

November 1, 2012

**RECEIVED**

10:29 am, Nov 06, 2012

Alameda County  
Environmental Health

Mr. Paresh Khatri  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway  
Alameda, CA 9502-6577

Subject: Soil Vapor Extraction Remediation Startup Report  
Crow Canyon Dry Cleaners  
7272 San Ramon Road Dublin, CA  
RO# 000283

Dear Mr. Khatri:

This enclosed report has been prepared by Endpoint Consulting, Inc. on behalf of the Burrows Company, Dwight & Carleton Perry, Gabriel H. Chui & Lai H. Trust, the Lee Family, Nam Sun and Seung Hee Park, and the Raphel-Roessler Retail Group.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge. If you have any questions, please contact Mr. Mehrdad Javaher. of Endpoint at 415-706-8935.

Sincerely,



James Roessler  
Raphel-Roessler Retail Group

October 29, 2012

Mr. Paresh Khatri  
Hazardous Materials Specialist  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

Subject: Soil Vapor Extraction Remediation Startup Report  
Crow Canyon Dry Cleaners  
7272 San Ramon Road, Dublin, California  
(RO # 0002863)

Dear Mr. Khatri,

Endpoint Consulting, Inc. (Endpoint) is pleased to present this letter report summarizing the installation, startup, and operation and maintenance (O&M) activities associated with remediation of tetrachloroethene (PCE) impacts in the vadose zone beneath the above-referenced site. Remediation activities featured soil vapor extraction (SVE) as outlined in the Corrective Action Plan (CAP) for the site, approved by the Alameda County Health Care Service Agency (ACHCSA).

The site is located in a suite within a commercial building in the Lamps Plus Shopping Center located on the west side of San Ramon Road, within a mixed residential/commercial area of Dublin, CA (see Figure 1). Historical resources and site reconnaissance have revealed that the unit occupied by the site (i.e., 7272 San Ramon Road) has been occupied by a dry-cleaning facility since 1988. The dry-cleaning and solvent storage areas were located in the back of the building, with PCE used as the cleaning solvent until 2004; current dry cleaning operations do not use any chlorinated solvents.

Immediately adjacent (to the south) to the suite housing the dry cleaners is an occupied commercial/retail space. The suite next to this commercial/retail space is a Montessori School serving preschool children. As outlined in the CAP, the objectives of implementing SVE remediation at the site included the reduction of PCE concentrations in soil vapor across the site, with particular emphasis on minimizing the potential for PCE vapor migration toward the Montessori School. At the time the CAP was prepared, the ownership at the Montessori School were in the process of securing alternate space to support a permanent move of the school from the existing location. Hence, the CAP outlined two sets of cleanup goals; one corresponding to residential use of the property ( $410 \text{ ug/m}^3$ ), and the second corresponding to commercial use of the property ( $1,400 \text{ ug/m}^3$ ) based on the intended departure of the Montessori School from the adjacent suite. At the time of this writing, Montessori School is in the process of moving, with the estimated date of complete move-out by February 2013 (Personal communication with Montessori School).

As required by the final CAP for the site, an SVE system was permitted and installed at the site on June 21, 2012, with daily operations beginning on June 28, 2012 and continuing at the date of this report. On October 2, 2012, the SVE system operations were terminated in support of collection of vapor samples from key site wells to assess the benefits of SVE operations. This sampling was conducted on October 9, 2012, after which the SVE system was restarted and continues to operate today. This report summarizes the startup of the SVE operations, the results of the first four months of O&M activities, and the results of pre- and post-SVE startup vapor sampling referenced above.

## **SVE SYSTEM STARTUP**

A mobile SVE system provided by Endpoint was installed at the site on June 21, 2012. Before the operation of the SVE system, an air permit was obtained from the Bay Area Air Quality Management District (BAAQMD) (Plant No. 19783, Permit No. 24021). A permit to install the system was also obtained from the City of Dublin (#BLDG-2012-00299). Existing vapor extraction wells VE-1S, VE-1D, VE-2S, VE-2D, VE-3S, and VE-3D were connected to the SVE system (see Figure 1).

### Baseline Sampling

Prior to system operation on June 28, 2012, a baseline round of vapor samples were collected from key site monitoring wells on June 27, 2012. Access to the Montessori School was not granted by the operators of the school, so no baseline samples were collected from monitoring wells within the school. Table 1 summarizes the results of historical samples collected from existing monitoring and vapor extraction wells onsite, including samples collected during SVE activities implemented as an interim remedial action (IRA) during 2009, subsequent semi-annual sampling required by the ACHCSA from 2009 through 2011, and the baseline and post-SVE startup samples collected in 2012.

The laboratory report for the June 27, 2012 baseline sampling is included as Appendix A. As indicated in Table 1, the baseline sampling conducted in June 2012 prior to initiation of SVE operations indicated that PCE concentrations ranged from <500 ug/m<sup>3</sup> to 14,000 ug/m<sup>3</sup>. Source area vapor extraction wells VE-1S and VE-2S (see Figure 1) remained the highest concentrated for PCE (12,000 and 14,000 ug/m<sup>3</sup>, respectively), while sub-slab monitoring well VM-9SS located adjacent to the former dry cleaning machine also reported an elevated PCE concentration (7,200 ug/m<sup>3</sup>). In the absence of samples from the wells inside the Montessori School, well VM-4SS, located in the commercial space between the dry cleaner and the Montessori School reported a concentration of 2,100 ug/m<sup>3</sup> (see Table 1). The concentrations reported in the June 2012 monitoring event generally approximated those detected in the most recent event (i.e, January 2011 monitoring event- see Table 1) prior to the June 2012 monitoring event.

### SVE Operations

Following obtainment of the air permit from the BAAQMD, fulltime SVE operations were initiated on June 28, 2012. With the exception of the system termination in support of the vapor sampling on October 2, 2012 and some minor system terminations due to maintenance activities, the system has been in full operation through the date of this report.

Throughout this time, weekly O&M activities were conducted per the air permit, reducing to bi-weekly events as approved by the BAAQMD. During O&M events, vapor flow rates and the vacuum extracted from the vapor extraction wells were recorded; field sheets summarizing the collected information are included as Appendix B, while Tables 2 and 3 summarize operational data for the SVE system collected during each O&M event.

As indicated in Table 2, between June 28<sup>th</sup>, 2012 and October 23<sup>rd</sup>, 2012, SVE was conducted for approximately 2,365 hours. Vacuum rates induced by the system ranged from 5.5 to 22.5 inches of water (see Table 2), while system flow rates ranged from 80.5 scfm to 129.9 scfm (see Table 3). To maximize system efficiency, during select O&M events, system operation was shifted between shallow extraction wells and deep extraction wells, allowing for vapor extraction from both sub-slab and deeper depths.

The individual well vacuum readings throughout the O&M activities are summarized on the field sheets in Appendix B, while select readings summarized in Table 4. As shown in this table, vacuum readings in monitoring wells across the site were recorded at 0 to 0.62 inches of water. Monitoring well VM-8 located adjacent to a sewer line in the front parking lot showed the highest vacuum, due likely to preferential flow through the sewer line backfill. Closer to the extraction wells, VM-4SS (15 feet away from VE-3S) showed vacuums of 0.118 to 0.41 inches of water. Monitoring wells VM-1S and MV-1D, also located approximately 15 feet away from extraction wells VE-1S and VE-3S yielded vacuum responses above 0.1 inches of water. Wells inside the Montessori School, located 30 feet and more from extraction wells, showed vacuum levels below 0.1 inches of water. Based on this information the radius of influence of the SVE system is estimated at 15 to 20 feet.

Table 3 summarizes estimates of mass removal rates during each O&M event, in addition to an estimate of the cumulative PCE mass removed over time. As indicated in the table, mass removal rates remained generally low, ranging from less than 0.1 to 0.6 pounds of PCE removed per day. Through October 23<sup>rd</sup>, the cumulative PCE mass removed approximates 10.6 pounds. This marks a significant increase in the total mass removed relative to the 0.1 pound removed during two months of IRA activities in 2009.

### Post-SVE Vapor Sampling

As previously indicated, on October 2, 2012, the SVE system was terminated for approximately 7 days prior to collection of a round of vapor samples from select key monitoring and extraction wells at the site. The laboratory analytical report for this sampling is included as Appendix C, with results summarized in Table 1. As indicated in the table, PCE concentrations in all sampled wells after approximately 3.5 months of SVE operation were below both residential and commercial cleanup goals adopted in the final CAP.

The highest PCE concentrations remains in sub-slab monitoring well VMP-9SS (280, ug/m<sup>3</sup>), located in the immediate vicinity of the former dry cleaning machine; however, the concentration in this well reduced from 7,200 ug/m<sup>3</sup> prior to initiation of SVE operations, to 280 ug/m<sup>3</sup> some 4 months after SVE operation. Significant reductions were also observed in vapor extraction wells VE-1S and VE-2S, including reductions from 12,000 ug/m<sup>3</sup> to 41 ug/m<sup>3</sup> (for VE-1S) and from 14,000 ug/m<sup>3</sup> to 35 ug/m<sup>3</sup> (for VE-2s). Importantly, sub-slab monitoring wells VM-5SS (68 ug/m<sup>3</sup>) and VM-6SS (110 ug/m<sup>3</sup>) located within the Montessori School yielded PCE concentrations well below both the residential (410 ug/m<sup>3</sup>) and commercial (1,400 ug/m<sup>3</sup>)



cleanup goal established for the site, and well below previously reported levels in 2011 (see Table 1).

## CONCLUSIONS AND RECOMMENDATIONS

Per the ACHCSA-approved CAP for the site, an SVE system has been successfully installed and operated at the site. Prior to initiation of SVE operations on June 28, 2012, baseline vapor sampling conducted on June 27, 2012 indicates that PCE concentrations at the site remained generally similar to those detected 17 months prior in January 2011; however, these levels reflected a rebound at several well locations some 34 months after termination of the original SVE operations implemented for two months as an IRA in 2009.

Following startup of full-scale SVE operations in July 2012, an estimated 10.5 pounds of PCE mass has been removed over a 4-month period, marking a significant increase in mass removal relative to the 0.1 pounds of total PCE mass removed in two months of IRA activities in 2009. This increased mass removal has also resulted in reduced PCE concentrations in key monitoring and vapor extraction wells across the site, with all detections of PCE in October 2012 occurring well below the residential and commercial cleanup goals established for the site within the CAP.

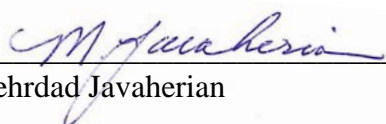
Based on the above observations, Endpoint recommends continuing SVE operations over the next three to five months to maximize PCE mass removal and minimize the potential for post-SVE concentration rebound such as that previously observed following termination of IRA SVE activities in 2009. If necessary and to help maximize operation efficiency of the SVE system, Endpoint proposes to operate the SVE system under a pulse scenario, where the system may be operated for periods of two to four weeks, followed by system shutdown for two to four weeks.

Following the above-referenced time frame for completion of SVE activities, Endpoint plans to shutdown SVE operations, collect another round of vapor samples across the site, and based on those results, transition the site into semi-annual monitoring for one year. Endpoint plans to document the results of the above-referenced SVE operations and related monitoring in a separate report for submittal to the ACHCSA. If the results of the semi-annual monitoring indicate PCE concentrations remain below the relevant cleanup goal, then a formal request for site closure will be submitted to the ACHCSA.

## CLOSING

As always, Endpoint appreciates your assistance with this project. If you have any questions, please contact Mehrdad Javaherian at 415-706-8935, or at [mehrdad@endpoint-inc.com](mailto:mehrdad@endpoint-inc.com).

Sincerely,  
**Endpoint Consulting, Inc.**

  
Mehrdad Javaherian



Attachments:

Table 1 - PCE Analytical Results in Soil Vapor

Table 2 – Summary of SVE Field Monitoring Data

Table 3- Summary of SVE Operation

Figure 1 – Vapor Extraction and Monitoring Well Locations

Appendix A – Laboratory Analytical Report for June 2012 Baseline Vapor Sampling

Appendix B – Field Data Sheets

Appendix C – Laboratory Analytical Report for October 2012 Vapor Sampling

## **Tables**

**Table 1**  
**PCE Vapor Concentrations**  
**Vapor Monitoring and Extraction Well Locations**

Crow Canyon Dry Clenaers  
7272 San Ramon Road,  
Dublin, California

Well I.D.	PCE Concentrations (ug/m <sup>3</sup> )							
	7/18/2009 to 7/30/2009 Baseline-Purge Test-SVE Shakedown Sampling Events	9/1/2009 1 Month after operation of SVE system	9/28/2009 2 Months after operation of SVE system	11/4/09 ~ 1 month after shutdown of SVE system	8/26/10 ~ 11 months after shutdown of SVE system	1/12/11 ~ 17 months after shutdown of SVE system	6/27/2012* ~ 34 months after shutdown of SVE system	10/9/2012 ~ 3.5 months after SVE restart**
VE-1S	1,200	23	<14	970	1,100	19,000	12,000	41
VE-1D	420	300	<14	770	NS	NS	4,500	NS
VE-2S	5,900	<14	200	500	3,400	13,000	14,000	35
VE-2D	1,100	<14	<14	350	NS	NS	5,100	NS
VE-3S	2,200	30	38	<14	870	260	<500	NS
VE-3D	3,800	24	51	<14	NS	NS	790	NS
VM-1S	<73	-	<14	20	2,600	580	1,200	NS
VM-1D	160	-	16	140	NS	NS	520	NS
VM-3S	8,100	-	55	81	NS	NS	NS	NS
VM-3D	34J	-	<14	300	NS	NS	NS	NS
VM-4S	10,000	-	180	310	1,100	1,100	2,100	22
VM-5SS	-	-	-	-	1,300	1,100	NS	68
VM-6SS	-	-	-	-	650	390	NS	110
VM-2SS	-	-	-	-	28	<14	NS	NS
VM-7	-	-	-	-	310	<14	240	NS
VM-8	-	-	-	-	1,300	640	820	NS
VM-9SS	-	-	-	-	11,000	14,000	7,200	280
VM-10	-	-	-	-	450	210	NS	NS
ESLs Residential Exposure: 410 ug/m <sup>3</sup>								
ESLs Commercial/Industrial Land Use: 1,400 ug/m <sup>3</sup>								
Site-Specific Screening Level for School Children: 2,600 ug/m <sup>3</sup>								

\* Baseline Sampling prior to start of SVE Operations on June 28, 2012

\*\* system shutdown one week before sampling

**Table 2 - Summary of SVE Field Monitoring Data**

Crow Canyon Cleaners  
7272 San Ramon Road  
Dublin, CA 94568

Date	Hour Meter Reading	Wellhead Influent Monitoring Data							Midpoint Data VOC (ppmv)	Effluent Monitoring Data					
		Pipe Dia. (in.)	Area (in. <sup>2</sup> )	dP (in. H <sub>2</sub> O)	Vacuum (in. H <sub>2</sub> O)	Temp. (°F)	Velocity (fpm)	VOC (ppmv)		Pipe Dia. (in.)	Area (in. <sup>2</sup> )	dP (in. H <sub>2</sub> O)	Temp. (°F)	Velocity (fpm)	VOC (ppmv)
06-28-12	0.0	3	0.05	0.170	10	65	1,666	9.3	0.0	2	0.02	1.180	65	4,334	0.0
07-03-12	120.0	3	0.05	0.220	6	65	1,885	0.0	0.0	2	0.02	1.250	65	4,461	0.0
07-13-12	362.7	3	0.05	0.200	5.5	62	1,791	25.0	0.0	2	0.02	1.140	64	4,256	0.0
07-19-12	511.4	3	0.05	0.460	10	86	2,794	1.0	0.0	2	0.02	2.160	99	6,051	0.0
07-26-12	674.0	3	0.05	0.300	10	67	2,217	0.0	0.0	2	0.02	2.000	72	5,680	0.0
07-27-12	701.0	3	0.05	0.300	10	71	2,225	0.0	0.0	2	0.02	2.000	72	5,680	0.0
08-02-12	704.0	3	0.05	0.300	11	64	2,213	6.0	0.0	2	0.02	2.000	95	5,802	0.0
08-08-12	885.0	3	0.05	0.370	12	64	2,461	3.0	0.0	2	0.02	2.000	95	5,802	0.0
08-16-12	1057.2	3	0.05	0.250	30	76	2,094	2.0	0.0	2	0.02	1.100	89	4,279	0.0
08-29-12	1369.0	3	0.05	0.390	22.5	65	2,564	0.0	0.0	2	0.02	2.070	87	5,860	0.0
09-13-12	1725.0	3	0.05	0.310	9.7	64	2,246	0.0	0.0	2	0.02	2.000	89	5,770	0.0
09-20-12	1727.0	3	0.05	0.275	22	76	2,174	1.0	0.0	2	0.02	1.580	85	5,110	0.0
10-09-12	2039.0	3	0.05	0.200	20	72	1,842	4.2	0.0	2	0.02	1.550	93	5,098	0.0
10-23-12	2365.6	3	0.05	0.200	22	60	1,826	2.8	0.0	2	0.02	1.570	93	5,131	0.0

**Explanation:**

°F = degree Fahrenheit

dia. = diameter

dP = differential pressure

in. = inches

in.<sup>2</sup> = square inches

in. H<sub>2</sub>O = inches of water column

fpm = feet per minute

Temp. = temperature

mg/m<sup>3</sup> = milligrams per cubic meter

ppmv = parts per million by volume

VOC = Volatile Organic Compounds

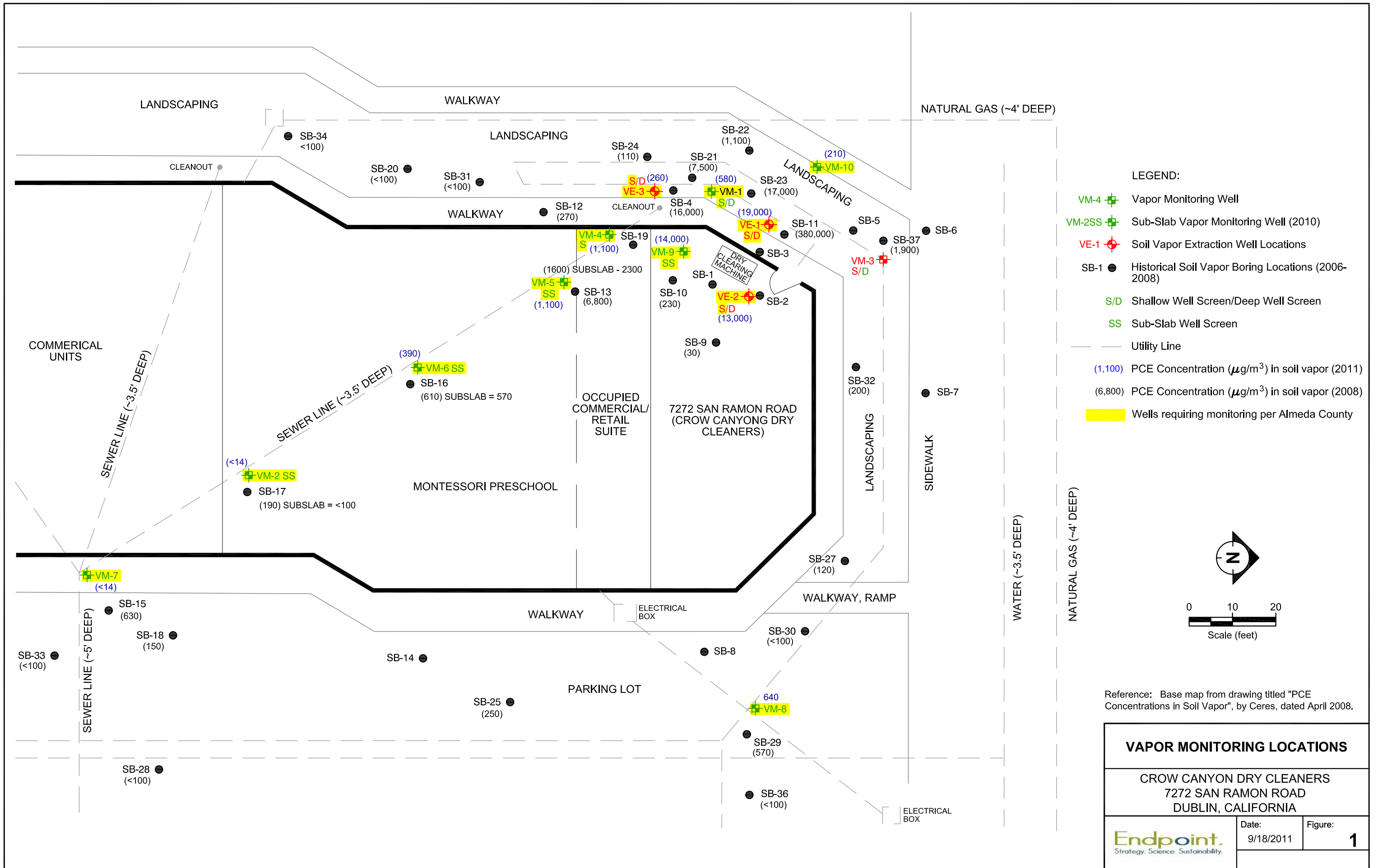
### Table 3 - Summary of SVE Operation

Crow Canyon Cleaners  
 7272 San Ramon Road  
 Dublin, CA 94568

Date	Hour Meter Reading	Wellhead Influent				Effluent		
		Flow Rate (scfm)	VOC (ppmv)	Mass Removal Rate (lbs/day)	Cumulative Mass Removed (lbs)	Flow Rate (scfm)	VOC (ppmv)	VOC (lbs/day)
06-28-12	0.0	80.5	9.3	0	0	95.5	0.0	0.0
07-03-12	120.0	92.1	0.0	0.0	0.5	98.2	0.0	0.0
07-13-12	362.7	88.1	25.0	0.6	1.6	93.9	0.0	0.0
07-19-12	511.4	129.9	1.0	0.0	3.6	125.1	0.0	0.0
07-26-12	674.0	106.8	0.0	0.0	5.9	123.5	0.0	0.0
07-27-12	701.0	106.4	0.0	0.0	6.0	123.5	0.00	0.00
08-02-12	704.0	106.9	6.0	0.2	6.0	120.9	0.00	0.00
08-08-12	885.0	118.6	3.0	0.1	6.7	120.9	0.00	0.00
08-16-12	1057.2	94.2	2.0	0.1	7.9	90.1	0.00	0.00
08-29-12	1369.0	120.0	0.0	0.0	9.0	123.9	0.00	0.00
09-13-12	1725.0	108.9	0.0	0.0	9.4	121.5	0.00	0.00
09-20-12	1727.0	99.8	1.0	0.0	9.4	108.4	0.00	0.00
10-09-12	2039.0	85.7	4.2	0.1	9.6	106.6	0.00	0.00
10-23-12	2365.6	86.4	2.8	0.1	10.6	107.3	0.00	0.00



**Figure**



## **Appendix A**

### **Laboratory Analytical Report for June 2012 Baseline Vapor Sampling**



## Analytical Report

Endpoint  98 Battery Street, Suite 200  San Francisco, CA 94111	Client Project ID: TM Dublin; Crow Canyon	Date Sampled: 06/27/12
		Date Received: 06/28/12
	Client Contact: Mehrdad Javaher	Date Reported: 07/09/12
	Client P.O.:	Date Completed: 07/09/12

**WorkOrder: 1206836**

July 09, 2012

Dear Mehrdad:

Enclosed within are:

- 1) The results of the **12** analyzed samples from your project: **TM Dublin; Crow Canyon**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
 Laboratory Manager  
 McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

1206836



**McCAMPBELL ANALYTICAL INC.**  
 1534 WILLOW PASS ROAD / PITTSBURG, CA 94565-1701  
 Website: [www.mccampbell.com](http://www.mccampbell.com) / Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
 Telephone: (877) 252-9262 / Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**  
**TURN AROUND TIME**  RUSH  24 HR  48 HR  72 HR  5 DAY  
 EDF Required? Coelt (Normal) No Write On (DW) No

Report To: M. JAVAHERIAN Bill To: ENDPOINT

Company: ENDPOINT CONSULTING  
1534 PLAZA LN # 243  
Buena Vista CA 94010 E-Mail:  
 Tele: (415) 706.8935 Fax: ( )

Lab Use Only

Pressurized By	Date	Pressurization Gas	
		N2	He

Project #: Tim Dublin Project Name: Crow Canyon

Helium Shroud SN#:

Project Location: 7272 San Ramon Rd Dublin

Other:

Sampler Signature: [Signature]

Notes:

Field Sample ID (Location)	Collection		Canister SN#	Manifold / Sampler Kit SN#
	Date	Time		
<u>Vm-10</u>	<u>6/27/12</u>	<u>1122</u>	<u>4753-623</u>	<u>981</u>
<u>Vm-955</u>		<u>1241</u>	<u>2711</u>	<u>986</u>
<u>VE-10</u>		<u>1321</u>	<u>3634-570</u>	<u>983</u>
<u>Vm-45</u>		<u>1348</u>	<u>L-4771</u>	<u>989</u>
<u>VE-15</u>		<u>1417</u>	<u>02587</u>	<u>987</u>
<u>Vm-7</u>		<u>1511</u>	<u>4743</u>	<u>982</u>
<u>Vm-15</u>		<u>1600</u>	<u>3645-561</u>	<u>985</u>
<u>VE-30</u>		<u>1624</u>	<u>4616-881</u>	<u>316T-775</u>
<u>VE-33</u>		<u>1636</u>	<u>A-7741</u>	<u>980</u>

Analysis Requested	Indoor Air	Soil Gas	Canister Pressure/Vacuum			
			Initial	Final	Receipt	Final (psi)
<u>TO-15 8010 only</u>		<u>X</u>	<u>31</u>	<u>5</u>		
			<u>30</u>	<u>5</u>		
			<u>30</u>	<u>5</u>		
			<u>30</u>	<u>5</u>		
<u>+ He</u>			<u>30</u>	<u>5</u>		
			<u>30</u>	<u>5</u>		
			<u>30</u>	<u>5</u>		

Relinquished By: [Signature] Date: 6/28/12 Time: 1120 Received By: Joe Vall

Temp (°C): n/a Work Order #: 1206836

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_


Equipment Condition: good

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

Shipped Via: Client drop in



1206836

 <p><b>McCAMPBELL ANALYTICAL INC.</b>          1534 WILLOW PASS ROAD / PITTSBURG, CA 94565-1701          Website: <a href="http://www.mccampbell.com">www.mccampbell.com</a> / Email: <a href="mailto:main@mccampbell.com">main@mccampbell.com</a>          Telephone: (877) 252-9262 / Fax: (925) 252-9269</p>	<p align="center"><b>CHAIN OF CUSTODY RECORD</b></p> <p><b>TURN AROUND TIME</b>    <input type="checkbox"/> RUSH    <input type="checkbox"/> 24 HR    <input type="checkbox"/> 48 HR    <input type="checkbox"/> 72 HR    <input checked="" type="checkbox"/> 5 DAY</p> <p>EDF Required? Coelt (Normal)    No    Write On (DW)    No</p>
--	--

Report To: M. JAVATHERIAN    Bill To: ENDPOINT

Company: ENDPOINT CONSULTING  
1534 PLAZA LN #243  
Burlingame 94010    E-Mail: \_\_\_\_\_

Tele: (415) 706. 8935    Fax: (    )

Project #: TMDublin    Project Name: Crow Canyon

Project Location: 7272 San Ramon Rd Dublin

Sampler Signature: [Signature]

Lab Use Only

Pressurized By	Date	Pressurization Gas	
		N2	He

Helium Shroud SN#: \_\_\_\_\_

Other: \_\_\_\_\_

Notes: \_\_\_\_\_

Field Sample ID (Location)	Collection		Canister SN#	Manifold / Sampler Kit SN#	Analysis Requested	Indoor Air	Soil Gas	Canister Pressure/Vacuum			
	Date	Time						Initial	Final	Receipt	Final (psi)
<u>VM-8</u>	<u>6/27</u>	<u>1705</u>			<u>To 15 80/10 only</u>		<u>X</u>	<u>30</u>	<u>-5</u>		
<u>VE-20</u>		<u>1804</u>	<u>4766-984</u>	<u>984</u>	<u>↓</u>		<u> </u>	<u>30</u>	<u>-5</u>		
<u>VE-25</u>		<u>1803</u>	<u>3656</u>	<u>988</u>				<u>30</u>	<u>-5</u>		

Relinquished By: [Signature]    Date: 6/28/12    Time: 1120    Received By: [Signature]

Relinquished By: \_\_\_\_\_    Date: \_\_\_\_\_    Time: \_\_\_\_\_    Received By: \_\_\_\_\_

Relinquished By: \_\_\_\_\_    Date: \_\_\_\_\_    Time: \_\_\_\_\_    Received By: \_\_\_\_\_

Temp (°C): \_\_\_\_\_    Work Order #: \_\_\_\_\_

Equipment Condition: \_\_\_\_\_

Shipped Via: \_\_\_\_\_





# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1206836

ClientCode: EPB

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQUIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Mehrdad Javaher  
Endpoint  
98 Battery Street, Suite 200  
San Francisco, CA 94111  
415-706-8935    FAX:

Email: mehrdad@endpoint-inc.com  
cc:  
PO:  
ProjectNo: TM Dublin; Crow Canyon

**Bill to:**

Accounts Payable  
Endpoint  
98 Battery Street, Suite 200  
San Francisco, CA 94111

**Requested TAT:**

**5 days**

**Date Received: 06/28/2012**

**Date Printed: 06/28/2012**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1206836-001	VM-1D	Soil Gas	6/27/2012 11:22	<input type="checkbox"/>		A											
1206836-002	VM-9SS	Soil Gas	6/27/2012 12:41	<input type="checkbox"/>		A											
1206836-003	VE-1D	Soil Gas	6/27/2012 13:21	<input type="checkbox"/>		A											
1206836-004	VM-4S	Soil Gas	6/27/2012 13:48	<input type="checkbox"/>		A											
1206836-005	VE-1S	Soil Gas	6/27/2012 14:17	<input type="checkbox"/>	A	A											
1206836-006	VM-7	Soil Gas	6/27/2012 15:11	<input type="checkbox"/>		A											
1206836-007	VM-1S	Soil Gas	6/27/2012 16:00	<input type="checkbox"/>		A											
1206836-008	VE-3D	Soil Gas	6/27/2012 16:24	<input type="checkbox"/>		A											
1206836-009	VE-3S	Soil Gas	6/27/2012 16:36	<input type="checkbox"/>		A											
1206836-010	VM-8	Soil Gas	6/27/2012 17:05	<input type="checkbox"/>		A											
1206836-011	VE-2D	Soil Gas	6/27/2012 18:04	<input type="checkbox"/>		A											
1206836-012	VE-2S	Soil Gas	6/27/2012 18:13	<input type="checkbox"/>		A											

**Test Legend:**

1	HELIUM_SOILGAS	2	TO15-8010_SOIL(UG/M3)	3		4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A, 009A, 010A, 011A, 012A contain testgroup.

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **Endpoint** Date and Time Received: **6/28/2012 11:46:09 AM**  
 Project Name: **TM Dublin; Crow Canyon** Login Reviewed by: **Melissa Valles**  
 WorkOrder N°: **1206836** Matrix: Soil Gas Carrier: Client Drop-In

**Chain of Custody (COC) Information**

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:





Endpoint 98 Battery Street, Suite 200 San Francisco, CA 94111	Client Project ID: TM Dublin; Crow Canyon	Date Sampled: 06/27/12
	Client Contact: Mehrdad Javaher	Date Received: 06/28/12
	Client P.O.:	Date Extracted: 06/28/12-06/29/12
		Date Analyzed: 06/28/12-06/29/12

**Halogenated Volatile Organic Compounds in µg/m<sup>3</sup>\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1206836

Lab ID	1206836-001A	1206836-002A	1206836-004A	1206836-006A	Reporting Limit for DF=1	
Client ID	VM-1D	VM-9SS	VM-4S	VM-7	Soil Gas	W
Matrix	Soil Gas	Soil Gas	Soil Gas	Soil Gas		
DF	1	1	1	1		
Initial Pressure (psia)	11.82	12.26	12.14	12.01		
Final Pressure (psia)	23.54	24.42	24.19	23.94		

Compound	Concentration				µg/m <sup>3</sup>	ug/L
Bromodichloromethane	ND	ND	ND	ND	14	NA
Bromoform	ND	ND	ND	ND	21	NA
Bromomethane	ND	ND	ND	ND	7.9	NA
Carbon Tetrachloride	ND	ND	ND	ND	13	NA
Chlorobenzene	ND	ND	ND	ND	9.4	NA
Chloroethane	ND	ND	ND	ND	5.4	NA
Chloroform	ND	ND	ND	ND	9.9	NA
Chloromethane	ND	ND	ND	ND	4.2	NA
Dibromochloromethane	ND	ND	ND	ND	17	NA
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	16	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	12	NA
1,3-Dichlorobenzene	ND	ND	ND	ND	12	NA
1,4-Dichlorobenzene	ND	ND	ND	ND	12	NA
Dichlorodifluoromethane	ND	ND	ND	ND	10	NA
1,1-Dichloroethane	ND	ND	ND	ND	8.2	NA
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND	8.2	NA
1,1-Dichloroethene	ND	ND	ND	ND	8.1	NA
cis-1,2-Dichloroethene	ND	ND	ND	ND	8.1	NA
trans-1,2-Dichloroethene	ND	ND	ND	ND	8.1	NA
1,2-Dichloropropane	ND	ND	ND	ND	9.4	NA
cis-1,3-Dichloropropene	ND	ND	ND	ND	9.2	NA
trans-1,3-Dichloropropene	ND	ND	ND	ND	9.2	NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND	ND	ND	14	NA
Freon 113	ND	ND	ND	ND	16	NA
Methylene chloride	ND	ND	ND	ND	7.1	NA
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	14	NA
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	14	NA
Tetrachloroethene	520	7200	2100	240	14	NA
1,2,4-Trichlorobenzene	ND	ND	ND	ND	15	NA
1,1,1-Trichloroethane	ND	ND	ND	ND	11	NA
1,1,2-Trichloroethane	ND	ND	ND	ND	11	NA
Trichloroethene	ND	77	ND	ND	11	NA
Trichlorofluoromethane	ND	ND	ND	ND	11	NA
Vinyl Chloride	ND	ND	ND	ND	5.2	NA

**Surrogate Recoveries (%)**

%SS1:	96	93	93	93
%SS2:	102	98	101	98
%SS3:	106	104	105	103

**Comments**

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Endpoint 98 Battery Street, Suite 200 San Francisco, CA 94111	Client Project ID: TM Dublin; Crow Canyon	Date Sampled: 06/27/12
	Client Contact: Mehrdad Javaher	Date Received: 06/28/12
	Client P.O.:	Date Extracted: 06/28/12-06/29/12
		Date Analyzed: 06/28/12-06/29/12

**Halogenated Volatile Organic Compounds in µg/m<sup>3</sup>\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1206836

Lab ID	1206836-007A	1206836-010A	1206836-011A	1206836-012A	Reporting Limit for DF=1	
Client ID	VM-1S	VM-8	VE-2D	VE-2S	Soil Gas	W
Matrix	Soil Gas	Soil Gas	Soil Gas	Soil Gas		
DF	1	1	1	1		
Initial Pressure (psia)	11.68	11.91	12.33	12.62		
Final Pressure (psia)	23.26	23.73	24.56	25.14		

Compound	Concentration				µg/m <sup>3</sup>	ug/L
Bromodichloromethane	ND	ND	ND	ND	14	NA
Bromoform	ND	ND	ND	ND	21	NA
Bromomethane	ND	ND	ND	ND	7.9	NA
Carbon Tetrachloride	ND	ND	ND	ND	13	NA
Chlorobenzene	ND	ND	ND	ND	9.4	NA
Chloroethane	ND	ND	ND	ND	5.4	NA
Chloroform	ND	ND	ND	ND	9.9	NA
Chloromethane	ND	ND	ND	ND	4.2	NA
Dibromochloromethane	ND	ND	ND	ND	17	NA
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	16	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	12	NA
1,3-Dichlorobenzene	ND	ND	ND	ND	12	NA
1,4-Dichlorobenzene	ND	ND	ND	ND	12	NA
Dichlorodifluoromethane	ND	ND	ND	ND	10	NA
1,1-Dichloroethane	ND	ND	ND	ND	8.2	NA
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND	8.2	NA
1,1-Dichloroethene	ND	ND	ND	ND	8.1	NA
cis-1,2-Dichloroethene	ND	26	ND	ND	8.1	NA
trans-1,2-Dichloroethene	ND	ND	ND	ND	8.1	NA
1,2-Dichloropropane	ND	ND	ND	ND	9.4	NA
cis-1,3-Dichloropropene	ND	ND	ND	ND	9.2	NA
trans-1,3-Dichloropropene	ND	ND	ND	ND	9.2	NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND	ND	ND	14	NA
Freon 113	ND	ND	ND	ND	16	NA
Methylene chloride	ND	ND	ND	ND	7.1	NA
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	14	NA
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	14	NA
Tetrachloroethene	1200	820	5100	14,000	14	NA
1,2,4-Trichlorobenzene	ND	ND	ND	ND	15	NA
1,1,1-Trichloroethane	ND	ND	ND	ND	11	NA
1,1,2-Trichloroethane	ND	ND	ND	ND	11	NA
Trichloroethene	ND	140	100	24	11	NA
Trichlorofluoromethane	ND	ND	ND	ND	11	NA
Vinyl Chloride	ND	ND	ND	ND	5.2	NA

**Surrogate Recoveries (%)**

%SS1:	94	96	94	95	
%SS2:	100	99	100	99	
%SS3:	105	105	102	102	

**Comments**

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Endpoint 98 Battery Street, Suite 200 San Francisco, CA 94111	Client Project ID: TM Dublin; Crow Canyon	Date Sampled: 06/27/12
	Client Contact: Mehrdad Javaher	Date Received: 06/28/12
	Client P.O.:	Date Extracted: 06/29/12
		Date Analyzed: 06/29/12

**Halogenated Volatile Organics by P&T and GC/MS in µg/m<sup>3</sup>\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1206836

Lab ID	1206836-003A	1206836-005A	1206836-008A	1206836-009A	Reporting Limit for DF=1	
Client ID	VE-1D	VE-1S	VE-3D	VE-3S	Soil Gas	W
Matrix	Soil Gas	Soil Gas	Soil Gas	Soil Gas		
DF	1	1	1	1		
Initial Pressure (psia)	13.03	12.27	12.14	12.68		
Final Pressure (psia)	25.98	24.44	24.18	25.28		

Compound	Concentration				µg/m <sup>3</sup>	ug/L
Bromochloromethane	ND	ND	ND	ND	0.25	NA
Bromodichloromethane	ND	ND	ND	ND	500	NA
Bromoform	ND	ND	ND	ND	500	NA
Bromomethane	ND	ND	ND	ND	500	NA
Carbon Tetrachloride	ND	ND	ND	ND	500	NA
Chlorobenzene	ND	ND	ND	ND	500	NA
Chloroethane	ND	ND	ND	ND	500	NA
Chloroform	ND	ND	ND	ND	500	NA
Chloromethane	1000	ND	ND	ND	500	NA
Dibromochloromethane	ND	ND	ND	ND	500	NA
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	500	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	500	NA
1,3-Dichlorobenzene	ND	ND	ND	ND	500	NA
1,4-Dichlorobenzene	ND	ND	ND	ND	500	NA
Dichlorodifluoromethane	ND	ND	ND	ND	500	NA
1,1-Dichloroethane	ND	ND	ND	ND	500	NA
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND	500	NA
1,1-Dichloroethene	ND	ND	ND	ND	500	NA
cis-1,2-Dichloroethene	ND	ND	ND	ND	500	NA
trans-1,2-Dichloroethene	ND	ND	ND	ND	500	NA
1,2-Dichloropropane	ND	ND	ND	ND	500	NA
cis-1,3-Dichloropropene	ND	ND	ND	ND	500	NA
trans-1,3-Dichloropropene	ND	ND	ND	ND	500	NA
Ethanol	ND	ND	ND	ND	50000	NA
Freon 113	ND	ND	ND	ND	10000	NA
Methylene chloride	ND	ND	ND	ND	500	NA
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	500	NA
1,1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	500	NA
Tetrachloroethene	4500	12,000	790	ND	500	NA
1,2,4-Trichlorobenzene	ND	ND	ND	ND	500	NA
1,1,1-Trichloroethane	ND	ND	ND	ND	500	NA
1,1,2-Trichloroethane	ND	ND	ND	ND	500	NA
Trichloroethene	ND	ND	ND	ND	500	NA
Trichlorofluoromethane	ND	ND	ND	ND	500	NA
Vinyl Chloride	ND	ND	ND	ND	500	NA

**Surrogate Recoveries (%)**

%SS1:	111	109	110	109
%SS2:	93	91	90	89
%SS3:	111	112	114	110

**Comments**

\*soil vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

%SS = Percent Recovery of Surrogate Standard  
 DF = Dilution Factor





Endpoint  98 Battery Street, Suite 200  San Francisco, CA 94111	Client Project ID: TM Dublin; Crow Canyon	Date Sampled: 06/27/12
	Client Contact: Mehrdad Javaher	Date Received: 06/28/12
	Client P.O.:	Date Extracted: 06/29/12
		Date Analyzed: 06/29/12

**Leak Check Compound\***

Extraction method: TO15

Analytical methods: TO15

Work Order: 1206836

Lab ID	Client ID	Matrix	Initial Pressure	Final Pressure	Isopropyl Alcohol	DF	% SS	Comments
001A	VM-1D	Soil Gas	11.82	23.54	ND	1	N/A	
002A	VM-9SS	Soil Gas	12.26	24.42	ND	1	N/A	
004A	VM-4S	Soil Gas	12.14	24.19	ND	1	N/A	
006A	VM-7	Soil Gas	12.01	23.94	ND	1	N/A	
007A	VM-1S	Soil Gas	11.68	23.26	ND	1	N/A	
010A	VM-8	Soil Gas	11.91	23.73	ND	1	N/A	
011A	VE-2D	Soil Gas	12.33	24.56	ND	1	N/A	
012A	VE-2S	Soil Gas	12.62	25.14	ND	1	N/A	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	SoilGas	psia	psia	50	µg/m³

\* leak check compound is reported in µg/m³.  
 ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.  
 The (liquid) Leak Check reference is:  
 DTSC, Advisory-Active Soil Gas Investigations, April 2012, page 17, section 4.2.2.1:  
 "The laboratory reports should quantify and annotate all detections of the leak check compound at the reporting limit of the target analytes."  
 %SS = Percent Recovery of Surrogate Standard  
 DF = Dilution Factor



Endpoint  98 Battery Street, Suite 200  San Francisco, CA 94111	Client Project ID: TM Dublin; Crow Canyon	Date Sampled: 06/27/12
	Client Contact: Mehrdad Javaher	Date Received: 06/28/12
	Client P.O.:	Date Extracted: 06/29/12
		Date Analyzed: 06/29/12

**Leak Check Compound\***

Extraction method: SW5030B

Analytical methods: SW8260B

Work Order: 1206836

Lab ID	Client ID	Matrix	Initial Pressure	Final Pressure	Isopropyl Alcohol	DF	% SS	Comments
003A	VE-1D	Soil Gas	13.03	25.98	ND	1	N/A	
005A	VE-1S	Soil Gas	12.27	24.44	ND	1	N/A	
008A	VE-3D	Soil Gas	12.14	24.18	ND	1	N/A	
009A	VE-3S	Soil Gas	12.68	25.28	ND	1	N/A	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	Soil Vapor	psia	psia	20000	µg/m³

\* leak check compound is reported in µg/m³.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

The (liquid) Leak Check reference is:  
 DTSC, Advisory-Active Soil Gas Investigations, April 2012, page 17, section 4.2.2.1:  
 "The laboratory reports should quantify and annotate all detections of the leak check compound at the reporting limit of the target analytes."

%SS = Percent Recovery of Surrogate Standard  
 DF = Dilution Factor



**QC SUMMARY REPORT FOR ASTM D 1946-90**

W.O. Sample Matrix: Soil Vapor

QC Matrix: Soilgas

BatchID: 68833

WorkOrder: 1206836

EPA Method: ASTM D 1946-90		Extraction: ASTM D 1946-90					Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	%	%	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
Helium	N/A	0.010	N/A	N/A	N/A	111	N/A	N/A	60 - 140	
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

BATCH 68833 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1206836-005A	06/27/12 2:17 PM	07/05/12	07/05/12 6:18 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$   
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



### QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil Vapor/Soilgas

QC Matrix: Water

BatchID: 68750

WorkOrder: 1206836

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1206815-003A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
Chlorobenzene	ND	10	84.5	89	5.12	86.3	70 - 130	20	70 - 130	
1,2-Dibromoethane (EDB)	ND	10	96.6	96.7	0.0996	91.2	70 - 130	20	70 - 130	
1,2-Dichloroethane (1,2-DCA)	ND	10	106	105	0.861	93.7	70 - 130	20	70 - 130	
1,1-Dichloroethene	ND	10	82	87.3	6.35	80.3	70 - 130	20	70 - 130	
Trichloroethene	ND	10	89.1	94.3	5.59	85.9	70 - 130	20	70 - 130	
%SS1:	113	25	112	113	0.492	110	70 - 130	20	70 - 130	
%SS2:	97	25	91	92	0.618	97	70 - 130	20	70 - 130	
%SS3:	112	2.5	111	109	2.22	110	70 - 130	20	70 - 130	

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

#### BATCH 68750 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1206836-003A	06/27/12 1:21 PM	06/29/12	06/29/12 3:04 PM	1206836-003A	06/27/12 1:21 PM	06/29/12	06/29/12 3:04 PM
1206836-005A	06/27/12 2:17 PM	06/29/12	06/29/12 3:44 PM	1206836-005A	06/27/12 2:17 PM	06/29/12	06/29/12 3:44 PM
1206836-008A	06/27/12 4:24 PM	06/29/12	06/29/12 4:23 PM	1206836-008A	06/27/12 4:24 PM	06/29/12	06/29/12 4:23 PM
1206836-009A	06/27/12 4:36 PM	06/29/12	06/29/12 5:39 PM	1206836-009A	06/27/12 4:36 PM	06/29/12	06/29/12 5:39 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.  
 Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



### QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 68747

WorkOrder: 1206836

Analyte	Extraction: TO15		Spiked Sample ID: N/A				Acceptance Criteria (%)		
	Sample nL/L	Spiked nL/L	MS % Rec.	MSD % Rec.	MS-MSD % RPD	LCS % Rec.	MS / MSD	RPD	LCS
Acrylonitrile	N/A	25	N/A	N/A	N/A	88.8	N/A	N/A	60 - 140
tert-Amyl methyl ether (TAME)	N/A	25	N/A	N/A	N/A	102	N/A	N/A	60 - 140
Benzene	N/A	25	N/A	N/A	N/A	103	N/A	N/A	60 - 140
Benzyl chloride	N/A	25	N/A	N/A	N/A	124	N/A	N/A	60 - 140
Bromodichloromethane	N/A	25	N/A	N/A	N/A	108	N/A	N/A	60 - 140
Bromoform	N/A	25	N/A	N/A	N/A	116	N/A	N/A	60 - 140
t-Butyl alcohol (TBA)	N/A	25	N/A	N/A	N/A	84	N/A	N/A	60 - 140
Carbon Disulfide	N/A	25	N/A	N/A	N/A	91.2	N/A	N/A	60 - 140
Carbon Tetrachloride	N/A	25	N/A	N/A	N/A	127	N/A	N/A	60 - 140
Chlorobenzene	N/A	25	N/A	N/A	N/A	104	N/A	N/A	60 - 140
Chloroethane	N/A	25	N/A	N/A	N/A	90.2	N/A	N/A	60 - 140
Chloroform	N/A	25	N/A	N/A	N/A	103	N/A	N/A	60 - 140
Chloromethane	N/A	25	N/A	N/A	N/A	93.5	N/A	N/A	60 - 140
Dibromochloromethane	N/A	25	N/A	N/A	N/A	116	N/A	N/A	60 - 140
1,2-Dibromo-3-chloropropane	N/A	25	N/A	N/A	N/A	112	N/A	N/A	60 - 140
1,2-Dibromoethane (EDB)	N/A	25	N/A	N/A	N/A	107	N/A	N/A	60 - 140
1,2-Dichlorobenzene	N/A	25	N/A	N/A	N/A	109	N/A	N/A	60 - 140
1,3-Dichlorobenzene	N/A	25	N/A	N/A	N/A	107	N/A	N/A	60 - 140
1,4-Dichlorobenzene	N/A	25	N/A	N/A	N/A	111	N/A	N/A	60 - 140
Dichlorodifluoromethane	N/A	25	N/A	N/A	N/A	107	N/A	N/A	60 - 140
1,1-Dichloroethane	N/A	25	N/A	N/A	N/A	94.9	N/A	N/A	60 - 140
1,2-Dichloroethane (1,2-DCA)	N/A	25	N/A	N/A	N/A	111	N/A	N/A	60 - 140
1,1-Dichloroethene	N/A	25	N/A	N/A	N/A	97.8	N/A	N/A	60 - 140
cis-1,2-Dichloroethene	N/A	25	N/A	N/A	N/A	97.8	N/A	N/A	60 - 140
trans-1,2-Dichloroethene	N/A	25	N/A	N/A	N/A	97.4	N/A	N/A	60 - 140
1,2-Dichloropropane	N/A	25	N/A	N/A	N/A	100	N/A	N/A	60 - 140
cis-1,3-Dichloropropene	N/A	25	N/A	N/A	N/A	107	N/A	N/A	60 - 140
trans-1,3-Dichloropropene	N/A	25	N/A	N/A	N/A	109	N/A	N/A	60 - 140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	N/A	25	N/A	N/A	N/A	102	N/A	N/A	60 - 140
Diisopropyl ether (DIPE)	N/A	25	N/A	N/A	N/A	88.5	N/A	N/A	60 - 140
1,4-Dioxane	N/A	25	N/A	N/A	N/A	115	N/A	N/A	60 - 140

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



### QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 68747

WorkOrder: 1206836

Analyte	Extraction: TO15		Spiked Sample ID: N/A						
	Sample nL/L	Spiked nL/L	MS % Rec.	MSD % Rec.	MS-MSD % RPD	LCS % Rec.	Acceptance Criteria (%)		
							MS / MSD	RPD	LCS
Ethyl acetate	N/A	25	N/A	N/A	N/A	80.9	N/A	N/A	60 - 140
Ethyl tert-butyl ether (ETBE)	N/A	25	N/A	N/A	N/A	96	N/A	N/A	60 - 140
Ethylbenzene	N/A	25	N/A	N/A	N/A	102	N/A	N/A	60 - 140
Freon 113	N/A	25	N/A	N/A	N/A	99.5	N/A	N/A	60 - 140
Hexachlorobutadiene	N/A	25	N/A	N/A	N/A	108	N/A	N/A	60 - 140
4-Methyl-2-pentanone (MIBK)	N/A	25	N/A	N/A	N/A	94.8	N/A	N/A	60 - 140
Methyl-t-butyl ether (MTBE)	N/A	25	N/A	N/A	N/A	98.6	N/A	N/A	60 - 140
Methylene chloride	N/A	25	N/A	N/A	N/A	83.8	N/A	N/A	60 - 140
Naphthalene	N/A	25	N/A	N/A	N/A	138	N/A	N/A	60 - 140
Styrene	N/A	25	N/A	N/A	N/A	104	N/A	N/A	60 - 140
1,1,1,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	117	N/A	N/A	60 - 140
1,1,2,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	100	N/A	N/A	60 - 140
Tetrachloroethene	N/A	25	N/A	N/A	N/A	114	N/A	N/A	60 - 140
Tetrahydrofuran	N/A	25	N/A	N/A	N/A	122	N/A	N/A	60 - 140
Toluene	N/A	25	N/A	N/A	N/A	101	N/A	N/A	60 - 140
1,2,4-Trichlorobenzene	N/A	25	N/A	N/A	N/A	136	N/A	N/A	60 - 140
1,1,1-Trichloroethane	N/A	25	N/A	N/A	N/A	112	N/A	N/A	60 - 140
1,1,2-Trichloroethane	N/A	25	N/A	N/A	N/A	106	N/A	N/A	60 - 140
Trichloroethene	N/A	25	N/A	N/A	N/A	109	N/A	N/A	60 - 140
1,2,4-Trimethylbenzene	N/A	25	N/A	N/A	N/A	109	N/A	N/A	60 - 140
1,3,5-Trimethylbenzene	N/A	25	N/A	N/A	N/A	107	N/A	N/A	60 - 140
Vinyl Chloride	N/A	25	N/A	N/A	N/A	100	N/A	N/A	60 - 140
%SS1:	N/A	500	N/A	N/A	N/A	126	N/A	N/A	60 - 140
%SS2:	N/A	500	N/A	N/A	N/A	119	N/A	N/A	60 - 140
%SS3:	N/A	500	N/A	N/A	N/A	119	N/A	N/A	60 - 140

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





### QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 68747

WorkOrder: 1206836

EPA Method: TO15		Extraction: TO15				Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS

BATCH 68747 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1206836-001A	06/27/12 11:22 AM	06/29/12	06/29/12 3:49 AM	1206836-002A	06/27/12 12:41 PM	06/29/12	06/29/12 4:35 AM
1206836-004A	06/27/12 1:48 PM	06/29/12	06/29/12 6:09 AM	1206836-006A	06/27/12 3:11 PM	06/29/12	06/29/12 7:43 AM
1206836-007A	06/27/12 4:00 PM	06/29/12	06/29/12 8:29 AM	1206836-010A	06/27/12 5:05 PM	06/29/12	06/29/12 10:49 AM
1206836-011A	06/27/12 6:04 PM	06/29/12	06/29/12 11:36 AM	1206836-012A	06/27/12 6:13 PM	06/29/12	06/29/12 12:23 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .  
 \* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.  
 Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

## **Appendix B**

### **Field Data Sheets**



### SYSTEM MONITORING DATA SHEET

Client: **Crow Canyon Cleaners**  
 Site: **7272 Crow Canyon Rd**  
**Dublin CA**

Job #: **TMDUBLIN**  
 Technician: GP  
 Date: 06/28/12

<b>System Parameters</b>		Arrival		Departure			
		Total Hour Meter (blower)	0.0	2.5			
		Blower Amps					
<b>Influent</b>		Time					
	Pipe ID diameter (in.)	3"	3"	3"			
	Differential Pressure (in. H <sub>2</sub> O)	.170					
	Vacuum (in. H <sub>2</sub> O)	10"					
	Temperature (°F)	65					
	Total hydrocarbons (ppmv)	9.3					
	Sample ID #	INFLUENT	Sample Time				
	Analyses	TPH as Gas, BTEX, MTBE					
<b>Midpoint</b>		Total hydrocarbons (ppmv)	0.0				
	Sample ID #	MIDPOINT	Sample Time				
	Analyses	TPH as Gas, BTEX, MTBE					
<b>Effluent</b>		Time					
	Pipe ID diameter (in.)	2"	2"	2"			
	Differential Pressure (in. H <sub>2</sub> O)	1.18					
	Temperature (°F)	65					
	Total hydrocarbons (ppmv)	0.0					
	Sample ID #	EFFLUENT	Sample Time				
	Analyses	TPH as Gas, BTEX, MTBE					
	Active on arrival?	(circle one) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Monitoring device: FID <input type="checkbox"/> PID <input checked="" type="checkbox"/> IR <input type="checkbox"/>			
	Active on departure?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Dilution Air Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
	Shut Down Date	N/A		Restart date: N/A			
<b>Wells</b>	Name	2D	2S	3D	3S	1D	1S
	Pipe ID diameter (in.)	2"	2"	2"	2"	2"	2"
	Vacuum (in. H <sub>2</sub> O)	4	4	4	4	3.5	3.9
	Differential Pressure (in. H <sub>2</sub> O)	.071	.1	.2	.14	.14	.15
	Temperature (°F)	66 →					
	Total hydrocarbons (ppmv)	0.0	0.0	2.5	0.0	0.0	.2

Comments: System Start-up

6/28/12

Started System @ 0830

TRF .170	10" vac	65°	9.3 ppm
VE-2D .071	4" vac		0.0 ppm
VE-2S .1	4"		0.0 ppm
VE-3D .2	4"		2.5 ppm
VE-3S .14	4"		0.0 ppm
VE-7D .14	3.5"		0.0 ppm
VE-1S .15	3.9		.2 ppm

$$VM 1S = .279''$$

$$EFF 1.18$$

$$VM 1D = .346''$$

$$Temp 65$$

$$VM 9SS = .44''$$

$$VM-1D = .02$$

$$VM-3S = .042$$

$$VM-3D = .027$$

$$VM-7 = 0.0$$

$$VM-8 = .1$$

$$VM-4S = .41''$$

**SYSTEM MONITORING DATA SHEET**



Client: **Crow Canyon Cleaners**  
 Site: **7272 Crow Canyon Rd**  
**Dublin CA**

Job #: **TMDUBLIN**  
 Technician: *[Signature]*  
 Date: **7/3/12**

System Parameters		Arrival			Departure		
Total Hour Meter (blower)		118			120.6		
Blower Amps		16/16/16					
<b>Influent</b>							
Time							
Pipe ID diameter (in.)		3"	3"		3"		
Differential Pressure (in. H <sub>2</sub> O)		.22					
Vacuum (in. H <sub>2</sub> O)		6"					
Temperature (°F)		65					
Total hydrocarbons (ppmv)		0.0					
Sample ID #		INFLUENT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE						
<b>Effluent</b>							
Time							
Pipe ID diameter (in.)		2"	2"		2"		
Differential Pressure (in. H <sub>2</sub> O)		1.25					
Temperature (°F)		65					
Total hydrocarbons (ppmv)		0.0					
Sample ID #		EFFLUENT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE						
		Active on arrival? <sup>(circle one)</sup> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Active on departure? <sup>(circle one)</sup> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Shut Down Date		Monitoring device: <sup>(circle one)</sup> FID <input type="checkbox"/> PID <input checked="" type="checkbox"/> IR <input type="checkbox"/> Dilution Air Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Restart date:			
<b>Wells</b>							
Name		VE-2D	VE-2S	VE-3D	VE-3S	VE-1D	VE-1S
Pipe ID diameter (in.)		2"	2"	2"	2"	2"	2"
Vacuum (in. H <sub>2</sub> O)							
Differential Pressure (in. H <sub>2</sub> O)							
Temperature (°F)							
Total hydrocarbons (ppmv)							

92  
SCFM

Comments: 32", 25" cc-1, cc-2 mid point 0.0 ppm  
0.0 / .035 / .093  
@ 12amp Voltage Drops (2) 203  
ATV312HU 40M3

**SYSTEM MONITORING DATA SHEET**



Client: **Crow Canyon Cleaners**

Job #: **TMDUBLIN**

Site: **7272 Crow Canyon Rd**

Technician: SP

**Dublin CA**

Date: 7/13/12

<b>System Parameters</b>		Arrival		Departure
Total Hour Meter (blower)		360.9		362.7
Blower Amps		8/8/8		7.5/7.3/7.5
<b>Influent</b>				
Time		0937		
Pipe ID diameter (in.)		3"	3"	3"
Differential Pressure (in. H <sub>2</sub> O)		.2		
Vacuum (in. H <sub>2</sub> O)		-5.5"		
Temperature (°F)		62		
Total hydrocarbons (ppmv)		25.0 ppm		
Sample ID #		INFLUENT	Sample Time	
Analyses		TPH as Gas, BTEX, MTBE		
<b>Effluent</b>				
Time		0938		
Pipe ID diameter (in.)		2"	2"	2"
Differential Pressure (in. H <sub>2</sub> O)		1.14		
Temperature (°F)		64		
Total hydrocarbons (ppmv)		0.0		
Sample ID #		EFFLUENT	Sample Time	
Analyses		TPH as Gas, BTEX, MTBE		
Active on arrival?		(circle one) Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		Monitoring device: FID <input checked="" type="checkbox"/> PID <input checked="" type="checkbox"/> IR <input type="checkbox"/>
Active on departure?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Dilution Air Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Shut Down Date		Restart date:		
<b>Wells</b>				
Name				
Pipe ID diameter (in.)		2"	2"	2"
Vacuum (in. H <sub>2</sub> O)				
Differential Pressure (in. H <sub>2</sub> O)				
Temperature (°F)				
Total hydrocarbons (ppmv)				

Comments:

88116205227

B

# SYSTEM MONITORING DATA SHEET



Client: **Crow Canyon Cleaners**  
 Site: **7272 Crow Canyon Rd**  
**Dublin CA**

Job #: **TMDUBLIN**  
 Technician: SP  
 Date: 7/19/12

System Parameters	Arrival	Departure			
Total Hour Meter (blower)	509.4	16.4, 16.4 / 11.7, 11.7			
Blower Amps	10.3 / 10.2 / 2.2 / 7.4 / 7.0	318.4			
<b>Influent</b>					
Time					
Pipe ID diameter (in.)	3"	3"	3"		
Differential Pressure (in. H <sub>2</sub> O)	.46				
Vacuum (in. H <sub>2</sub> O)	104				
Temperature (°F)	90.8 / 90				
Total hydrocarbons (ppmv)	1.0				
Sample ID #	INFLUENT	Sample Time	1440		
Analyses	TPH as Gas, BTEX, MTBE				
<b>Effluent</b>					
Time					
Pipe ID diameter (in.)	2"	2"	2"		
Differential Pressure (in. H <sub>2</sub> O)	2.16				
Temperature (°F)	99°				
Total hydrocarbons (ppmv)	0.0				
Sample ID #	EFFLUENT	Sample Time			
Analyses	TPH as Gas, BTEX, MTBE				
	Active on arrival? <small>(circle one)</small> Yes <input checked="" type="radio"/> No <input type="radio"/> Active on departure? <small>(circle one)</small> Yes <input checked="" type="radio"/> No <input type="radio"/> Shut Down Date		Monitoring device: <small>(circle one)</small> FID <input checked="" type="radio"/> PID <input type="radio"/> IR <input type="radio"/> Dilution Air Yes <input type="radio"/> No <input checked="" type="radio"/> Restart date:		
<b>Wells</b>					
Name					
Pipe ID diameter (in.)	2"	2"	2"	2"	2"
Vacuum (in. H <sub>2</sub> O)					
Differential Pressure (in. H <sub>2</sub> O)					
Temperature (°F)					
Total hydrocarbons (ppmv)					

11.3 ←

Comments: 125 SCFM / Bag?

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### SYSTEM MONITORING DATA SHEET

Client: **Crow Canyon Cleaners**  
 Site: **7272 Crow Canyon Rd**  
**Dublin CA**

Job #: **TMDUBLIN**  
 Technician: SP  
 Date: 7/26/12

System Parameters	Arrival		Departure	
Total Hour Meter (blower)	674.0			
Blower Amps				
<b>Influent</b>				
Time				
Pipe ID diameter (in.)	3"	3"	3"	
Differential Pressure (in. H <sub>2</sub> O)	.3			
Vacuum (in. H <sub>2</sub> O)	10"			
Temperature (°F)	67			
Total hydrocarbons (ppmv)	0.0			
Sample ID #	INFLUENT	Sample Time		
Analyses	TPH as Gas, BTEX, MTBE			
<b>Midpoint</b>				
Total hydrocarbons (ppmv)	0.0			
Sample ID #	MIDPOINT	Sample Time		
Analyses	TPH as Gas, BTEX, MTBE			
<b>Effluent</b>				
Time				
Pipe ID diameter (in.)	2"	2"	2"	
Differential Pressure (in. H <sub>2</sub> O)	2.0			
Temperature (°F)	72			
Total hydrocarbons (ppmv)	0.0?			
Sample ID #	EFFLUENT	Sample Time		
Analyses	TPH as Gas, BTEX, MTBE			
	(circle one) Active on arrival? <input checked="" type="radio"/> Yes <input type="radio"/> No Active on departure? <input checked="" type="radio"/> Yes <input type="radio"/> No Shut Down Date		(circle one) Monitoring device: FID <input type="checkbox"/> PID <input type="checkbox"/> IR <input type="checkbox"/> Dilution Air Yes <input type="checkbox"/> No <input type="checkbox"/> Restart date:	
<b>Wells</b>				
Name	VE-25	VE-15		
Pipe ID diameter (in.)	2"	2"	2"	
Vacuum (in. H <sub>2</sub> O)	7"	7"		
Differential Pressure (in. H <sub>2</sub> O)	.17	.9		
Temperature (°F)	67	67		
Total hydrocarbons (ppmv)				

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





### SYSTEM MONITORING DATA SHEET

Client: **Crow Canyon Cleaners**

Job #: TMDUBLIN

Site: 7272 Crow Canyon Rd

Technician: SP

Dublin CA

Date: 7/27/12

System Parameters	Arrival	Departure		
Total Hour Meter (blower)	701			
Blower Amps				
<b>Influent</b>				
Time				
Pipe ID diameter (in.)	3"	3"	3"	3"
Differential Pressure (in. H <sub>2</sub> O)	0.3			
Vacuum (in. H <sub>2</sub> O)	10"			
Temperature (°F)	71			
Total hydrocarbons (ppmv)	0.0			
Sample ID #	INFLUENT	Sample Time		
Analyses	TPH as Gas, BTEX, MTBE			
<b>Midpoint</b>				
Total hydrocarbons (ppmv)	0.0			
Sample ID #	MIDPOINT	Sample Time		
Analyses	TPH as Gas, BTEX, MTBE			
<b>Effluent</b>				
Time				
Pipe ID diameter (in.)	2"	2"	2"	2"
Differential Pressure (in. H <sub>2</sub> O)	2.0			
Temperature (°F)	72			
Total hydrocarbons (ppmv)	0.0			
Sample ID #	EFFLUENT	Sample Time		
Analyses	TPH as Gas, BTEX, MTBE			
	(circle one)		(circle one)	
Active on arrival?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Monitoring device: FID	PID <input checked="" type="radio"/> IR <input type="radio"/>
Active on departure?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Dilution Air	Yes <input type="radio"/> No <input checked="" type="radio"/>
Shut Down Date	7/27/12		Restart date:	
<b>Wells</b>				
Name				
Pipe ID diameter (in.)	2"	2"	2"	2"
Vacuum (in. H <sub>2</sub> O)				
Differential Pressure (in. H <sub>2</sub> O)				
Temperature (°F)				
Total hydrocarbons (ppmv)				

Comments: Shutdown System - pending AQMD Reduction Request Approval



## SYSTEM MONITORING DATA SHEET

Client: **Crow Canyon Cleaners**

Job #: **TMDUBLIN**

Site: **7272 Crow Canyon Rd**

Technician: SP

**Dublin CA**

Date: 8/2/12

System Parameters	Arrival		Departure			
Total Hour Meter (blower)	702		704			
Blower Amps						
<b>Influent</b>						
Time						
Pipe ID diameter (in.)	3"	3"	3"			
Differential Pressure (in. H <sub>2</sub> O)	.3					
Vacuum (in. H <sub>2</sub> O)	11					
Temperature (°F)	64					
Total hydrocarbons (ppmv)	6.0 ppm					
Sample ID #	INFLUENT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE					
<b>Midpoint</b>						
Total hydrocarbons (ppmv)	0.0					
Sample ID #	MIDPOINT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE					
<b>Effluent</b>						
Time						
Pipe ID diameter (in.)	2"	2"	2"			
Differential Pressure (in. H <sub>2</sub> O)	2.0					
Temperature (°F)	95					
Total hydrocarbons (ppmv)	0.0					
Sample ID #	EFFLUENT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE					
	(circle one) Active on arrival? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		(circle one) Monitoring device: FID <input type="checkbox"/> PID <input checked="" type="checkbox"/> IR <input type="checkbox"/>			
	Active on departure? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Dilution Air Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
	Shut Down Date		Restart date:			
<b>Wells</b>						
Name						
Pipe ID diameter (in.)	2"	2"	2"	2"	2"	2"
Vacuum (in. H <sub>2</sub> O)						
Differential Pressure (in. H <sub>2</sub> O)						
Temperature (°F)						
Total hydrocarbons (ppmv)						

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# SYSTEM MONITORING DATA SHEET



Client: **Crow Canyon Cleaners**  
 Site: **7272 Crow Canyon Rd**  
**Dublin CA**

Job #: **TMDUBLIN**  
 Technician: [Signature]  
 Date: **8/18/12**

stem Parameters	Arrival		Departure	
Total Hour Meter (blower)	885		887.5	
Blower Amps	16.7, 16.5	11.7, 11.7, 11.8		
<b>Influent</b>				
Time	0715		0850	
Pipe ID diameter (in.)	3"	3"	3"	
Differential Pressure (in. H <sub>2</sub> O)	0.37		1.22	
Vacuum (in. H <sub>2</sub> O)	12"		40"	
Temperature (°F)	64°			
Total hydrocarbons (ppmv)	0.0	0.0 Bag sample	3.0	
Sample ID #	INFLUENT	Sample Time		
Analyses	TPH as Gas, BTEX, MTBE			
<b>Midpoint</b>				
Total hydrocarbons (ppmv)	0.0			
Sample ID #	MIDPOINT	Sample Time		
Analyses	TPH as Gas, BTEX, MTBE			
<b>Effluent</b>				
Time	0715			
Pipe ID diameter (in.)	2"	2"	2"	
Differential Pressure (in. H <sub>2</sub> O)	2.0			
Temperature (°F)	95°			
Total hydrocarbons (ppmv)	0.0			
Sample ID #	EFFLUENT	Sample Time		
Analyses	TPH as Gas, BTEX, MTBE			
	(circle one) Active on arrival? <input checked="" type="radio"/> Yes <input type="radio"/> No Active on departure? <input checked="" type="radio"/> Yes <input type="radio"/> No Shut Down Date: _____		(circle one) Monitoring device: FID <input type="radio"/> <input checked="" type="radio"/> PID <input type="radio"/> IR Dilution Air: Yes <input type="radio"/> <input checked="" type="radio"/> No Restart date: _____	
<b>Wells</b>				
Name	1S	2S		
Pipe ID diameter (in.)	2"	2"	2" 2" 2" 2"	
Vacuum (in. H <sub>2</sub> O)	10	11		
Differential Pressure (in. H <sub>2</sub> O)	0.9	1.6		
Temperature (°F)	64	64		
Total hydrocarbons (ppmv)				

Comments: Switched 2 1D, 2D

VM-1s .066  
D. #82

VM-3s .024  
D .045

VM-7 0.0  
VM-8 .329

VM-9SS ~~0.10~~  
VM-4

VE-1 D - 1.25

VE-3 S

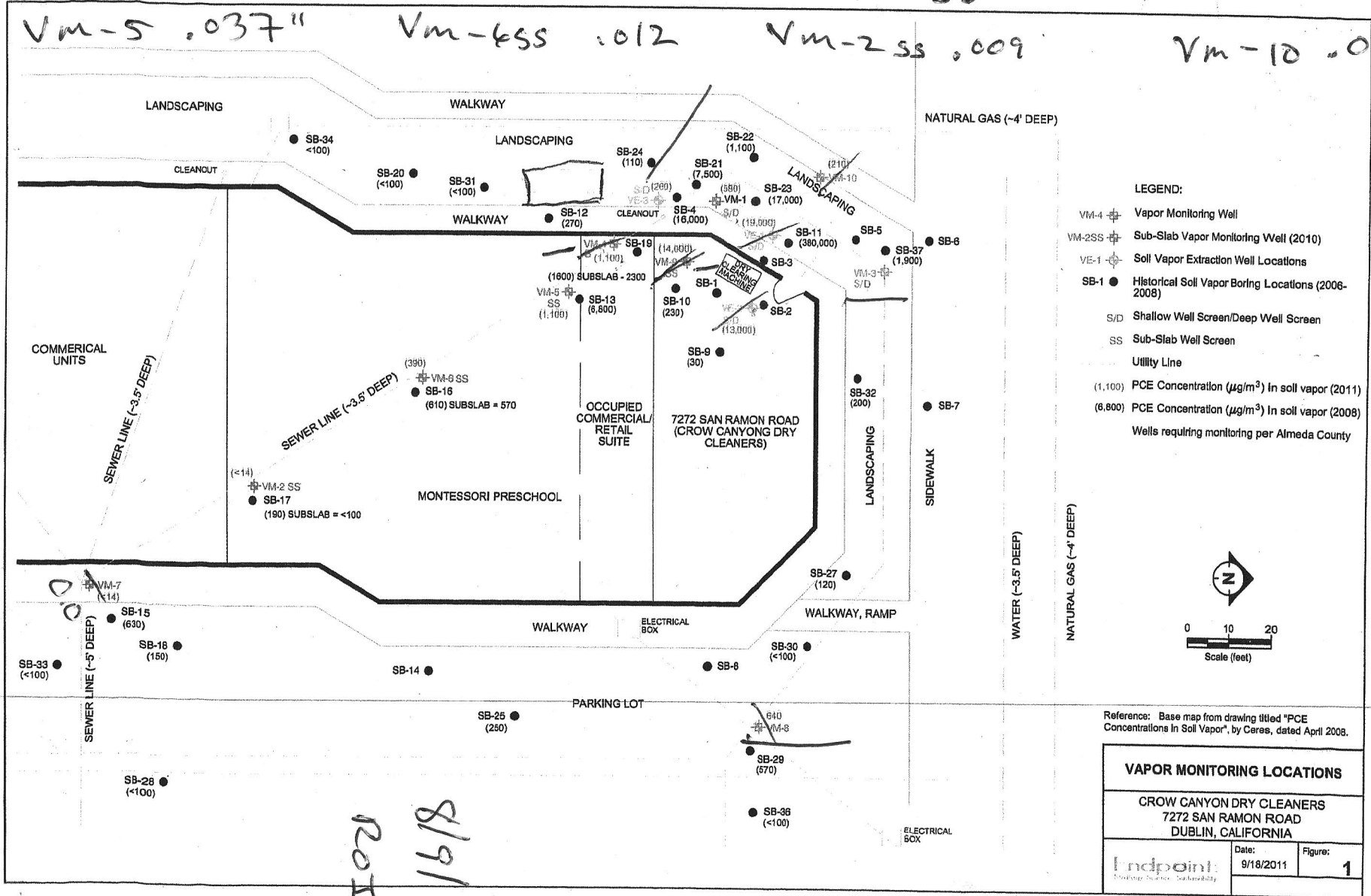
VE-3 D

VM-5 .037"

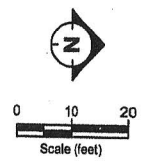
VM-6SS .012

VM-2SS .009

VM-10 .027



- LEGEND:**
- VM-4 ☩ Vapor Monitoring Well
  - VM-2SS ☩ Sub-Slab Vapor Monitoring Well (2010)
  - VE-1 ☩ Soil Vapor Extraction Well Locations
  - SB-1 ● Historical Soil Vapor Boring Locations (2006-2008)
  - S/D ☩ Shallow Well Screen/Deep Well Screen
  - SS ☩ Sub-Slab Well Screen
  - Utility Line ☩
  - (1,100) PCE Concentration ( $\mu\text{g}/\text{m}^3$ ) in soil vapor (2011)
  - (6,800) PCE Concentration ( $\mu\text{g}/\text{m}^3$ ) in soil vapor (2008)
  - Wells requiring monitoring per Alameda County



Reference: Base map from drawing titled "PCE Concentrations in Soil Vapor", by Ceres, dated April 2008.

VAPOR MONITORING LOCATIONS	
CROW CANYON DRY CLEANERS 7272 SAN RAMON ROAD DUBLIN, CALIFORNIA	
Date: 9/18/2011	Figure: 1

ROI  
8/9/12

# SYSTEM MONITORING DATA SHEET



Client: **Crow Canyon Cleaners**  
 Site: **7272 Crow Canyon Rd**  
**Dublin CA**

Job #: **TMDUBLIN**  
 Technician: **SP**  
 Date: **8/16/12**

System Parameters	Arrival		Departure
Total Hour Meter (blower)			
Blower Amps	1057.2		
<b>Influent</b>			
Time			
Pipe ID diameter (in.)	3"	3"	3"
Differential Pressure (in. H <sub>2</sub> O)	.25		
Vacuum (in. H <sub>2</sub> O)	35"		
Temperature (°F)	76		
Total hydrocarbons (ppmv)	2.0		
Sample ID #	INFLUENT	Sample Time	
Analyses	TPH as Gas, BTEX, MTBE		
<b>Midpoint</b>			
Total hydrocarbons (ppmv)	0.0		
Sample ID #	MIDPOINT	Sample Time	
Analyses	TPH as Gas, BTEX, MTBE		
<b>Effluent</b>			
Time			
Pipe ID diameter (in.)	2"	2"	2"
Differential Pressure (in. H <sub>2</sub> O)	1.1		
Temperature (°F)	89°		
Total hydrocarbons (ppmv)	0.0		
Sample ID #	EFFLUENT	Sample Time	
Analyses	TPH as Gas, BTEX, MTBE		
	High Ko (circle one) Active on arrival? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Active on departure? <input checked="" type="checkbox"/> Yes No <input type="checkbox"/> Shut Down Date		Monitoring device: FID <input type="checkbox"/> <input checked="" type="checkbox"/> PID IR <input type="checkbox"/> Dilution Air Yes <input type="checkbox"/> No <input type="checkbox"/> Restart date: 8/16/12
<b>Wells</b>			
Name	2D	2S	
Pipe ID diameter (in.)	2"	2"	2"
Vacuum (in. H <sub>2</sub> O)			
Differential Pressure (in. H <sub>2</sub> O)	.08	.13	
Temperature (°F)			
Total hydrocarbons (ppmv)			

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### SYSTEM MONITORING DATA SHEET



Client: **Crow Canyon Cleaners**

Job #: **TMDUBLIN**

Site: **7272 Crow Canyon Rd**

Technician: \_\_\_\_\_

**Dublin CA**

Date: 8/29/02

System Parameters	Arrival		Departure				
Total Hour Meter (blower)	1368 1367		1369				
Blower Amps							
<b>Influent</b>							
Time							
Pipe ID diameter (in.)	3"	3"	3"				
Differential Pressure (in. H <sub>2</sub> O)	.39		.30				
Vacuum (in. H <sub>2</sub> O)	6"	45	22.5				
Temperature (°F)	65		65				
Total hydrocarbons (ppmv)	0.0		0.0				
Sample ID #	INFLUENT	Sample Time					
Analyses	TPH as Gas, BTEX, MTBE						
<b>Midpoint</b>							
Total hydrocarbons (ppmv)	0.0		0.0				
Sample ID #	MIDPOINT	Sample Time					
Analyses	TPH as Gas, BTEX, MTBE						
<b>Effluent</b>							
Time							
Pipe ID diameter (in.)	2"	2"	2"				
Differential Pressure (in. H <sub>2</sub> O)	2.07		1.59				
Temperature (°F)	87						
Total hydrocarbons (ppmv)	0.0		0.0				
Sample ID #	EFFLUENT	Sample Time					
Analyses	TPH as Gas, BTEX, MTBE						
	(circle one) Active on arrival? <input checked="" type="radio"/> Yes <input type="radio"/> No Active on departure? <input checked="" type="radio"/> Yes <input type="radio"/> No Shut Down Date		(circle one) Monitoring device: FID <input checked="" type="radio"/> PID <input type="radio"/> IR Dilution Air Yes <input checked="" type="radio"/> No Restart date:				
<b>Wells</b>	Name	20	25	30	35	10	15
	Pipe ID diameter (in.)	2"	2"	2"	2"	2"	2"
	Vacuum (in. H <sub>2</sub> O)	15	6	15	5	15	5
	Differential Pressure (in. H <sub>2</sub> O)	2.0	1.1	2.5	.5	2.0	.6
	Temperature (°F)						
	Total hydrocarbons (ppmv)						

Comments: Closed shallow wells opened deep open shallow wells to lower vac to



NOTES

Client: Clow Company Job #: Tom Dublin  
Site: 7272 Grand St. Raman Technician: SP  
Dublin CA Date: 7/16/12

Phase call w/ Schneider Re UFD 1-888-778  
- UFT - DRC menu = UFT<sup>FF</sup> = N change to L 2735  
model # ATU312H040M3

Input Amps 17mp 17.5 { Input Line Current }  
21.1 amps @ }  
240V }

Have 2 Turn off Phase Loss  
PLT menu -  
FPL menu - Parameter - Y - N - output.

Ticket # 145294 145-9259 DAVE.

## SYSTEM MONITORING DATA SHEET



Client: **Crow Canyon Cleaners**

Job #: **TMDUBLIN**

Site: **7272 Crow Canyon Rd**

Technician: SP

Dublin CA

Date: 9/13/12

System Parameters	Arrival		Departure			
Total Hour Meter (blower)	1725.0		1727			
Blower Amps	17					
<b>Influent</b>						
Time						
Pipe ID diameter (in.)	3"	3"	3"			
Differential Pressure (in. H <sub>2</sub> O)	.31					
Vacuum (in. H <sub>2</sub> O)	9.7"					
Temperature (°F)	64					
Total hydrocarbons (ppmv)	0.0					
Sample ID #	INFLUENT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE					
<b>Midpoint</b>						
Total hydrocarbons (ppmv)	0.0					
Sample ID #	MIDPOINT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE					
<b>Effluent</b>						
Time						
Pipe ID diameter (in.)	2"	2"	2"			
Differential Pressure (in. H <sub>2</sub> O)	2.0					
Temperature (°F)	89					
Total hydrocarbons (ppmv)	0.0					
Sample ID #	EFFLUENT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE					
Pulse Event	(circle one)		(circle one)			
	Active on arrival?	<input checked="" type="radio"/> Yes <input type="radio"/> No	Monitoring device:	FID <input type="radio"/> <input checked="" type="radio"/> PID <input type="radio"/> IR		
	Active on departure?	Yes <input type="radio"/> <input checked="" type="radio"/> No	Dilution Air	Yes <input type="radio"/> <input checked="" type="radio"/> No		
Shut Down Date	9/13/12		Restart date:			
<b>Wells</b>						
Name	2D	2S	3D	3S	1D	1S
Pipe ID diameter (in.)	2"	2"	2"	2"	2"	2"
Vacuum (in. H <sub>2</sub> O)	9	2.3	9.0	3.8	9.5"	2.5
Differential Pressure (in. H <sub>2</sub> O)	.102	.059	.021	.065	.046	.099
Temperature (°F)	64	—————→				
Total hydrocarbons (ppmv)						

**Comments:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



h-wa s-6  
 s-wa s-3A  
 2-wa s-3A

.118 S-.141  
 D-.201

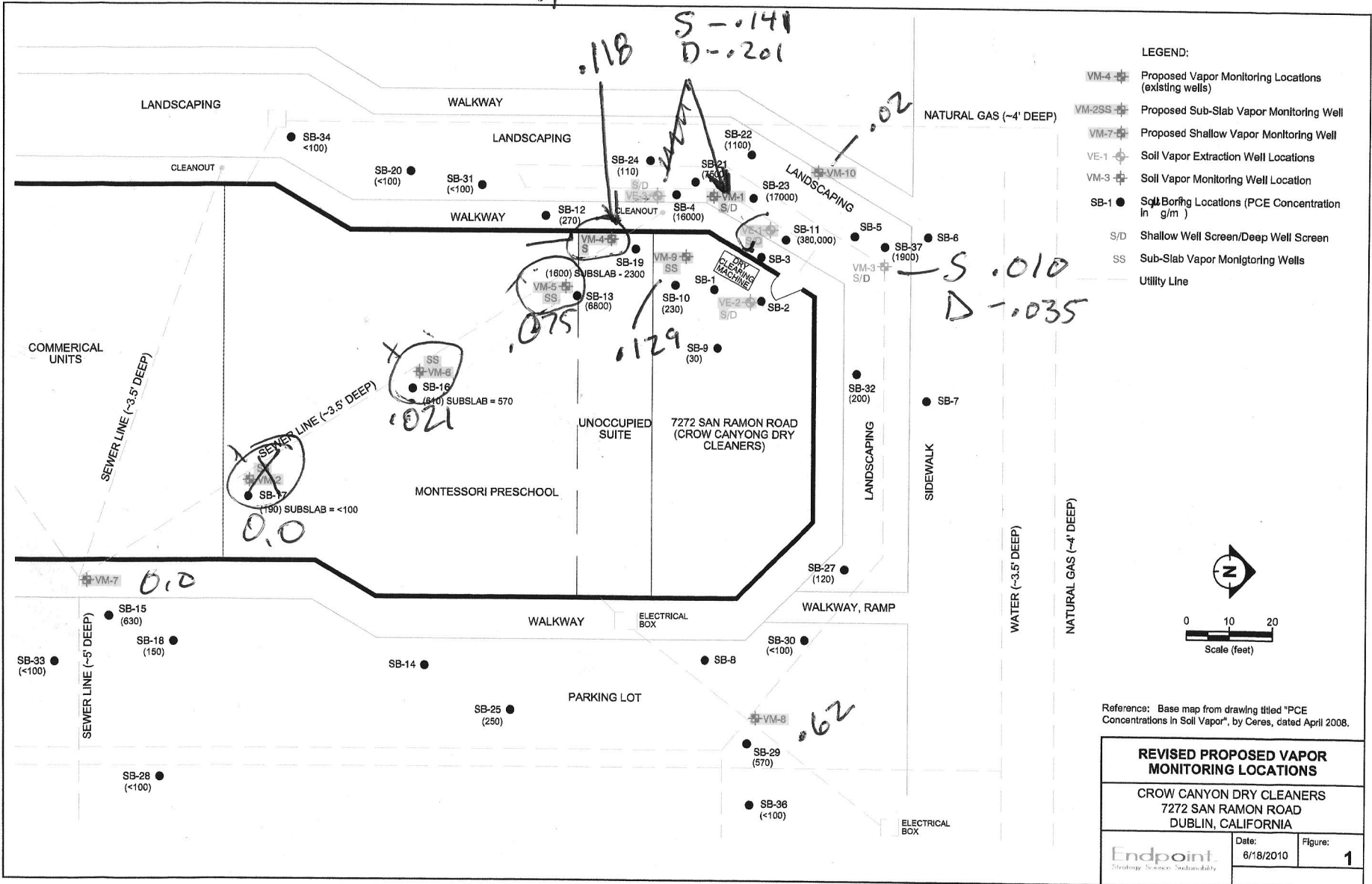
S.010  
 D-.035

.075  
 .129

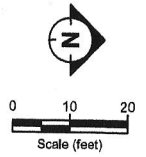
.021  
 0.0

0.0

.62



- LEGEND:**
- VM-4 [Symbol] Proposed Vapor Monitoring Locations (existing wells)
  - VM-2SS [Symbol] Proposed Sub-Slab Vapor Monitoring Well
  - VM-7 [Symbol] Proposed Shallow Vapor Monitoring Well
  - VE-1 [Symbol] Soil Vapor Extraction Well Locations
  - VM-3 [Symbol] Soil Vapor Monitoring Well Location
  - SB-1 [Symbol] Soil Boring Locations (PCE Concentration In g/m)
  - S/D [Symbol] Shallow Well Screen/Deep Well Screen
  - SS [Symbol] Sub-Slab Vapor Monitoring Wells
  - [Symbol] Utility Line



Reference: Base map from drawing titled "PCE Concentrations in Soil Vapor", by Ceres, dated April 2008.

<b>REVISED PROPOSED VAPOR MONITORING LOCATIONS</b>		
CROW CANYON DRY CLEANERS 7272 SAN RAMON ROAD DUBLIN, CALIFORNIA		
Endpoint. <small>Strategy. Science. Sustainability.</small>	Date: 6/18/2010	Figure: <b>1</b>



### SYSTEM MONITORING DATA SHEET

Client: **Crow Canyon Cleaners**

Job #: **TMDUBLIN**

Site: **7272 Crow Canyon Rd**

Technician: SP

Dublin CA

Date: 9/13/12

<b>System Parameters</b>		Arrival					Departure	
		Total Hour Meter (blower)	1725.0				1727	
		Blower Amps	17					
<b>Influent</b>		Time						
		Pipe ID diameter (in.)	3"		3"		3"	
		Differential Pressure (in. H <sub>2</sub> O)	.31					
		Vacuum (in. H <sub>2</sub> O)	9.7"					
		Temperature (°F)	64					
		Total hydrocarbons (ppmv)	0.0					
		Sample ID #	INFLUENT		Sample Time			
		Analyses	TPH as Gas, BTEX, MTBE					
<b>Midpoint</b>		Total hydrocarbons (ppmv)	0.0					
		Sample ID #	MIDPOINT		Sample Time			
		Analyses	TPH as Gas, BTEX, MTBE					
<b>Effluent</b>		Time						
		Pipe ID diameter (in.)	2"		2"		2"	
		Differential Pressure (in. H <sub>2</sub> O)	2.0					
		Temperature (°F)	89					
		Total hydrocarbons (ppmv)	0.0					
		Sample ID #	EFFLUENT		Sample Time			
		Analyses	TPH as Gas, BTEX, MTBE					
<b>Pulse Event</b>	Active on arrival?		(circle one) <input checked="" type="radio"/> Yes <input type="radio"/> No		Monitoring device: FID <input checked="" type="radio"/> PID <input type="radio"/> IR			
	Active on departure?		Yes <input checked="" type="radio"/> No		Dilution Air    Yes <input checked="" type="radio"/> No			
	Shut Down Date		9/13/12		Restart date:			
<b>Wells</b>		Name	2D	25	2D	35	1D	1S
		Pipe ID diameter (in.)	2"		2"		2"	2"
		Vacuum (in. H <sub>2</sub> O)	9	2.3	9.0	3.8	9.5"	2.5
		Differential Pressure (in. H <sub>2</sub> O)	.102	.059	.021	.065	.046	.099
		Temperature (°F)	64 →					
		Total hydrocarbons (ppmv)						

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## SYSTEM MONITORING DATA SHEET



Client: **Crow Canyon Cleaners**

Job #: TMDUBLIN

Site: 7272 Crow Canyon Rd

Technician: 30

Dublin CA

Date: 9/20/12

System Parameters	Arrival		Departure				
Total Hour Meter (blower)	1727		1728				
Blower Amps							
<b>Influent</b>							
Time							
Pipe ID diameter (in.)	3"	3"	3"				
Differential Pressure (in. H <sub>2</sub> O)	275						
Vacuum (in. H <sub>2</sub> O)	22						
Temperature (°F)	76						
Total hydrocarbons (ppmv)	1.0						
Sample ID #	INFLUENT	Sample Time					
Analyses	TPH as Gas, BTEX, MTBE						
<b>Midpoint</b>							
Total hydrocarbons (ppmv)	0.0						
Sample ID #	MIDPOINT	Sample Time					
Analyses	TPH as Gas, BTEX, MTBE						
<b>Effluent</b>							
Time							
Pipe ID diameter (in.)	2"	2"	2"				
Differential Pressure (in. H <sub>2</sub> O)	158						
Temperature (°F)	85						
Total hydrocarbons (ppmv)	0.0						
Sample ID #	EFFLUENT	Sample Time					
Analyses	TPH as Gas, BTEX, MTBE						
	(circle one)		(circle one)				
Active on arrival?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Monitoring device: FID <input type="checkbox"/> PID <input checked="" type="checkbox"/> IR <input type="checkbox"/>					
Active on departure?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Dilution Air Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
Shut Down Date	9/13/12		Restart date: 9/20/12				
<b>Wells</b>	Name	20	25	30	35	10	15
	Pipe ID diameter (in.)	2"	2"	2"	2"	2"	2"
	Vacuum (in. H <sub>2</sub> O)	20	5	20	2	20	2
	Differential Pressure (in. H <sub>2</sub> O)	.5	103	.35	.03	.4	102
	Temperature (°F)	65 <del>—————</del> →					
	Total hydrocarbons (ppmv)	4.0	3.7	0.0	0.0	0.0	0.0

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# SYSTEM MONITORING DATA SHEET



Client: **Crow Canyon Cleaners**  
 Site: **7272 Crow Canyon Rd**  
**Dublin CA**

Job #: **TMDUBLIN**  
 Technician: SP  
 Date: 10/9/12

System Parameters	Arrival		Departure			
Total Hour Meter (blower)	2039		2040			
Blower Amps						
<b>Influent</b>						
Time						
Pipe ID diameter (in.)	3"	3"	3"			
Differential Pressure (in. H <sub>2</sub> O)	.20					
Vacuum (in. H <sub>2</sub> O)	20"					
Temperature (°F)	72"					
Total hydrocarbons (ppmv)	4.2					
Sample ID #	<b>INFLUENT</b>	Sample Time				
Analyses	<b>TPH as Gas, BTEX, MTBE</b>					
<b>Midpoint</b>						
Total hydrocarbons (ppmv)	0.0					
Sample ID #	<b>MIDPOINT</b>	Sample Time				
Analyses	<b>TPH as Gas, BTEX, MTBE</b>					
<b>Effluent</b>						
Time						
Pipe ID diameter (in.)	2"	2"	2"			
Differential Pressure (in. H <sub>2</sub> O)	1.55					
Temperature (°F)	93					
Total hydrocarbons (ppmv)	0.0					
Sample ID #	<b>EFFLUENT</b>	Sample Time				
Analyses	<b>TPH as Gas, BTEX, MTBE</b>					
	(circle one)		(circle one)			
Active on arrival?	Yes	<input checked="" type="radio"/> No		Monitoring device: FID <input checked="" type="radio"/> PID IR		
Active on departure?	<input checked="" type="radio"/> Yes		No	Dilution Air Yes <input checked="" type="radio"/> No		
Shut Down Date			Restart date: <u>10/9/12</u>			
<b>Wells</b>						
Name	20	25	30	35	10	15
Pipe ID diameter (in.)	2"	2"	2"	2"	2"	2"
Vacuum (in. H <sub>2</sub> O)	21	4	19	3	20	2
Differential Pressure (in. H <sub>2</sub> O)	.5	.027	.36	.031	.42	.02
Temperature (°F)	07 <span style="font-size: 2em;">→</span>					
Total hydrocarbons (ppmv)						

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



# SYSTEM MONITORING DATA SHEET

Client: **Crow Canyon Cleaners**

Job #: **TMDUBLIN**

Site: **7272 Crow Canyon Rd**

Technician: SP

**Dublin CA**

Date: 10/23/12

System Parameters	Arrival		Departure			
Total Hour Meter (blower)	2365.6		2367.2			
Blower Amps	12.6					
<b>Influent</b>						
Time						
Pipe ID diameter (in.)	3"	3"	3"			
Differential Pressure (in. H <sub>2</sub> O)	.20					
Vacuum (in. H <sub>2</sub> O)	22.0					
Temperature (°F)	60					
Total hydrocarbons (ppmv)	1.8	1.2				
Sample ID #	INFLUENT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE					
<b>Midpoint</b>						
Total hydrocarbons (ppmv)	0.0	0.0				
Sample ID #	MIDPOINT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE					
<b>Effluent</b>						
Time						
Pipe ID diameter (in.)	2"	2"	2"			
Differential Pressure (in. H <sub>2</sub> O)	1.57					
Temperature (°F)	93					
Total hydrocarbons (ppmv)	0.0	0.0				
Sample ID #	EFFLUENT	Sample Time				
Analyses	TPH as Gas, BTEX, MTBE					
	(circle one) Active on arrival? <input checked="" type="radio"/> Yes <input type="radio"/> No Active on departure? <input checked="" type="radio"/> Yes <input type="radio"/> No Shut Down Date: _____		(circle one) Monitoring device: FID <input type="radio"/> PID <input checked="" type="radio"/> IR Dilution Air Yes <input type="radio"/> No <input checked="" type="radio"/> Restart date: _____			
<b>Wells</b>						
Name	2D	2S	3D	3S	1D	1S
Pipe ID diameter (in.)	2"	2"	2"	2"	2"	2"
Vacuum (in. H <sub>2</sub> O)	18	5	15	5	19	1
Differential Pressure (in. H <sub>2</sub> O)	.48	.027	.36	.032	.39	.02
Temperature (°F)	60 →					
Total hydrocarbons (ppmv)						

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## **Appendix C**

### **Laboratory Analytical Report for October 2012 Vapor Sampling**



## Analytical Report

Endpoint  1534 Plaza Lane #243  Burlingame, CA 94010	Client Project ID: TM Dublin; Crown Canyon Cleaners	Date Sampled: 10/09/12
		Date Received: 10/10/12
	Client Contact: Mehrdad Javaher	Date Reported: 10/16/12
	Client P.O.:	Date Completed: 10/16/12

**WorkOrder: 1210284**

October 16, 2012

Dear Mehrdad:

Enclosed within are:

- 1) The results of the **6** analyzed samples from your project: **TM Dublin; Crown Canyon Cleaners,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.


Best regards,

Angela Rydelius  
 Laboratory Manager  
 McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*



1210284

 <b>McCAMPBELL ANALYTICAL INC.</b> 1534 WILLOW PASS ROAD / PITTSBURG, CA 94565-1701 Website: <a href="http://www.mccampbell.com">www.mccampbell.com</a> / Email: <a href="mailto:main@mccampbell.com">main@mccampbell.com</a> Telephone: (877) 252-9262 / Fax: (925) 252-9269					<b>CHAIN OF CUSTODY RECORD</b> <b>TURN AROUND TIME</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> RUSH 24 HR 48 HR 72 HR 5 DAY EDF Required? Coelt (Normal) No Write On (DW) No						
Report To: <u>M. JAVARONA</u> Bill To: <u>ENDPOINT</u> Company: <u>END POINT CONSULTING INC</u> <u>1534 PLAZA LN #243</u> <u>BULLINGAME CA 94010</u> E-Mail: <u>meinedan@endpoint-inc.com</u> Tele: (415) <u>706-8935</u> Fax: ( )					Lab Use Only Pressurized By _____ Date _____ Pressurization Gas N2 _____ He _____						
Project #: <u>IM Dublin</u> Project Name: <u>crow canyon clean air</u> Project Location: <u>7272 San Ramon Rd Dublin</u> Sampler Signature: <u>[Signature]</u>					Helium Shroud SN#: _____ Other: _____ Notes: <u>Gauge on 316M-987 not zeroed upon receipt.</u>						
Field Sample ID (Location)	Collection		Canister SN#	Manifold / Sampler Kit SN#	Analysis Requested	Indoor Air	Soil Gas	Canister Pressure/Vacuum			
	Date	Time						Initial	Final	Receipt	Final (psi)
VE-1S	10/9/12	1457	1460	316m-985	TO-15-8010 only		X	-29	-4		
VE-2S		1519	7521-869	316m-983				-30	-4		
VM-9SS		1548	6205-746	316m-989				-30	-4		
VM-4S		1629	6312	316m-987				-30	-4		
VM-5SS		1828	6172	316m-980				-29	-4		
VM-6SS		1851	6304	316m-988				-30	-4		
Relinquished By: <u>[Signature]</u> Date: _____ Time: _____ Received By: <u>[Signature]</u> Relinquished By: _____ Date: _____ Time: _____ Received By: _____ Relinquished By: _____ Date: _____ Time: _____ Received By: _____					Temp (°C): <u>n/a</u> Work Order #: <u>1210284</u> Equipment Condition: <u>good</u> Shipped Via: <u>Client drop in</u>						



1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1210284

ClientCode: EPB

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQUIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

Report to:  
 Mehrdad Javaher  
 Endpoint  
 1534 Plaza Lane #243  
 Burlingame, CA 94010  
 415-706-8935    FAX:

Email: mehrdad@endpoint-inc.com  
 cc:  
 PO:  
 ProjectNo: TM Dublin; Crown Canyon Cleaners

Bill to:  
 Accounts Payable  
 Endpoint  
 1534 Plaza Lane #243  
 Burlingame, CA 94010

Requested TAT: 5 days

Date Received: 10/10/2012

Date Printed: 10/10/2012

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1210284-001	VE-1S	Soil Gas	10/9/2012 14:51	<input type="checkbox"/>	A												
1210284-002	VE-2S	Soil Gas	10/9/2012 15:19	<input type="checkbox"/>	A												
1210284-003	VM-9SS	Soil Gas	10/9/2012 15:48	<input type="checkbox"/>	A												
1210284-004	VM-4S	Soil Gas	10/9/2012 16:29	<input type="checkbox"/>	A												
1210284-005	VM-5SS	Soil Gas	10/9/2012 18:28	<input type="checkbox"/>	A												
1210284-006	VM-6SS	Soil Gas	10/9/2012 18:51	<input type="checkbox"/>	A												

**Test Legend:**

1	TO15-8010_SOIL(UG/M3)	2		3		4		5	
6		7		8		9		10	
11		12							

The following SampleIDs: 001A, 002A, 003A, 004A, 005A, 006A contain testgroup.

Prepared by: Melissa Valles

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **Endpoint** Date and Time Received: **10/10/2012 10:36:50 AM**  
 Project Name: **TM Dublin; Crown Canyon Cleaners** Login Reviewed by: **Melissa Valles**  
 WorkOrder N°: **1210284** Matrix: Soil Gas Carrier: Client Drop-In

**Chain of Custody (COC) Information**

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:



Endpoint  1534 Plaza Lane #243 Burlingame, CA 94010	Client Project ID: TM Dublin; Crown Canyon Cleaners	Date Sampled: 10/09/12
	Client Contact: Mehrdad Javaher	Date Received: 10/10/12
	Client P.O.:	Date Extracted: 10/12/12-10/15/12
		Date Analyzed: 10/12/12-10/15/12

**Halogenated Volatile Organic Compounds in µg/m<sup>3</sup>\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1210284

Lab ID	1210284-001A	1210284-002A	1210284-003A	1210284-004A	Reporting Limit for DF=1	
Client ID	VE-1S	VE-2S	VM-9SS	VM-4S	Soil Gas	W
Matrix	Soil Gas	Soil Gas	Soil Gas	Soil Gas		
DF	1	1	1	1		
Initial Pressure (psia)	12.28	13.48	13.04	13.17		
Final Pressure (psia)	24.46	26.88	25.99	26.26		

Compound	Concentration				µg/m <sup>3</sup>	ug/L
Bromodichloromethane	ND	ND	ND	ND	14	NA
Bromoform	ND	ND	ND	ND	21	NA
Bromomethane	ND	ND	ND	ND	7.9	NA
Carbon Tetrachloride	ND	ND	ND	ND	13	NA
Chlorobenzene	ND	ND	ND	ND	9.4	NA
Chloroethane	ND	ND	ND	ND	5.4	NA
Chloroform	ND	ND	ND	ND	9.9	NA
Chloromethane	ND	ND	ND	ND	4.2	NA
Dibromochloromethane	ND	ND	ND	ND	17	NA
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	16	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	12	NA
1,3-Dichlorobenzene	ND	ND	ND	ND	12	NA
1,4-Dichlorobenzene	ND	ND	ND	ND	12	NA
Dichlorodifluoromethane	ND	ND	ND	ND	10	NA
1,1-Dichloroethane	ND	ND	ND	ND	8.2	NA
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND	8.2	NA
1,1-Dichloroethene	ND	ND	ND	ND	8.1	NA
cis-1,2-Dichloroethene	ND	ND	ND	ND	8.1	NA
trans-1,2-Dichloroethene	ND	ND	ND	ND	8.1	NA
1,2-Dichloropropane	ND	ND	ND	ND	9.4	NA
cis-1,3-Dichloropropene	ND	ND	ND	ND	9.2	NA
trans-1,3-Dichloropropene	ND	ND	ND	ND	9.2	NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND	ND	ND	14	NA
Freon 113	ND	ND	ND	ND	16	NA
Methylene chloride	ND	ND	ND	ND	7.1	NA
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	14	NA
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	14	NA
Tetrachloroethene	41	35	280	22	14	NA
1,2,4-Trichlorobenzene	ND	ND	ND	ND	15	NA
1,1,1-Trichloroethane	ND	ND	ND	ND	11	NA
1,1,2-Trichloroethane	ND	ND	ND	ND	11	NA
Trichloroethene	ND	ND	13	ND	11	NA
Trichlorofluoromethane	ND	ND	ND	ND	11	NA
Vinyl Chloride	ND	ND	ND	ND	5.2	NA

**Surrogate Recoveries (%)**

%SS1:	97	98	97	98
%SS2:	96	95	95	95
%SS3:	100	99	98	99

**Comments**

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Endpoint  1534 Plaza Lane #243 Burlingame, CA 94010	Client Project ID: TM Dublin; Crown Canyon Cleaners	Date Sampled: 10/09/12
	Client Contact: Mehrdad Javaher	Date Received: 10/10/12
	Client P.O.:	Date Extracted: 10/12/12-10/15/12
		Date Analyzed: 10/12/12-10/15/12

**Halogenated Volatile Organic Compounds in µg/m<sup>3</sup>\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1210284

Lab ID	1210284-005A	1210284-006A			Reporting Limit for DF=1
Client ID	VM-5SS	VM-6SS			
Matrix	Soil Gas	Soil Gas			Soil Gas
DF	1	1			
Initial Pressure (psia)	13.06	13.48			W
Final Pressure (psia)	26.03	26.89			

Compound	Concentration				µg/m <sup>3</sup>	ug/L
Bromodichloromethane	ND	ND			14	NA
Bromoform	ND	ND			21	NA
Bromomethane	ND	ND			7.9	NA
Carbon Tetrachloride	ND	ND			13	NA
Chlorobenzene	ND	ND			9.4	NA
Chloroethane	ND	ND			5.4	NA
Chloroform	ND	ND			9.9	NA
Chloromethane	ND	ND			4.2	NA
Dibromochloromethane	ND	ND			17	NA
1,2-Dibromoethane (EDB)	ND	ND			16	NA
1,2-Dichlorobenzene	ND	ND			12	NA
1,3-Dichlorobenzene	ND	ND			12	NA
1,4-Dichlorobenzene	ND	ND			12	NA
Dichlorodifluoromethane	ND	ND			10	NA
1,1-Dichloroethane	ND	ND			8.2	NA
1,2-Dichloroethane (1,2-DCA)	ND	ND			8.2	NA
1,1-Dichloroethene	ND	ND			8.1	NA
cis-1,2-Dichloroethene	ND	ND			8.1	NA
trans-1,2-Dichloroethene	ND	ND			8.1	NA
1,2-Dichloropropane	ND	ND			9.4	NA
cis-1,3-Dichloropropene	ND	ND			9.2	NA
trans-1,3-Dichloropropene	ND	ND			9.2	NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND			14	NA
Freon 113	ND	ND			16	NA
Methylene chloride	ND	ND			7.1	NA
1,1,1,2-Tetrachloroethane	ND	ND			14	NA
1,1,2,2-Tetrachloroethane	ND	ND			14	NA
Tetrachloroethene	68	110			14	NA
1,2,4-Trichlorobenzene	ND	ND			15	NA
1,1,1-Trichloroethane	ND	ND			11	NA
1,1,2-Trichloroethane	ND	ND			11	NA
Trichloroethene	ND	ND			11	NA
Trichlorofluoromethane	ND	ND			11	NA
Vinyl Chloride	ND	ND			5.2	NA

**Surrogate Recoveries (%)**

%SS1:	116	97		
%SS2:	95	96		
%SS3:	95	98		

**Comments**

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Endpoint  1534 Plaza Lane #243  Burlingame, CA 94010	Client Project ID: TM Dublin; Crown Canyon Cleaners	Date Sampled: 10/09/12
	Client Contact: Mehrdad Javaher	Date Received: 10/10/12
	Client P.O.:	Date Extracted: 10/12/12-10/15/12
		Date Analyzed: 10/12/12-10/15/12

**Leak Check Compound\***

Extraction method: TO15

Analytical methods: TO15

Work Order: 1210284

Lab ID	Client ID	Matrix	Initial Pressure	Final Pressure	Isopropyl Alcohol	DF	% SS	Comments
001A	VE-1S	Soil Gas	12.28	24.46	ND	1	N/A	
002A	VE-2S	Soil Gas	13.48	26.88	ND	1	N/A	
003A	VM-9SS	Soil Gas	13.04	25.99	ND	1	N/A	
004A	VM-4S	Soil Gas	13.17	26.26	ND	1	N/A	
005A	VM-5SS	Soil Gas	13.06	26.03	ND	1	N/A	
006A	VM-6SS	Soil Gas	13.48	26.89	ND	1	N/A	

Reporting Limit for DF=1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	SoilGas	psia	psia	50	µg/m³

\* leak check compound is reported in µg/m³.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

The (liquid) Leak Check reference is:

DTSC, Advisory-Active Soil Gas Investigations, April 2012, page 17, section 4.2.2.1:

"The laboratory reports should quantify and annotate all detections of the leak check compound at the reporting limit of the target analytes."

%SS = Percent Recovery of Surrogate Standard  
 DF = Dilution Factor



### QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 71607

WorkOrder: 1210284

EPA Method: TO15		Extraction: TO15					Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
Chlorobenzene	N/A	25	N/A	N/A	N/A	82.4	N/A	N/A	60 - 140	
1,2-Dibromoethane (EDB)	N/A	25	N/A	N/A	N/A	80.3	N/A	N/A	60 - 140	
1,2-Dichloroethane (1,2-DCA)	N/A	25	N/A	N/A	N/A	94.9	N/A	N/A	60 - 140	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	N/A	25	N/A	N/A	N/A	68.2	N/A	N/A	60 - 140	
Freon 113	N/A	25	N/A	N/A	N/A	106	N/A	N/A	60 - 140	
Methylene chloride	N/A	25	N/A	N/A	N/A	105	N/A	N/A	60 - 140	
1,1,1,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	90.1	N/A	N/A	60 - 140	
1,1,2,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	79.6	N/A	N/A	60 - 140	
1,2,4-Trichlorobenzene	N/A	25	N/A	N/A	N/A	102	N/A	N/A	60 - 140	
Trichloroethene	N/A	25	N/A	N/A	N/A	87.4	N/A	N/A	60 - 140	
%SS1:	N/A	500	N/A	N/A	N/A	109	N/A	N/A	60 - 140	
%SS2:	N/A	500	N/A	N/A	N/A	97	N/A	N/A	60 - 140	
%SS3:	N/A	500	N/A	N/A	N/A	101	N/A	N/A	60 - 140	

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

#### BATCH 71607 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1210284-001A	10/09/12 2:51 PM	10/12/12	10/12/12 7:04 PM	1210284-002A	10/09/12 3:19 PM	10/12/12	10/12/12 7:45 PM
1210284-003A	10/09/12 3:48 PM	10/15/12	10/15/12 4:59 PM	1210284-004A	10/09/12 4:29 PM	10/12/12	10/12/12 9:06 PM
1210284-005A	10/09/12 6:28 PM	10/12/12	10/12/12 9:47 PM	1210284-006A	10/09/12 6:51 PM	10/12/12	10/12/12 10:28 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .  
 \* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.  
 Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



### QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 71607

WorkOrder: 1210284

Analyte	Extraction: TO15		LCS				Spiked Sample ID: N/A		
	Sample nL/L	Spiked nL/L	MS % Rec.	MSD % Rec.	MS-MSD % RPD	LCS % Rec.	Acceptance Criteria (%)		
							MS / MSD	RPD	LCS
Acrylonitrile	N/A	25	N/A	N/A	N/A	131	N/A	N/A	60 - 140
tert-Amyl methyl ether (TAME)	N/A	25	N/A	N/A	N/A	79.7	N/A	N/A	60 - 140
Benzene	N/A	25	N/A	N/A	N/A	82.9	N/A	N/A	60 - 140
Benzyl chloride	N/A	25	N/A	N/A	N/A	75.8	N/A	N/A	60 - 140
Bromodichloromethane	N/A	25	N/A	N/A	N/A	88.7	N/A	N/A	60 - 140
Bromoform	N/A	25	N/A	N/A	N/A	89.4	N/A	N/A	60 - 140
t-Butyl alcohol (TBA)	N/A	25	N/A	N/A	N/A	122	N/A	N/A	60 - 140
Carbon Disulfide	N/A	25	N/A	N/A	N/A	93	N/A	N/A	60 - 140
Carbon Tetrachloride	N/A	25	N/A	N/A	N/A	100	N/A	N/A	60 - 140
Chlorobenzene	N/A	25	N/A	N/A	N/A	82.4	N/A	N/A	60 - 140
Chloroethane	N/A	25	N/A	N/A	N/A	121	N/A	N/A	60 - 140
Chloroform	N/A	25	N/A	N/A	N/A	87.8	N/A	N/A	60 - 140
Chloromethane	N/A	25	N/A	N/A	N/A	69.2	N/A	N/A	60 - 140
Dibromochloromethane	N/A	25	N/A	N/A	N/A	89.7	N/A	N/A	60 - 140
1,2-Dibromo-3-chloropropane	N/A	25	N/A	N/A	N/A	88.9	N/A	N/A	60 - 140
1,2-Dibromoethane (EDB)	N/A	25	N/A	N/A	N/A	80.3	N/A	N/A	60 - 140
1,2-Dichlorobenzene	N/A	25	N/A	N/A	N/A	79.2	N/A	N/A	60 - 140
1,3-Dichlorobenzene	N/A	25	N/A	N/A	N/A	80.2	N/A	N/A	60 - 140
1,4-Dichlorobenzene	N/A	25	N/A	N/A	N/A	80.6	N/A	N/A	60 - 140
Dichlorodifluoromethane	N/A	25	N/A	N/A	N/A	76.4	N/A	N/A	60 - 140
1,1-Dichloroethane	N/A	25	N/A	N/A	N/A	94.7	N/A	N/A	60 - 140
1,2-Dichloroethane (1,2-DCA)	N/A	25	N/A	N/A	N/A	94.9	N/A	N/A	60 - 140
1,1-Dichloroethene	N/A	25	N/A	N/A	N/A	102	N/A	N/A	60 - 140
cis-1,2-Dichloroethene	N/A	25	N/A	N/A	N/A	80.9	N/A	N/A	60 - 140
trans-1,2-Dichloroethene	N/A	25	N/A	N/A	N/A	81.9	N/A	N/A	60 - 140
1,2-Dichloropropane	N/A	25	N/A	N/A	N/A	79.8	N/A	N/A	60 - 140
cis-1,3-Dichloropropene	N/A	25	N/A	N/A	N/A	79.8	N/A	N/A	60 - 140
trans-1,3-Dichloropropene	N/A	25	N/A	N/A	N/A	82.6	N/A	N/A	60 - 140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	N/A	25	N/A	N/A	N/A	68.2	N/A	N/A	60 - 140
Diisopropyl ether (DIPE)	N/A	25	N/A	N/A	N/A	86.3	N/A	N/A	60 - 140
1,4-Dioxane	N/A	25	N/A	N/A	N/A	80.8	N/A	N/A	60 - 140

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



### QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 71607

WorkOrder: 1210284

Analyte	Extraction: TO15		LCS				Spiked Sample ID: N/A		
	Sample nL/L	Spiked nL/L	MS % Rec.	MSD % Rec.	MS-MSD % RPD	LCS % Rec.	Acceptance Criteria (%)		
							MS / MSD	RPD	LCS
Ethyl acetate	N/A	25	N/A	N/A	N/A	83.5	N/A	N/A	60 - 140
Ethyl tert-butyl ether (ETBE)	N/A	25	N/A	N/A	N/A	84	N/A	N/A	60 - 140
Ethylbenzene	N/A	25	N/A	N/A	N/A	80.7	N/A	N/A	60 - 140
Freon 113	N/A	25	N/A	N/A	N/A	106	N/A	N/A	60 - 140
Hexachlorobutadiene	N/A	25	N/A	N/A	N/A	98.1	N/A	N/A	60 - 140
Isopropyl Alcohol	N/A	25	N/A	N/A	N/A	126	N/A	N/A	60 - 140
4-Methyl-2-pentanone (MIBK)	N/A	25	N/A	N/A	N/A	84.7	N/A	N/A	60 - 140
Methyl-t-butyl ether (MTBE)	N/A	25	N/A	N/A	N/A	88.1	N/A	N/A	60 - 140
Methylene chloride	N/A	25	N/A	N/A	N/A	105	N/A	N/A	60 - 140
Naphthalene	N/A	25	N/A	N/A	N/A	106	N/A	N/A	60 - 140
Styrene	N/A	25	N/A	N/A	N/A	81.4	N/A	N/A	60 - 140
1,1,1,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	90.1	N/A	N/A	60 - 140
1,1,2,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	79.6	N/A	N/A	60 - 140
Tetrachloroethene	N/A	25	N/A	N/A	N/A	82.5	N/A	N/A	60 - 140
Tetrahydrofuran	N/A	25	N/A	N/A	N/A	72	N/A	N/A	60 - 140
Toluene	N/A	25	N/A	N/A	N/A	82.7	N/A	N/A	60 - 140
1,2,4-Trichlorobenzene	N/A	25	N/A	N/A	N/A	102	N/A	N/A	60 - 140
1,1,1-Trichloroethane	N/A	25	N/A	N/A	N/A	92.2	N/A	N/A	60 - 140
1,1,2-Trichloroethane	N/A	25	N/A	N/A	N/A	82.2	N/A	N/A	60 - 140
Trichloroethene	N/A	25	N/A	N/A	N/A	87.4	N/A	N/A	60 - 140
1,2,4-Trimethylbenzene	N/A	25	N/A	N/A	N/A	83	N/A	N/A	60 - 140
1,3,5-Trimethylbenzene	N/A	25	N/A	N/A	N/A	90	N/A	N/A	60 - 140
Vinyl Chloride	N/A	25	N/A	N/A	N/A	70	N/A	N/A	60 - 140
%SS1:	N/A	500	N/A	N/A	N/A	109	N/A	N/A	60 - 140
%SS2:	N/A	500	N/A	N/A	N/A	97	N/A	N/A	60 - 140
%SS3:	N/A	500	N/A	N/A	N/A	101	N/A	N/A	60 - 140

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





### QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 71607

WorkOrder: 1210284

EPA Method: TO15		Extraction: TO15				Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS

BATCH 71607 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1210284-001A	10/09/12 2:51 PM	10/12/12	10/12/12 7:04 PM	1210284-002A	10/09/12 3:19 PM	10/12/12	10/12/12 7:45 PM
1210284-003A	10/09/12 3:48 PM	10/15/12	10/15/12 4:59 PM	1210284-004A	10/09/12 4:29 PM	10/12/12	10/12/12 9:06 PM
1210284-005A	10/09/12 6:28 PM	10/12/12	10/12/12 9:47 PM	1210284-006A	10/09/12 6:51 PM	10/12/12	10/12/12 10:28 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .  
 \* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.  
 Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.