Allred Collins Landfill

Landfill Gas Sampling and Analysis Plan (SAP)

5150 Convoy Court – San Diego, CA 92111

September 2003

Prepared By:
California Integrated Waste Management Board
P.O. Box 4025
(1001 "I" Street)
Sacramento, California 95812-4025

SWIS # 37-CR-0097

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1. SUMMARY

The California Integrated Waste Management Board (CIWMB), Closed Illegal and Abandoned Sites Unit (CIA), investigates solid waste disposal sites and provides site data and documentation to quantify requirements for both enforcement and potential clean-up activities.

The CIA unit, supporting the investigation and enforcement efforts of the San Diego City Local Enforcement Agency, has prepared this work plan for a gas investigation entitling sampling and analysis of landfill gas being generated at the Allred Collins Landfill (SWIS # 37-CR-0097) located in 5150 Convoy Court in San Diego, CA 92111. The purpose of this investigation is to verify accuracy of landfill gas readings by collecting samples for laboratory analysis and to determine if site complies with state minimum standards for gas control.

2. SITE LOCATION AND DESCRIPTION

The site is located in 5150 Convoy Court in San Diego, CA 92111.

Latitude:	32.83583
Longitude:	-117.15556
Land Owner:	Nas Convoy Partnership
	11750 Sorrento Valley Road
	San Diego, CA 92121
Surrounding Land:	Commercial & Industrial
Enforcement Agency:	City of San Diego (Development Services Department)
	LEA: (Bill Prinz) Phone #: (619) 533-3696
Activity:	Solid Waste Disposal Site
Status:	Closed
Closure Date:	1/1/1988
Insp. Frequency:	Quarterly
Issues:	Violation to the gas rule (27 CCR, Section 20919 Gas Control)

3. RESPONSIBLE AGENCIES

The CIWMB will be responsible for the gas sampling plan, analyzing the laboratory results and sending them to the LEA for discussion and further action. The LEA will be responsible for the sampling part. CIWMB staff will also place the sampling plan and site investigation results in CIWMB files and update the site's Solid Waste Information System (SWIS) database.

4. DATA COLLECTION

Gas screening will be conducted using a portable gas detection instrument (capable of measuring methane, carbon dioxide, oxygen and hydrogen sulfide up to 1,000 ppm). Gas sampling will be done using containers (Tedlar Bags) provided by CIWMB's Environmental Laboratory Accreditation Program (ELAP)-certified laboratory contractor. Field screening will be conducted in accordance with the gas sampling and analysis protocol and sample collection and analysis conducted in accordance with ASTM D1946 (Fixed Gases). The CIWMB will use regulatory limits established by both 27 CCR Section 20919.5 and local Air Quality Management District (AQMD) rules.

5. GAS INVESTIGATION TASKS

a. LEA staff will be responsible for all the sampling procedures (i.e. sampling, labeling, preserving, decontamination, packaging, and shipping the samples to the accredited lab). Collected samples will be analyzed for Fixed Gases (ASTM D1946) and volatile organic compounds VOCs (Method TO-15).

b. Analysis for all gas samples will be performed by CIWMB's contract laboratory, ExcelChem.

c. Upon receipt of laboratory analysis reports for collected samples, CIWMB will provide the LEA with a copy of these results.

6. SAMPLING LOCATIONS

Approximately 10-15 discrete gas samples will be taken at established monitoring probes at the sampler's discretion. Sampling locations will be predetermined based on available site information and data. The authoritative protocol allows the investigator the flexibility to move sampling locations, as necessary, to accommodate unforeseen field conditions.

7. GAS SAMPLING EQUIPMENT

The following equipment and supplies will be necessary to perform the sampling:

- Gas Detection Instrument
- Tedlar Bags
- Trash Bags
- Pneumatic Air Sampling Pump
- Photographic Camera
- Gas Monitoring Data Log Sheet
- Tool Kit (screwdriver, wrench, pliers)
- First Aid Kit
- Chain of Custody Forms
- Mailing Labels and Markers
- Log Sheets
- Packing and Duct Tape

8. GAS SAMPLING PROTOCOL

Gas samples will be collected using pneumatic air pumps, gas detection instrument, and Tedlar bags. All sampling equipment and containers will be decontaminated prior to use.

a. Review this workplan
b. Notify owner of planned fieldwork schedule. Do not proceed with monitoring/sampling until is been confirmed that property owner has been notified.
c. Assemble paperwork and forms, complete preliminary information if appropriate on the forms.
d. Carefully follow instrument manufacturer warm-up and calibration procedures for all equipment to obtain accurate measurements.
e. Record weather conditions if possible (i.e. Temperature, wind speed, barometric pressure).

f. Monitor probes for methane, oxygen and carbon dioxide using a LFG analyzer (detector). Purge the probes using your detector until 3 probe volumes are removed and the methane readings are constant for 30 seconds. Annotate the constant reading on the Gas Screening/Sampling log-sheets provided at the end of this work plan.

g. Purging of probes can be done as follows: (Rule of thumb)

Shallow probe:	60-90 seconds
Medium probe:	90-120 seconds
Deep probe:	120+ seconds

Note: Be consistent with your purging times for all the probes

h. Upon completion of the field monitoring, a probe selected by the investigator will be sampled for laboratory analysis. (Establish your sampling criteria and be consistent).

i. Pump samples directly from the probe into the 1-liter Tedlar bag provided by the laboratory. Use the small blue pump provided in the Gas Kit (yellow case) by the field shop.

j. You will be taken to samples per probe, one for each of the analyses (Fixed Gases and TO-15).

k. Using white ExcelChem sticker provided, label the Tedlar bag with the following information:

- Sample ID (i.e. Name of the probe-depth, GP1-shallow, GP2-deep, etc.)
- Client (CIWMB)
- Date & Time
- Project (Allred Collins LF)
- Analysis (Fixed Gases & TO-15)
- Sampler initials

l. Enclose the bags in the ice chest when done sampling to avoid exposure to UV light as some of the chemical elements can break down if exposed to sun light.

m. For quality assurance and control purposes, collect a duplicate sample in a separate Tedlar bag at the same location and depth that one of your originals. This sample has to be labeled with a fictitious name that only you would know. Make sure that you take this sample immediately after the original sample.

n. Prepare Chain-of Custody Record (COC) provided by ExcelChem with the following information:

- Project Manager (Abel Martinez)
- Phone # (916-341-6724)
- Company/Address (CIWMB)

- Fax # (916-319-7612)
- Project # (Leave blank)
- Project Name (Allred Collins LF)
- Location
- Sampler Signature
- Sample ID (Match with the ones in the Tedlar bags)
- Date& Time (Match with the ones in the Tedlar bags)
- Container (Add Tedlar bag in space provided)
- Method Preserved (None)
- Matrix (Air)
- Analysis Request (Add TO-15 and Fixed Gases in spaces provided)
- Requested TAT (Circle 1 week)
- Relinquished by (Your signature with date & time)
- Keep pink copy for your records and enclose the rest of the form in the ice chest.

o. Prepare the samples for shipment as follows:

- Make sure the sample labels are completed as required
- Include COC form inside package (ice chest)
- Complete packing/shipping labels
- Get ready for package to be picked up or deliver it to a service center

9. DECONTAMINATION PROCEDURES

All equipment that comes into contact with landfill gas will be decontaminated in a designated area. Decontamination will consist of operating the sampling equipment with nitrogen or ambient air for 2 minutes to purge residual gas.

10. GAS SAMPLE CONTAINER AND PRESERVATION

Decontaminated Tedlar Bags will be supplied by the laboratory and will not require decontamination before sample collection. No preservative will be added to the containers.

11. DISPOSAL OF RESIDUES

In the process of collecting gas samples, the LEA sampling team will generate different types of potentially contaminated investigation-derived waste (IDW) that may include:

- Used personal protective equipment (PPE)
- Disposable sampling equipment

The U.S. EPA's National Contingency Plan requires management of IDW generated during sampling comply with all applicable or relevant and appropriate requirements to the extent practicable. Used PPE and disposable equipment will be double bagged and placed in municipal refuse dumpster. Any PPE and disposable equipment that is to be disposed of which can still be used will be rendered inoperable before disposal

12. ANALYTES OF CONCERN

Analytes of concern at this site are Fixed Gases and Volatile Organic Compound (VOCs).

13. ANALYTICAL METHODS

Samples will be analyzed using Method ASTM D1946 for Fixed Gases and EPA TO-15 for VOCs.

14. ANTICIPATED COST

Based on discussions with ExcelChem Analytical Laboratory the following analyses costs are presented:

METHOD	PARAMETER	UNIT COST	SAMPLES	COST
ASTM D1946	Fixed Gases + Methane	$140.00	7	$980.00
EPA TO-15	Volatile Organics	$250.00	7	$1,750.00
Duplicate	ASTM D1946 (Fixed Gases)	$140.00	1	$140.00
			Total	**$2,870.00**

15. FIELD QUALITY CONTROL

One field duplicate sample will be collected simultaneously with a standard sample from the same source under identical conditions into a separate sample container. The duplicated sample is treated independently of its counterpart in order to assess laboratory performance through comparison of the results.

16. LABORATORY QUALITY CONTROL

The analytical laboratory will perform Quality Control (QC). The QC will include project specific QC, method blank results, laboratory control spike, and matrix spike results.

1. Project Specific QC – No project specific QC has been requested by the CIWMB

2. Method Blank Results – A method blank is a laboratory-generated sample that assesses the degree to which laboratory operations and procedures cause false-positive analytical results for the CIWMB samples. The method blank results associated with the samples will be included with the analytical results.

3. Laboratory Control Spike – A Laboratory Control Spike (LCS) is a sample that is spiked with known analyte concentrations, and analyzed at approximately 10 percent of the sample load in order to establish method-specific control limits. The LCS results associate with CIWMB samples will be attached on the LCS and LCS Duplicated Analysis Report.

4. Matrix Spike Results – A matrix spike is a sample that is spiked with known analyte concentrations and analyzed at approximately 10 percent of the sample load in order to establish method-specific control limits. The matrix spike results associated with CIWMB samples will be attached on the Matrix Spike and Matrix Spike Duplicate Analysis Report.

5. Accuracy – Accuracy will be measured by percent recovery as defined by:

$$\% \text{ Recovery} = \frac{(\text{measured concentration}) \times 100}{(\text{Actual concentration})}$$

17. FIELD NOTES

A field logbook will be used to document the vital project and sample information. At a minimum, the following sample information will be recorded: See attached log sheet at the end of this work plan.

- Sample ID
- Location
- Date & Time
- Ambient temperature (if possible)
- Purging time
- Monitoring data (i.e. methane, CO_2 and O_2 concentrations)
- Any other field comments by the sampler

18. PHOTOGRAPHS

Photographs will be taken at the sampling location and at surrounding areas. The photographs will verify information entered in the field logbook. Each photograph taken will be written in the logbook with the approximate time, date, and location.

19. REPORTING

Following receipt of the analytical data from the laboratory, LEA staff will evaluate and summarize project data/information onto appropriate figures and tables. LEA staff will prepare a landfill gas sampling report providing descriptions of field procedure/methodologies implemented, a summary of landfill gas concentrations and migration, and discussion of the analytical results that will help in the future assessment of the site and to determine its compliance with state minimum standards.

Appendix A

ATTACHMENTS

ATTACHMENT # 1

CHAIN-OF CUSTODY FORM

Representative Example

09/10/2002 11:56 9163416369 CIWMB RCTS BRANCH PAGE 01

Excelchem Environmental Labs
500 Giuseppe Court, Suite 3
Roseville, CA 95678
Ph: 916-773-3664 Fx: 916-773-4784

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: ABEL MARTINEZ-CENTENO
Phone #: (916) 341-6724
Company/Address: CIWMB 1001 "I" STREET SACTO, CA 95812
Fax #: (916) 319-7612 7533
Project Number/P.O.#: 02
Project Name: 14th AVE. LF.
Project Location: 14th AVENUE & POWER INN RD.
Sampler Signature: [signature]

Electronic Data Deliverables Request:
Global I.D.#:
COC #:
Location I.D.#:
Email Address: amartine@ciwmb.ca.gov

802079

ANALYSIS REQUEST Page 1 of 2
Bin#: [illegible]
Due Date: 8/05

Sample ID	Sampling Date	Sampling Time	VOA	SLEEVE	1L GLASS	PLASTIC	TEDLAR BAG	HCl	HNO3	ICE	NONE	WATER	SOIL	AIR	BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	FIXED GASES / METHANE	TO-15	Requested TAT: 12hr/24hr/48hr/72hr/1wk	LAB USE ONLY:
K1D	7/29	8:43					X				X			X																X		1wk	A0702807
K1D	7/29	8:43					X				X			X																	X	1wk	
F3FD	7/29	12:30					X				X			X																X		1wk	A0702808
F3FD	7/29	12:30					X				X			X																	X	1wk	
F1SD	7/29	12:50					X				X			X																X		1wk	A0702809
F1SD	7/29	12:50					X				X			X																	X	1wk	
T5BS	7/29	1:07					X				X			X																X		1wk	A0702810
T5BS	7/29	1:07					X				X			X																	X	1wk	
A3BD	7/29	1:45					X				X			X																X		1wk	A0702811
A3BD	7/29	1:45					X				X			X																	X	1wk	

Relinquished by:	Date	Time	Received by:
ABEL MARTINEZ	7/29/02	3:55	

Relinquished by:	Date	Time	Received by Laboratory:
	7/29/02	3:55	Shannon Beale

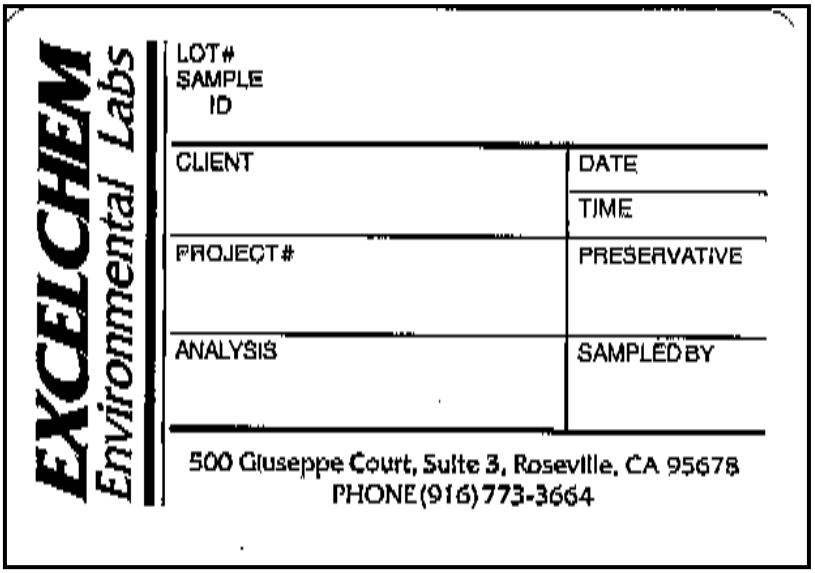
Remarks/Condition of Sample:

Bill To:

ATTACHMENT # 2

LABORATORY LABEL

(Sticker Provided by Laboratory)
Affix to the Tedlar Bags



California Integrated Waste Management Board
1001 I Street - Sacramento, CA 95814
Permitting & Enforcement
(Closed Illegal & Abandoned Site Investigation Unit)

Gas Screening/Sampling

Allred Collins Landfill
San Diego, CA 37-CR-0097

Sample ID	Location		Date mm/dd/yy	Time (military)	Temp. (^{o}F)	Purging Time	Screening Data				Photo Taken (Y/N)	Field Observations (e.g., pressure at wells, sampling equipment (tedlar bag or suma), noticeable odors, colors, location (probe, well, enclosed structure), etc.)
	Latitude (N)	Longitude (W)					CH4 (%)	O_2 (%)	CO (ppm)	H_2S (ppm)		