



Nathan Putnam New York State Department of Environmental Conservation Division of Environmental Remediation 625 Broadway Albany, New York 12233-7015

Subject:

June and July, 2006 System Status Report Soil Vapor Recovery System United Stellar Industries Property, 131 Sunnyside Boulevard Site, Plainview, New York.

Dear Mr. Putnam:

ARCADIS G&M, Inc. in conjunction with ARCADIS Engineers & Architects of New York, P.C. has prepared this system status report for the Vapor Recovery System (VRS), on behalf of 131 Sunnyside, LLC (Sunnyside) and Gertrude Discount (Discount), at the United Stellar Industries Property located at 131 Sunnyside Blvd. in Plainview, New York. A letter report, summarizing the results of the VRS pilot test was submitted to the 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 New York State Department of Environmental Protection (NYSDEC) on September 7, 2005, with NYSDEC comments, dated October 11, 2005, then revised and submitted by ARCADIS on November 18, 2005, with NYSDEC comments, dated February 2, 2006 and ARCADIS responses, dated May 15, 2006.

The following report provides documentation of all monitoring activities completed during the months of June and July, 2006. During this reporting period the relocation of the system into a treatment shed was completed and three performance monitoring events were performed (June 16, 2006, June 30, 2006 and July 14, 2006). Operational and volatile organic compound (VOC) data collected during the monitoring events are in Tables 1, 2, and 3. A site plan depicting the locations of the soil vapor wells and the treatment shed is included as Drawing 1 and a system schematic is included as Drawing 2. A brief analysis of performance monitoring data is provided below.

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ENVIRONMENT

Date: 9 August 2006

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Our ref: NY001422.0002.00002

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, a moisture separator and two 400-pound vapor phase granular activated carbon units (VPGACs). 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. All vapor samples were submitted to Air Toxics Laboratory in Folsom, CA for laboratory analysis via Method TO-14 (Direct Inject).

Results

Operational measurements including applied vacuum levels at each extraction point, extracted air flow rates, and Photo-ionization detector (PID) readings are summarized in Table 1. In summary, the relocated VRS is operating as designed when comparing results to the temporary pilot system. Key observations are as follows:

- Air flow rates measured during the June and July, 2006 operation at the vacuum extraction points ranged from 43 to 110 cubic feet per minute (cfm).
- VRS wellhead vacuum measurements during June and July, 2006 operation ranged from -36 inches water column (i.w.c.) to -56 i.w.c.
- PID measurements during June and July, 2006 operation were non-detect.
- Negative vacuum levels were measured in all of the monitoring points (MP-1 through MP-6) during each monitoring event.

Vapor sample analytical results are summarized in Tables 2 and 3. During June and July, 2006 operation, the following VOCs were detected: trichloroethene (TCE), tetrachloroethene (PCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,2-dichloroethene (1,2-DCE), Freon 113, chloroform, 1,1,-dichloroethane, toluene and 2-proponol. In general, VOC concentrations were equal to levels observed during the last monitoring event of the pilot test (June 1, 2005) during the June 16, 2006 and June 30, 2006 monitoring events and appeared to decrease during the July 14, 2006 monitoring event. A summary of VOC analytical results is as follows:

- During the June and July, 2006 operational period, extraction point SVE-1 had TCE concentrations as great as 5,900 ug/m³; Total volatile organic compound (TVOC) concentrations for SVE-1 were as great as 8,080 ug/m³. Under continued operation during June and July, 2006, TCE and TVOC concentrations dropped to 840 ug/m³ and 1,163 ug/m³, respectively.
- During the June and July, 2006 operational period, extraction point SVE-2 had TCE concentrations as great as 16,000 ug/m³; Total volatile organic compound (TVOC) concentrations for SVE-2 were as great as 17,242 ug/m³. Under continued operation during June and July, 2006, TCE and TVOC concentrations dropped to 3,300 ug/m³ and 3,624 ug/m³, respectively.
- During the June and July, 2006 operation, extraction point SVE-3 had TCE concentrations as great as 1,000 ug/m³; TVOC concentrations for SVE-3 were as great as 1,669 ug/m³. Under continued operation of the pilot test, TCE and TVOC concentrations dropped to 290 ug/m³ and 471 ug/m³, respectively.
- During the June 30, 2006 monitoring event, the lead VPGAC vessel had an effluent TVOC concentration of 328 ug/m³. The stack had a total effluent TVOC concentration of 439 ug/m³. As a result, ARCADIS notified the NYSDEC on June 18, 2006 and took the lead vessel off-line (the lag vessel was left on-line). The fresh vessel was then replaced on June 21, 2006. A sample was collected from the spent vessel formerly in the lead position for waste characterization.

Conclusions & Recommendations

ARCADIS G&M has drawn the following conclusions based on the results provided herein:

- The VRS operated as intended (i.e., a negative vacuum was maintained throughout the entire building footprint and contaminant mass was removed).
- System restart initially resulted in concentrations similar to pilot test concentrations.
- A declining trend in TCE and TVOC concentrations was observed in each of the three VRS extraction points.

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- The highest VOC concentrations were observed in SVE-2 with lower concentrations present at SVE-1 and SVE-3.
- The emissions from the stack during the pilot test were below New York State Department of Conservation Annual Guideline Concentrations (AGCs).

Based on the conclusions above, ARCADIS recommends continued operation of the VRS. Please call if you have questions or require additional information.

Sincerely,

ARCADIS G&M, Inc.

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Douglas A. Smolensky Associate Vice President

ARCADIS Engineers & Architects of New York, P.C.

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Table 1. Summary of Data Collected During Soil Vapor Extraction System Start-up, United Stellar Industris, Plainview, New York.

SVE - 1 Extraction Well Parameters SVE - 2 Extraction Well Parameters SVE - 3 Extraction Well Parameters Air Flow PID Measured Wellhead Wellhead Wellhead Air Wellhead Air Air Flow PID Measured Wellhead Wellhead Air Air Flow PID Measured Date Time Vacuum Temperature Velocity Rate (1) Concentration Vacuum Temperature Velocity Rate (1) Concentration Vacuum Temperature Velocity Rate (1) Concentration (in.W.C.) (Degrees F) (fpm) (in.W.C.) (cfm) (ppmv) (Degrees F) (fpm) (cfm) (ppmv) (in.W.C.) (Degrees F) (fpm) (cfm) (ppmv) 6/8/06 1:40 PM (2) 0.0 ---------_ -.... ---------.... -----2:45PM⁽³⁾ -40.0 0.0 -39.0 0.0 -41.0 0.0 -------------------------4:45 PM -40.0 ------0.0 -39.0 ----0.0 -42.0 0.0 -------------------6:10 PM -40.0 3,600.0 82.4 0.0 -39.0 2600 59.5 0.0 -42.0 3400 77.9 0.0 ----6/9/06 11:30:00 AM⁴⁾ -56.0 -56.0 -0.0 ------------------------..... ---6/12/06 10:00 AM -56.00 ------------56.0 0.0 -------------------_ 40.0(7) 6/16/06 2:30 PM -39.0 70.0 4,400.0 100.8 0.0 -38.0 72.0 3800 87.0 0.0 69.0 3200 73.3 0.0 6/30/06 12:10PM -38.0 70.0 4,650.0 106.5 0.0 -38.0 78.0 4520 103.5 0.0 -40.0 75.0 4,800.0 109.9 0.0 7/14/06 2:14PM -42.0 2,517.0 57.6 0.0 -42.5 2730 62.5 0.0 -51.0 1882 43.1 0.0 ----------7/28/06 11:57 AM -36.0 --2,637.0 60.4 0.0 -35.8 ---1950 44.7 0.0 -37.9 ---2678 61.3 0.0

1000

1000

10.5

See notes on last page.

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Table 1. Summary of Data Collected During Soil Vapor Extraction Pilot Testing, United Stellar Industries, Plainview, New York.

	-	Blower Parameters			GAC 500 Parameters				GAC 600 Parameters				Induced Vacuum Measurements							
Date	Time	Influent Vacuum (in.W.C.)	Discharge Temperature (Degrees F)	Effluent Pressure (in.W.C.)	Discharge Pressure (in.W.C.)	Discharge Temperature (Degrees F)	Air Velocity (fpm)	Air Flow Rate (1) (cfm)	PID Measured Concentration (ppmv)	Discharge Pressure (in.W.C.)	Discharge Temperature (Degrees F)	Air Velocity (fpm)	Air Flow Rate (1) (cfm)	PID Measured Concentration (ppmv)	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.)
6/8/06	1:40:00 PM (2)	-	_					-			-	-	-		0.00	0.00	0.00	0.00	0.00	0.00
	2:45:00 PM ⁽³⁾	-52.0		5.0	2.0	-			14.0					0.0	-0.14	-0.11	-0.08	-0.16	-0.09	-0.13
	4:45 PM	-51.0		6.0	2.0			-	10.5	-	-		-	-	-0.11	-0.09	-0.07	-0.16	-0.07	-0.11
	6:10 PM	-51.0	-	6.0	2.0				4.4		-	3000	68.7		-0.13	-0.09	-0.07	-0.16	-0.07	-0.11
6/9/06	11:30 AM	-64.0	130.0	4.0	1.0	115.0 ⁽⁵⁾		-	-		100.0(5)	0	-	-	-0.14	-0.12	-0.08	0.00	-0.01	-0.13
6/12/2006	10:00 AM	-65.0	-	4.0	1.0	-		-	-				-	-	-	-				
6/16/2006	2:30 PM	-50.0	-	4.0	(6)					-	120.0	3800	87.0	0.0	-0.09	-0.09	-0.08	-0.17	-0.05	-0.10
6/30/06	12:10PM	-50.0	141.0 ⁽⁵⁾	8.0		-			-	0.0	100.0	4250	97.3	0.0	-		-	-		
7/14/06	2:14PM	-51.0	133.2	8.0	7.0	-			0.0	0.0	108.8	1883	43.1	0.0	-0.10	-0.10	-0.15	-0.18	-0.08	-0.12
7/28/06	11:57 AM	-49.8	126 (5)	8.5	7.0	115 (5)	-		0.0	0.0	107 (5)	1530	35.0	0.0	-0.07	-0.10	-0.09	-0.16	-0.07	-0.01

See notes on last page.

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Table 1. Summary of Data Collected During Soil Vapor Extraction Pilot Testing, United Stellar Industries, Plainview, New York.

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Notes:

1. Air flow rate was calculated by multiplying measured air velocity by cross sectional area of the pipe.

2. The Soil Vapor Extraction System baseline reading was taken @ 1:45PM June 8, 2006.

3. The system was started at 2:30 PM. First reading was taken at 15 minutes after start-up.

4. SVE-3 was valved off after leak was discovered in well head.

5. Temperature taken with handheld infra red thermometer

6. GAC 500 was temporarily removed until replacement vessel arrived

7. SVE-3 Well sealed and well brought on line

		SVE-1			SVE-2		SVE-3			
Compound	6/16/2006 ⁽³⁾	6/30/2006	7/14/2006	6/16/2006 ⁽³⁾	6/30/2006	7/14/2006	6/16/2006 ⁽³⁾	6/30/2006	7/14/2006	
	3:00 PM	12:00 PM	3:50 PM	3:00 PM	12:00 PM	3:50 PM	3:00 PM	12:00 PM	3:50 PM	
	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	
Freon 113	280J	410	61	580J	580	190	130J	320	110	
Chloroform	51J	160	ND	NDJ	ND	ND	NDJ	ND	ND	
1,1,1-Trichloroethane	150J	1100	220	64J	52	ND	NDJ	ND	ND	
Trichloroethene	5200J	5900	840	12000J	16000	3300	600J	1000	290	
Tetrachloroethene	210J	220	ND	180J	190	46	NDJ	49	ND	
trans-1,2-Dichloroethene	NDJ	ND	ND	NDJ	ND	ND	NDJ	ND	ND	
cis-1,2-Dichloroethene	140J	160	42	320J	290	88	27J	150	71	
1,1-Dichloroethane	NDJ	ND	ND	NDJ	ND	ND	NDJ	ND	ND	
Toluene	32J	ND	ND	30J	ND	ND	NDJ	ND	ND	
2-Propanol	200J	130	ND	150J	130	ND	160J	150	ND	
Total VOCs ⁽²⁾	6,263	8,080	1,163	13,324	17,242	3,624	917	1,669	471	

Table 2. Summary of Extraction Well Vapor Sample Analytical Results, Vapor Recovery System Pilot Test, Spiegel, Plainview, New York.

ug/m³ micrograms per cubic meter

ND analyte not detected at, or above its laboratory quantification limit

Notes

 Samples collected by ARCADIS personnel during the periods shown and submitted to Air Toxics Laboratories., Folsom, CA. for volatile organic compound (VOC) analyses using Direct Inject Method TO-14. Only VOCs detected at any time during the pilot test at any location are presented on this table.

2. Total VOCs calculated by summing individual analytes.

3. Due to laboratory error, samples SVE-1, SVE-2, SVE-2 duplicate and SVE-3 were analyzed outside of the recommended hold time. Although subsequent laboratory testing indicating the results are representative, these results are nonetheless considered estimated and are noted with a J qualifier.

Table 3. Draft Summary of Effluent Stack Vapor Sample Analytical Results, Vapor Recovery System Pilot Test, Spiegel, Plainview, New York.

	CONCENTRATIONS (1)	EFF-1	EFF-2		
Compound		6/30/2006	6/30/2006		
		12:00 PM	12:00 PM		
		(ug/m ³)	(ug/m ³)		
Freon 113		ND	ND		
		ND	ND		
Chloroform		ND	ND		
1,1,1-Trichloroethane		ND	ND		
Trichloroethene		140	340		
Tetrachloroethene		ND	ND		
trans-1,2-Dichloroethene		ND	ND		
cis-1,2-Dichloroethene		ND	ND		
1,1-Dichloroethane		ND	ND		
Toluene		ND	48		
2-Propanol		170	51		
Benzene		18	ND		
Total VOCs ⁽²⁾		328	439		

ug/m³ micrograms per cubic meter

ND analyte not detected at, or above its laboratory quantification limit

Notes

- Samples collected by ARCADIS personnel during the periods shown and submitted to Air Toxics Laboratories., Folsom CA for volatile organic compound (VOC) analyses using Direct Inject Method TO-14. Only VOCs detected at any time during the pilot test at any location are presented on this table.
- 2. Total VOCs calculated by summing individual analytes.





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