring point MP-4 during the March 26, 2015 monitoring event.
- Negative pressure was measured in monitoring point MP-5 during the, March 26, 2015, June 26, 2015, December 18, 2015, March 24, 2016, June 23, 2016 and December 16, 2016 monitoring events. There was no induced vacuum measured at monitoring point MP-5 during the September 29, 2015 monitoring event.
- Negative pressure was measured in monitoring point MP-6 during the, March 26, 2015, June 26, 2015, September 29, 2015, December 18, 2015, June 23, 2016 and December 16, 2016 monitoring events. There was no induced vacuum measured at monitoring point MP-5 during the March 24, 2016 monitoring event.
- In all, 35 of the 42 recorded measurements exhibited negative pressure.

Due to limited access to the monitoring point locations, monitoring points could not be examined to determine the cause of the sporadic absence of induced vacuum measurements. However, the changes in induced vacuum measured at these monitoring points may be due to seasonal variations and/or changes in atmospheric barometric pressure.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results provided herein, Arcadis concludes the following:

- The VRS operated as a sub-slab depressurization system as intended (i.e., effectively maintaining a negative pressure beneath the building slab, mitigating the potential vapor intrusion pathway).
- PID screening levels confirm that treatment of recovered vapors is unnecessary.
- Continue to operate the VRS as a sub-slab depressurization system to maintain a negative pressure beneath the building slab, thereby mitigating the potential vapor intrusion pathway.
- Continue to collect quarterly induced vacuum measurements to document the effectiveness of the VRS in maintaining a negative pressure beneath the building slab.

Please do not hesitate to contact me if you have any questions or need additional information.

Sincerely,

Arcadis of New York, Inc.

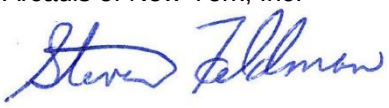

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Table 1. System Operational Data, Vapor Recovery System, United Stellar Industries, Plainview, New York.[1]

Date	SVE - 1 Extraction Well Parameters				SVE - 2 Extraction Well Parameters				SVE - 3 Extraction Well Parameters			
	Wellhead Vacuum (in.W.C.)	Air Velocity (fpm)	Air Flow Rate [2] (acfm)	PID Measured Concentration (ppmv)	Wellhead Vacuum (in.W.C.)	Air Velocity (fpm)	Air Flow Rate [2] (acfm)	PID Measured Concentration (ppmv)	Wellhead Vacuum (in.W.C.)	Air Velocity (fpm)	Air Flow Rate [2] (acfm)	PID Measured Concentration (ppmv)
03/26/15	-42.0	3,339	76.5	NM	-44.0	1,351	30.9	NM	-40.0	2,661	60.9	NM
06/26/15	-40.0	3,308	75.7	NM	-39.0	1,717	39.3	NM	-42.0	2,703	61.9	NM
09/29/15	-38.0	2,956	67.7	NM	-39.0	1,810	41.4	NM	-36.5	2,704	61.9	NM
12/18/15	-39.5	3,158	72.3	NM	-38.0	1,448	33.2	NM	-40.5	2,764	63.3	NM
03/24/16	-42.0	3,315	75.9	NM	-42.0	1,394	31.9	NM	-40.5	2,906	66.5	NM
06/23/16	-37.0	3,125	71.6	NM	-39.0	1,905	43.6	NM	-36.0	2,650	60.7	NM
12/16/16	-42.0	3,290	75.3	NM	-43.0	1,348	30.9	NM	-41.0	2,807	64.3	NM

Notes and Abbreviations:

acfm	actual cubic feet per minute
fpm	feet per minute
in. W.C	inches of water column
NA	not applicable
NM	not measured
NYSDEC	New York State Department of Environmental Conservation
ppmv	parts per million by volume
--	data not recorded

1. Data in this table corresponds to the current reporting period (January 1, 2015 to December 31, 2016).
2. The air flow rate was calculated by multiplying the measured air velocity in feet per minute by the cross sectional area of the pipe.
3. Per NYSDEC approval the vapor phase carbon treatment (GAC 500) was removed from system operation on December 3, 2009.
4. Gauge range is too high to record very minimal losses since the carbon treatment was removed.

Table 1. System Operational Data, Vapor Recovery System, United Stellar Industries, Plainview, New York.[1]

	Blower Parameters		GAC 500 Parameters [3]					Discharge Parameters				
Date	Influent Vacuum (in.W.C.)	Effluent Pressure (in.W.C.)	Influent Pressure (in.W.C.)	Influent Temperature (Degrees F)	Air Velocity (fpm)	Air Flow Rate [2] (acfm)	PID Measured Concentration (ppmv)	Discharge Pressure (in.W.C.)	Discharge Temperature (Degrees F)	Air Velocity (fpm)	Air Flow Rate [2] (acfm)	PID Measured Concentration (ppmv)
03/26/15	-64.0	NM [4]	NA	NA	NA	NA	NA	0.0	81.5	1,640	146.6	0.1
06/26/15	-61.0	NM [4]	NA	NA	NA	NA	NA	0.0	88.0	1,758	157.2	--
09/29/15	-59.0	NM [4]	NA	NA	NA	NA	NA	NM	113.4	1,743	155.9	--
12/18/15	-62.0	NM [4]	NA	NA	NA	NA	NA	NM	102.7	2,813	251.5	--
03/24/16	-61.5	NM [4]	NA	NA	NA	NA	NA	NM	102.1	2,866	256.3	--
06/23/16	-59.0	NM [4]	NA	NA	NA	NA	NA	NM	123.1	2,675	239.2	0.0
12/16/16	-64.0	NM [4]	NA	NA	NA	NA	NA	NM	98.1	2,862	255.9	0.0

Notes and Abbreviations:

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fpm	feet per minute
in. W.C	inches of water column
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NM	not measured
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ppmv	parts per million by volume
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1. Data in this table corresponds to the current reporting period (January 1, 2015 to December 31, 2015).
2. The air flow rate was calculated by multiplying the measured air velocity in feet per minute by the cross sectional area of the pipe.
3. Per NYSDEC approval the vapor phase carbon treatment (GAC 500) was removed from system operation on December 3, 2009.
4. Gauge range is too high to record very minimal losses since the carbon treatment was removed.

Table 1. System Operational Data, Vapor Recovery System, United Stellar Industries, Plainview, New York.[(1)]

Date	Induced Vacuum Measurements					
	MP-1 (in.W.C.)	MP-2 (in.W.C.)	MP-3 (in.W.C.)	MP-4 (in.W.C.)	MP-5 (in.W.C.)	MP-6 (in.W.C.)
03/26/15	-0.04	-0.02	0.13	0.13	-0.04	-0.07
06/26/15	-0.05	-0.07	-0.01	-0.04	-0.08	-0.06
09/29/15	-0.01	-0.05	0.00	-0.04	0.00	-0.05
12/18/15	0.00	-0.04	0.00	-0.01	-0.05	-0.04
03/24/16	-0.01	-0.02	-0.02	-0.01	-0.02	0.00
06/23/16	-0.06	-0.08	-0.01	-0.01	-0.07	-0.07
12/16/16	-0.07	-0.08	-0.01	-0.01	-0.07	-0.06

Notes and Abbreviations:

acfm	actual cubic feet per minute
fpm	feet per minute
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NA	not applicable
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