

WP 12-VC1684

Revision 6

VOC Sampling Operations

Technical Procedure

EFFECTIVE DATE: 11/30/10

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APPROVED FOR USE

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
6	11/30/10	Added wording to first bullet in the Precautions and Limitations on trainees

INTRODUCTION

This procedure provides instructions for handling (receipt, storage, use, and shipping) Volatile Organic Compound (VOC) sample canisters, VOC Samplers, and obtaining VOC samples at the Waste Isolation Pilot Plant (WIPP) site. Sampling will continue until the final certified closure of all underground hazardous waste disposal units is complete.

Multiple sampling locations are used to quantify VOC concentrations of the nine target compounds listed in the Hazardous Waste Facility Permit. These include two locations designated as "repository monitoring locations; one location downstream from Panel 1 and one location upstream from the open, active panel. The upstream location will move to always be positioned upstream from the active waste disposal panel, and the downstream location will remain the same (e.g., at Panel 1).

Additional sample locations designated as "disposal-room monitoring" locations will include two locations inside each closed-room in an active panel, and one location at the exhaust of each open, active disposal-room. Filled panel VOC monitoring is described in WP 12-VC1685, Subatmospheric Grab Sampling for Hydrogen, Methane, and VOCs.

Deviations from procedure will be considered variances. The Program Manager must preapprove variances. Variances are recorded in the project files. Unintentional deviations, VOC Sampler malfunctions, and other problems are nonconformances. Documentation of nonconformances will be handed according to requirements in WP 13-1.

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules.

- Attachment 1, Sample Line Inspection Sheet
- Attachment 2, Sample Data Sheet
- Environmental VOC Chain-of-Custody Record (Sample Attachment 3)
- Attachment 4, Request for Analysis
- Attachment 6, Sample Canister Receipt Form
- Canister Sample Tag
- VOC Sampler Logbook

REFERENCES

BASELINE DOCUMENTS

- Hazardous Waste Facility Permit, Waste Isolation Pilot Plant, Permit No. NM4890139088-TSDF issued by the New Mexico Environment Department
- WP 12-VC.01, Confirmatory Volatile Organic Compound Monitoring Plan
- WP 12-VC.02, Quality Assurance Project Plan for Volatile Organic Compound Monitoring
- *Installation, Operation, and Maintenance Manual for Scientific Instrumentation Specialists Model TGS-2/A Automatic Canister Sampler*
- MKS 1159B Mass Flow Controller and 167 Display Instrument Manuals
- Drawing, 105-F-034-W1, Sampler Arrangement

REFERENCED DOCUMENTS

- WP 12-VC1685, Subatmospheric Grab Sampling for Hydrogen, Methane, and VOCs
- WP 12-VC3209, VOC Monitoring Process Evaluation, Validation and Notification
- WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description
- EM05 E92-156, Design Review 92-04 Report, VOC Monitoring System Ambient Air Sampler Flow Controller Modification
- Shipping Documents (shipping authorization and air bill)
- Canister Certification Sheets

EQUIPMENT

- Wrench, 9/16-inch open end
- Wrench, 1/2-inch open end
- 6-liter passivated stainless steel SUMMA canisters
- Air samplers
- Air compressor

- SC12 cable/connector
- PC208W program

PRECAUTIONS AND LIMITATIONS

- Individuals performing this procedure must be qualified per Qualification Card L-16, Volatile Organic Compound Sampling Operations or be a trainee working to Qualification Card L-16 under qualified supervision, excluding Radiological Control Technicians (RCTs).
- An RCT must perform Step 3.5.20.
- All tubing connections SHALL be kept capped or plugged at all times until final connections or disconnections are made.
- Only certified clean VOC Samplers SHALL be installed during performance of this procedure.
- VOC Sampler recertification date will be 1 (one) year after unit is placed into service.
- Sampling frequencies are detailed in monitoring plan.

PREREQUISITE ACTIONS

- 1.0 Verify that VOC Samplers are cleaned and certified and are within calibration before each use by checking the certification package for individual VOC sampler.
- 2.0 Verify that sample canisters are cleaned before they are put into service and after each use by checking the certification tag.

PERFORMANCE

NOTE

The signing of Environmental Chain-of-Custody (COC) Record (Sample Attachment 3) demonstrates the verification of sample and canister identification (ID).

NOTE

Disposal room sample lines will be inspected weekly to identify any damage that may have occurred throughout the week as a result of mine equipment or conditions.

NOTE

Sample canisters and VOC Samplers may be stored in the underground prior to sampling in secured areas to aid in process efficiency. The custody documentation will apply the same as any other custody transfer.

1.0 SAMPLE LINE INSPECTION

1.1 Performing Weekly Inspection

- 1.1.1 Visually inspect accessible sample lines in use for damage.
- 1.1.2 Record observations on Attachment 1.
- 1.1.3 Print name, sign, and date Attachment 1.
- 1.1.4 Submit completed Attachment 1 to Program Manager or Department Manager for review weekly.

1.2 Sample Line Damage Response

NOTE

The work package will include a flow verification and leak test.

- 1.2.1 **IF** damage is reported,
THEN Program Manager or Department Manager facilitate the development and completion of a work package to repair damaged sample lines with the Cognizant Engineer.
- 1.2.2 **IF** flow through the tubing cannot be verified,
THEN report to Program Manager and/or Department Manager for processing failed sample lines in accordance with WP 12-VC3209.

2.0 VOC SAMPLER HANDLING

NOTE

Quality Assurance (QA) Inspectors must be in attendance during inspection.

2.1 Certified Clean VOC Sampler Receipt

2.1.1 VOC Monitoring Technician, perform the following:

- [A] Inspect each shipping container for physical damage.
- [B] Inspect each custody seal to determine if it is intact.
- [C] **IF** custody seal is broken or missing,
THEN return equipment for cleaning and certification.
- [D] Break the seal of each shipping container.
- [E] VOC Technician verify contents against cleaning and certification documents.
- [F] Verify that there is a current completed calibration sticker for each calibrated item.
- [G] Program Manager verify that the VOC Samplers have met all cleaning and certification criteria detailed in the certification package.
- [H] Program Manager verify that calibration of all gauges has met the requirements, and that certificates of calibration are included for each gauge within the certification package.

2.1.2 Complete the COC for each VOC Sampler as follows:

- [A] Record N/A on "Sample Number" line.
- [B] Record date of receipt.
- [C] Record VOC Sampler on "Equipment Type" line.
- [D] Record VOC Sampler serial number and/or identification number on "Canister Serial/ID No." line.

- [E] Record cleaning certification date listed on the "VOC Sampler Certificate" page of the cleaning and certification documentation.
 - [F] Enter signature, date, and time on first "Received By" line.
- 2.1.3 Place VOC Sampler in secured storage.
- 2.1.4 Complete the following on the COC:
- [A] Record storage location, and date/time of placement in storage.
 - [B] Enter signature, date and time on first "Relinquished By" line.
 - [C] Performers, print name, sign, and date.

NOTE

The Computerized History and Maintenance Planning System (CHAMPS) system provides the recall function for VOC samplers.

2.2 VOC Sampler Installation

- 2.2.1 Obtain certified clean VOC Sampler and assigned COC from VOC Monitoring storage area.
- 2.2.2 Enter signature, date, and time on first "Received By" line.
- 2.2.3 Obtain sample line components (if applicable).
- 2.2.4 Verify the caps and plugs on the VOC Sampler and sample lines are present and are tight (as applicable).
- 2.2.5 Install VOC Sampler in VOC Sampler enclosure.
- 2.2.6 Install sample line as follows:
 - [A] Assemble sample line and components (removing tubing caps and plugs only when making connections).
 - [B] Install or connect sample line support.
 - [C] Connect sampling line to SAMPLE IN port on the VOC Sampler.

- 2.2.7 Uncap the Bleed Air Port.
- 2.2.8 Connect the power cord and banana plug to VOC Sampler.
- 2.2.9 Program VOC Sampler timer with current time.
- 2.2.10 Enter signature, date and time on first "Relinquished By" line on COC.
- 2.2.11 Record installation location, date, and time of installation on the COC.
- 2.2.12 Place COC inside sample station enclosure.
- 2.2.13 Assign calibration due date to installed VOC Sampler (to expire one year from install date) and record in VOC Sampler Logbook.
- 2.2.14 Give the VOC Sampler "Cleaning and Certification Report" to the Program Manager for review and signature.
- 2.2.15 Program Manager, review report and sign and date "VOC Sampler Certificate."
- 2.2.16 Report to the Cognizant Engineer the following:
 - [A] Installation location
 - [B] VOC Sampler serial number
 - [C] Installation Date
 - [D] New recall date

NOTE

VOC Samplers are removed from service when the calibration is about to expire, parts are replaced, or analytical results indicate that the instrument may be contributing VOCs to collected samples. Spare VOC Samplers are kept on-hand to ensure that there are sufficient units to continue sampling in the unexpected event of instrument failure or quality concerns. Sample lines in use at VOC A and B may be replaced if it is suspected that the lines are contributing VOCs to collected samples. Removal of both VOC Samplers and sample lines is conducted by VOC Monitoring Technicians.

2.3 VOC Sampler Removal

- 2.3.1 Disconnect power cord and banana plug from VOC Sampler.
- 2.3.2 Disconnect tubing connected to VOC Sampler SAMPLE IN port.
- 2.3.3 Connect all caps on the VOC Sampler.
- 2.3.4 Remove VOC Sampler from enclosure.
- 2.3.5 Enter signature, date and time on first "Received By" line of COC.
- 2.3.6 Remove sample line components as follows (as applicable):
 - [A] Disconnect sample line from VOC Sampler.
 - [B] Remove or disconnect sample line supports (as applicable).
 - [C] Secure all sample line components.
 - [D] Dispose of in metals bin.
- 2.3.7 VOC Program Manager or designee, review VOC Sampler Logbook for completeness upon removal of VOC Sampler from service.

NOTE

COC is terminated when VOC Sampler is removed from service.

2.4 VOC Sampler Interim Storage

- 2.4.1 Tag VOC Sampler indicating out-of-service, return VOC Sampler to the cabinet for out-of-service equipment.

- 2.4.2 Sign first available "Relinquished By" line and enter date and time on the COC.
- 2.4.3 Submit COC and VOC Sampler Logbook to VOC Monitoring Program Manager for review.
- 2.4.4 File COC in the folder designated for each individual sampling unit.

2.5 VOC Sampler Shipment

NOTE

The VOC Sampler Logbook must accompany the VOC Sampler during shipment in shipping container.

- 2.5.1 VOC Monitoring personnel, retrieve VOC Sampler.
- 2.5.2 Obtain shipping container for VOC Sampler.
- 2.5.3 Complete shipping document(s) and label(s).
- 2.5.4 Place VOC Sampler and copies of shipping documentation in shipping containers.
- 2.5.5 Close shipping containers.
- 2.5.6 Seal containers using shipping tape.
- 2.5.7 Transport shipping containers and documents to warehouse or designated shipping location.
- 2.5.8 Retain copy of shipping documents in project files.

3.0 SAMPLE COLLECTION AND CANISTER HANDLING

3.1 Sample Canister Receiving

- 3.1.1 VOC Monitoring technician, perform the following:

- [A] Inspect each custody seal to determine if it is intact for canisters that are not directly received from lab personnel.

- [B] **IF** custody seal is broken or missing,
THEN install "out-of-service tag," store on "out of service" cabinet, and return equipment for cleaning and certification as needed.
- [C] Break the seal of each shipping container.
- [D] Verify contents against laboratory COC form and cleaning and certification documentation.
- [E] Inspect each shipping container for physical damage (e.g., dents, cracks, or valve damage).
- [F] Place in secured storage with tag indicating canisters pending COC.
- [G] Complete Attachment 6, "Sample Canister Receipt Form," as follows:
 - Date and time received
 - Cleaning and certification package
 - Canister serial number
 - Storage location
 - Personnel receiving canisters
 - Date and time of storage
 - Notes (as needed)

NOTE

COC may be filled out using information contained in Sample Canister Receipt Form. COCs may be initiated at a later time as long as the canisters are stored appropriately.

3.1.2 Record the following on the COC for each VOC sample canister:

- [A] Signature, date, and time when first received on first "Received By" line.
- [B] VOC sample canister on "Equipment Type" line.
- [C] Sample canister serial number and/or ID number on "Canister Serial/ID No." line.
- [D] Cleaning certification date and calibration due date on appropriate lines (one year from cleaning date).

3.1.3 Place canister in VOC equipment storage area and record the following on the COC for each sample canister:

[A] Storage location, date, and time of placement in storage.

[B] Signature, date, and time when first relinquished on first "Relinquished By" line.

[C] Performer's printed name and signature, and date on appropriate line.

3.1.4 File the COC in individual canister files.

3.2 Sample Canister Preparation

3.2.1 Obtain certified clean sample canister(s) and assigned COC from VOC Monitoring storage area.

3.2.2 Inspect each sample canister for the following conditions:

- Certification tag attached
- Sample canister valve fully closed
- Tubing cap installed on sample canister valve

3.2.3 **IF** any conditions identified in Step 3.2.2 are NOT as specified, **THEN** label as "out of service," place in "out of service cabinet," and return sample canister for exchange.

3.2.4 Assign a sample number to each canister from the sample canister log.

3.2.5 Attach canister Sample Tag(s) to canister(s), as applicable.

3.2.6 On Sample Data Sheet, Sample Tag, and COC, record the following, as applicable:

- Date
- Station number
- Sample canister serial number
- Sample canister sample number
- VOC Sampler serial number

3.2.7 Prior to leaving the equipment storage area, verify that the installed VOC Samplers are in calibration.

NOTE

If the mass flow controller readout indicates that the required flow-rate cannot be achieved, the VOC Monitoring Program Manager must be notified.

NOTE

Documentation must be completed and maintained for all samples voided or attempted and not successful including Sample Data Sheets and COCs.

3.3 Sample Canister Installation

NOTE

Steps must be performed for all VOC Samplers per each event and VOC Samplers installed at VOC-A and VOC-B must be set to collect samples during the same time frame (+ 45 minutes).

NOTE

Duplicate sampling will be conducted weekly at one closed-room location and at VOC A and B at a frequency of 5%.

- 3.3.1 Replace Storage Module in the weather station at VOC A (S1300, E300) prior to the first sampling event of the week.
- 3.3.2 For repository samples, record visual reading of FloSonic readout and time of reading in the Remarks/Comments section.
- 3.3.3 Configure valves to desired sampling location, as applicable.

NOTE

For sampling at Surface Station A, the Sample Inlet Valve (inside sample enclosure) and Exhaust Valve (on probe skid) must be opened during sampling and closed when not in use.

3.3.4 For Disposal Room samples, purge lines to ensure twelve standard liters of air is drawn through the supply line by one of the following methods:

- VOC sampling unit programmed to run for 7 hours at 28.9 sgcm,

OR

- Separate mass flow controller and sample pump set as follows:

Flow rate	1.0lpm	1.5lpm	2lpm	2.5lpm	3lpm
Purge Time Needed	12 minutes	8 minutes	6 minutes	5 minutes	4 minutes

3.3.5 Record the following purge information on the Sample Data Sheet:

- [A] Purge equipment
- [B] Flow rate
- [C] Purge time
- [D] Total purged volume in liters
- [E] Equipment calibration information

3.3.6 **IF** the purge is successful,
THEN GO TO Step 3.3.12.

3.3.7 **IF** a mass flow controller indicates a line is obstructed,
THEN connect air compressor to the line and attempt to clear any obstruction.

3.3.8 **IF** the line is cleared,
THEN repeat Step 3.3.5.

- 3.3.9 **IF** the line cannot be cleared,
THEN inspect the line for damage and complete Attachment 1.
- 3.3.10 **IF** there is not visible damage to the line,
THEN notify the Program Manager and/or Department Manager immediately.
- 3.3.11 **IF** the line is damaged,
THEN perform Subsection 1.2 and repeat the sampling process for the location of the damaged sample line if the line is not deemed to be failed.
- 3.3.12 Ensure that the canister(s) to be installed correspond with the VOC Sampler.
- 3.3.13 Install sample canister(s) on VOC Sampler.
- 3.3.14 Record time of installation on canister Sample Tag, Sample Data Sheet, and the COC.
- 3.4 VOC Sampler Programming and Adjustments
- 3.4.1 Manually start VOC Sampler to ensure flow as follows:
- 28.9 sccm (23.9 to 34.9 sccm) for routine sample (one canister)
 - 57.8 sccm (52.8 to 63.3 sccm) for duplicate samples (two canisters)

NOTE

The VOC Sampler is programmed to collect two simultaneous 6-hour samples when performing duplicate sampling.

- 3.4.2 Ensure sample pump head pressure is 15 to 25 psi. If there is insufficient pressure, troubleshoot until the problem is fixed or replace the VOC Sampler.
- 3.4.3 **IF** the VOC Sampler is replaced,
THEN void the canister and complete the COC through validation.
- 3.4.4 Open sample canister valve(s).

- 3.4.5 **IF** vacuum gauge indicates less than 24 inches Hg,
THEN void sample and complete the COC through validation,
AND RETURN TO Section 2.0.
- 3.4.6 Manually stop VOC Sampler.
- 3.4.7 Record the following, on the Sample Data Sheet, Sample Tag,
and COC as applicable:
- Sample cycle start time
 - Sample cycle end time
 - Installation time and date
 - Performer's printed name, signature, and date
- 3.4.8 Record the following in the VOC Sampler Logbook:
- Sample date
 - Sample #
 - Canister Serial #
 - Unusual Conditions (as applicable)
 - Printed name and signature
- 3.4.9 Reset elapsed timer.
- 3.4.10 Program VOC Sampler timer to collect a 6-hour sample cycle.
- 3.5 Sample Canister Removal
- 3.5.1 Prior to removing samples from locations VOC A and B, contact
the Central Monitoring Room Operator to verify that there were no
potential radiological releases during the sampling time.
- 3.5.2 For repository samples, record visual reading of FloSonic readout
and time of reading in the Remarks/Comments section.
- 3.5.3 **IF** an event has occurred,
THEN STOP WORK. DO NOT REMOVE CANISTERS
AND notify Radiological Control to survey filters per Step 3.5.19.
- 3.5.4 **IF** equipment is released by the survey,
THEN continue to Step 3.5.5.

NOTE

For duplicate samples each port must be activated independently to read sample pressure.

- 3.5.5 Activate sample ports to retrieve data and record the following on Sample Data Sheet:
- [A] Ending flow rate (sccm)
 - [B] Ending sample pressure (psi)
 - [C] Ending pump head pressure (psi)
 - [D] Elapsed time
- 3.5.6 Verify that the pressure is greater than or equal to 5 psi.
- 3.5.7 **IF** the ending pressure is less than 5 psi,
THEN void the sample, complete the COC through validation, continue to Step 3.5.8,
AND RETURN TO Section 2.0 to re-attempt sample collection for that location.
- 3.5.8 Record Notes as applicable in VOC Sample Logbook.
- 3.5.9 Deactivate the ports.
- 3.5.10 Close the canister valve(s).
- [A] Remove filters.
 - [B] If conducting closed-room sampling, place filters in individually labeled dishes.
 - [C] Install new particulate filters in filter housing and record in VOC Sampler Logbook.

NOTE

Samples collected from disposal rooms must remain in sampler enclosure until released by RCTs.

- 3.5.11 Remove the sample canister(s) from VOC Sampler.
- 3.5.12 Place cap back on the sample canister.

- 3.5.13 Place flexible tubing line on bleed line.
- 3.5.14 Bleed any remaining pressure in the VOC Sampler.
- 3.5.15 Replace cap on bleed line.
- 3.5.16 Place plug into the flexible tubings.
- 3.5.17 Record the following on Sample Tag and Sample Data Sheet, as applicable:
- [A] Date and time removed
 - [B] Performer's printed name, signature, and date
 - [C] Unusual conditions
 - [D] Nonconformances
- 3.5.18 Call RCT to analyze filters prior to removal of canister.
- 3.5.19 RCT, perform the following:
- [A] Analyze the primary filter.
 - If the filter is less than or equal to minimum detectable activity (MDA) alpha and beta/gamma, proceed to Step 3.5.19[B].
 - If the primary filter is greater than MDA for alpha and beta/gamma, control filter, and analyze secondary filter.
 - If secondary filter is less than MDA for alpha and beta/gamma, proceed to Step 3.5.19[B].
 - If both filters are above MDA, call RCT Manager to determine equipment disposition.
 - [B] Complete the applicable portions of Sample Data Sheet.
 - [C] Print, sign, and date RCT signature line of Attachment 2.
- 3.5.20 VOC Technician retrieve canister and sampling documents from Sampler Enclosure.

3.5.21 Enter signature, date, and time on "Received By" line of COC.

3.5.22 Place canister in interim storage.

3.5.23 Enter signature, date, and time on "Relinquished By" line of COC.

NOTE

Place out of service tag on the canisters and store voided canisters in the out of service cabinet to prevent future use until they are shipped for cleaning and certification.

NOTE

Shipping of voided canisters does not require a Request for Analysis (RFA) or a COC. Voided canisters will be shipped separately as general freight or directly delivered to the contract laboratory.

4.0 Sample Canister Delivery and Shipment

4.1 Delivering Samples to Contract Laboratory

4.1.1 Retrieve sample canister(s), respective COC(s), and RFA(s) completed.

4.1.2 Record Control Number from Attachment 4 on the COC.

4.1.3 Mark on RFA pressure "psi."

4.1.4 Obtain sturdy cardboard box and inner boxes, if necessary, for sample canister(s).

4.1.5 Ensure Sample Tag is connected to the correct sample canister and each canister is part of the intended shipment before placement in shipping container.

4.1.6 Place the canister(s) inside the box(es), leaving them accessible to inspection.

4.1.7 Give the following forms to VOC Program Manager or designee, for review:

- COC(s)
- RFA
- Sample Data Sheet(s)

4.1.8 Complete COC(s) for sample canisters to be delivered.

- 4.1.9 Deliver samples to the laboratory
- 4.1.10 Relinquish the samples to the laboratory using the COC(s).
- 4.1.11 Return the following to Project Records Services files in accordance with the departments Records Inventory and Disposition Schedule:
 - Yellow copy of the COC
 - Yellow copy of RFA
 - Sample Data Sheet

4.2 Shipping Samples Via Commercial Carrier

- 4.2.1 Retrieve sample canister(s), respective COC(s), and completed RFA(s).
- 4.2.2 Complete COC for sample canisters to be shipped.
- 4.2.3 Record Control Number from RFA on the COC.
- 4.2.4 Mark on RFA pressure "psi."
- 4.2.5 Obtain sturdy cardboard box and inner boxes, if necessary, for sample canister(s).
- 4.2.6 Ensure Sample Tag is connected to the correct sample canister and each canister is part of the intended shipment before placement in shipping container.
- 4.2.7 Place the canister(s) inside the box(es), leaving them open.
- 4.2.8 Place address label on the outermost box (as applicable).
- 4.2.9 Record the following on the Shipping Authorization:
 - Sample numbers
 - COC numbers
 - Canister serial numbers
 - Sample pressure

- 4.2.10 Give the following forms to VOC Program Manager or designee, for review:
- COC
 - RFA
 - Sample Data Sheet
- 4.2.11 Transport shipping container(s) and shipping documents to the warehouse or designated shipping location.
- 4.2.12 Have warehouse personnel verify contents, sign, date, and enter time, on the individual COC(s) as received.
- 4.2.13 Have warehouse personnel sign, date, and enter time on the COC(s) as "Relinquished By."
- 4.2.14 Record on COC the shipping document number of each shipping container for all sample canister(s) in that container.
- 4.2.15 Insert original COC copies with corresponding samples inside the box(es).
- 4.2.16 Tape the box(es) with clear packaging tape.
- 4.2.17 Place COC tape over packaging tape to prevent tampering.
- 4.2.18 Retain copy of shipping documents and copy of airbill, as applicable.
- 4.2.19 Return the following to Project Records Services files in accordance with the departments Records Inventory and Disposition Schedule:
- Yellow copy of the COC
 - Yellow copy of RFA
 - Sample Data Sheet
 - Copy of shipping documents
 - Copy of airbill

Attachment 1 – Sample Line Inspection Sheet

Date:	Time:
Sample Lines Inspected:	
Observations:	
Remedial Actions:	
Disposition:	
Inspection Personnel:	

Signature	Date
Program Manager or Department Manager:	

Signature	Date

Attachment 2 – Sample Data Sheet

Date: _____ Radiological Release Between Start and End Time – Yes/No

Station No.: _____ VOC Sampler Serial No.: _____

SAMPLE PORT	START TIME			END TIME			
	DAY	HOUR	MINUTE	DAY	HOUR	MINUTE	
1							
2							
PUMP							
SAMPLE PORT	SERIAL NO.	SAMPLE NO.	DATE/TIME INSTALLED		DATE/TIME REMOVED		
1							
2							
SAMPLE PORT	FLOWRATE (sccm)		SAMPLE PRESSURE		PUMP HEAD PRESS. (psi)		ELAPSED TIME (hours)
	START	END	START (in Hg)	END (psi)	START	END	
1							
2							
PURGE INFORMATION							
CAL/DUE DATE	EQUIPMENT #	FLOWRATE (LMP)	PURGE TIME		TOTAL VOLUME (L)		

RCT Section

	Counter/Equip. #	Cal. Due	MDA α / β - γ	Activity (dpm) α / β - γ
Primary Filter α / β - γ	/		/	/
Secondary Filter α / β - γ	/		/	/

REMARKS/COMMENTS: _____

Performed by: _____ / _____ / _____
 Printed Name Signature Date

Performed by: _____ / _____ / _____
 Printed Name Signature Date

Performed by: _____ / _____ / _____
 (RCT) Printed Name Signature Date

Reviewed for
 Completeness by: _____ / _____ / _____
 Printed Name Signature Date

Attachment 3 – Example Chain of Custody Record

Environmental VOC Chain-of-Custody Record

No 4277

SAMPLE NUMBER _____

Canister Serial No. _____

Date of Receipt: _____ / _____ / _____

Equipment Type: _____

Cleaning Cert. Date: _____

Storage Location: _____

Installation Location: _____

Date: _____ / _____ / _____

Date: _____ / _____ / _____

C/C Control _____

R/A Control No. _____

Shipping Document No. _____

Cal. Due Date: _____

Time: _____

Time: _____

1. Received By: _____
Signature Date Time

Relinquished By: _____
Signature Date Time

2. Received By: _____
Signature Date Time

Relinquished By: _____
Signature Date Time

3. Received By: _____
Signature Date Time

Relinquished By: _____
Signature Date Time

4. Received By: _____
Signature Date Time

Relinquished By: _____
Signature Date Time

5. Received By: _____
Signature Date Time

Relinquished By: _____
Signature Date Time

6. Received By: _____
Signature Date Time

Relinquished By: _____
Signature Date Time

Performers responsible for data entry or step completion SHALL enter their printed names, signatures, and date below.

NAME (print)

SIGNATURE

DATE

Remarks: _____

Completion of this step constitutes validation of this record and is found to be complete.

Name (print)

Signature

Date

Attachment 4 – Example Request for Analysis

Waste Isolation Pilot Plant
 P. O. Box 2078
 Carlsbad, NM 88221-2078

VOC Monitoring Program _____
 Purchase Order No. _____

R/A Control _____
 C/C Control No. _____
 Date Samples Shipped _____
 Lab Destination _____
 Laboratory Contact _____
 Send Lab Report To _____

 Date Report Required _____
 Project Contract _____
 Project Contract Phone No. _____

Serial No.	Sample No.	C- of-C No.	Sample Type	Sample Pressure	Preservative	Contract-Specific Testing	Special Instructions

TURNAROUND TIME REQUIRED: (Rush must be approved by appropriate Manager) NORMAL _____ RUSH _____ (Subject to rush surcharge)
 POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
 NONHAZARD _____ FLAMMABLE _____ SKIN IRRITANT _____ HIGHLY TOXIC _____ BIOLOGICAL _____ OTHER _____
 SAMPLE DISPOSAL (Please indicate disposition of sample following analysis.) RETURN TO CLIENT _____ DISPOSAL BY LAB _____ (Please Specify)

FOR LAB USE ONLY
 RECEIVED BY _____ DATE/TIME _____

Attachment 5 – Example Canister Sample Tag

Attachment 5 – Example Canister Sample Tag

Sample Number: _____ Canister Serial Number: _____

Sample Location: _____

Date/Time Installed: _____

Performer's Printed Name: _____

Signature: _____

Date/Time Removed: _____

Performer's Printed Name: _____

Signature: _____

Attachment 6 – Sample Canister Receipt Form

Attachment 6 – Sample Canister Receipt Form

Canister Cleaning and Certification Package: _____

Canister Receipt Date / Time: _____

Canister Storage Date / Time: _____

Canister Storage Location: _____

Canister Serial Numbers:

Notes: _____

Performed/Received by: _____ / _____ / _____
Printed Name Signature Date

Reviewed by: _____ / _____ / _____
Printed Name Signature Date