RECON Procedure: REC-WP-4-02

Air Sampling

Thorium Remediation Project
Tulsa, Oklahoma

REVISION: **03**

EFFECTIVE DATE: **JUNE 2004**

Bill Vinzant — 6-17-04

Approved by: J. W. (Bill) Vinzant – Project Manager — Date

Kaiser Aluminum & Chemical Corporation

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6/15/04
Danny P. Brown – Project Manager / Date

6/15/04
Richard Lewis – Quality Control Supervisor / Date

Remedial Construction Services, L.P.

1.0 PURPOSE

The purpose of this procedure is to provide instruction for the collection of air samples.

2.0 DEFINITIONS

NA

3.0 PREREQUISITES PRECAUTIONS/LIMITATIONS

3.1 Air samples are performed in specific work areas to determine the extent of the airborne radiological hazards, establish radiological protective measures/controls and control personnel exposure.

3.2 Check the applicable health and safety guidance for the site. Ensure the proper protocol and other precautions delineated in the appropriate documents (e.g., Environmental Health and Safety Plan, Radiation Health and Safety Plan, Safety Work Permit, etc.) are followed.

3.3 Additional guidance on performing air sampling is provided in NUREG-1575.

4.0 EQUIPMENT

4.1 Air Sample Data & Analysis Log (REC-WP-4-02-1), Air Sampler Filter Envelope(s) (REC-WP-4-02-2) and PDR Data & Analysis Log (REC-WP-4-02-3).

4.2 Black ink pen (indelible)

4.3 Cellulose-ester filters or other appropriate filters

4.4 High Volume Sampler

4.5 Personal DataRAM (PDR)

5.0 PROCEDURE

5.1 Preparation for High Volume Air Sampling

5.1.1 Obtain air sample envelope(s) and fill out with the appropriate information: Date, Serial Number, and Placement Location.

5.1.2 Load filter head with appropriate filter and start pump.

5.1.3 Record start time and meter flow rate on sample envelope form REC-WP-4-02-2.

5.2 Collection of High Volume Air Sample

5.2.1 Record final pump stop time and ending flow rate on sample envelope.

5.2.2 Remove filter from sampling head and place in sample envelope.

5.2.3 Determine total elapsed time and enter on envelope and data log.

5.2.4 Multiply total elapsed time by the average flow rate to determine volume sampled in liters or cubic feet as appropriate and enter on envelope.

5.2.5 Place sample media on a planchet and insert in Ludlum Model 2929 and record results on REC-WP-4-02-1.

5.3 Preparation for PDR Air Sampling

5.3.1 Perform zero check and fill out Attachment 5 (Personal DataRAM Daily Inspection and Zero Form) located in RECON's Environmental Health and Safety Plan (EHASP).

5.3.2 Place PDR in designated monitoring location.

5.4 Retrieving PDR Data

5.4.1 Collect PDR samplers and download data onto computer.

5.4.2 Summarize data on form REC-WP-4-02-3.

6.0 REFERENCES

NA

7.0 ATTACHMENT

Form REC-WP-4-02-1	Air Sampling Data & Analysis Log
Form REC-WP-4-02-2	Air Sampling Envelope
Form REC-WP-4-02-3	PDR Data & Analysis Log

Form REC-WP-4-02-1

Form REC-WP-4-02-1
Air Sample Data & Analysis Log

Sample #	Date of Sample

Instrument Type	
Instrument Serial #	
Detector Type	
Detector Serial #	
Cal. Due Date	

Pump Type	
Pump Serial #	
Cal. Due Date	

Derived Air Concentration Value:

2E-12	mCi/ml	Site Background Activity	

Ambient Conditions / Comments

Sample Collection Data					
Time Start	Time Stop	Elapsed Time (Min)	Flow Rate (lpm)	Total Volume (liters)	Technician Performing Count

Field Screening Count Data			
α Bkg Count Rate	α Gross Counts	α Net Count Rate	Technician Performing Count

Analysis Data				
Work Area Concentration Quick Count (mCi/ml)	DAC Fraction Quick Count (%)	Laboratory Result (pCi/F)	Laboratory Data Concentration (mCi/ml)	Laboratory DAC Fraction (%)

Reviewed By: _____

Form REC-WP-4-02-2

Form REC-WP-4-02-2
Air Sample Envelope

Date: _____ Sample # _____

Time On: _____ Sampler ID # _____

Time Off: _____ Total Min: _____

Flow: _____ Volume: _____

Technician: _____

Location: _____

Reason: _____

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Revision 03
June 2004

Form REC-WP-4-02-3

Form REC-WP-4-02-3
PDR Data & Analysis Log

Date	Wind Direction/weather	Elasped Run Time	Up Wind Max STEL mg/m³	Up Wind Avg STEL mg/m³	Location	Elasped Run Time	Down Wind Max STEL mg/m³	Down Wind Avg STEL mg/m³	Location	Estimated TH-232 pCi/g Concentration	% DAC	COMMENTS
4/12/2004					* Note 1	7h 36min	0.019	0.008	Down wind of job site	20	0.044	* Note 1
4/15/2004	South	9h 40min	0.168	0.051	Fence at Safety Trailer	9h 40min	0.128	0.022	North fence line	40	0.242	No data collected
4/16/2004	South	9h 30min	0.099	0.076	South Fence Line	9h 25min	0.07	0.036	North fence line	60	0.594	
4/17/2004	South	6h 0min	0.112	0.078	South Fence Line	6h 00min	0.041	0.03	North fence line	80	0.660	
4/19/2004	South	8h 05min	0.112	0.088	Fence at Safety Trailer	8h 00min	0.287	0.062	50 feet from work	100	1.705	
4/22/2004	South	7h 30min	0.15	0.084	Fence at Safety Trailer	7h 30min	0.112	0.031	50 feet from work	120	1.023	
4/26/2004	South	9h 40min	0.017	0.005	South Fence Line	9h 35min	0.014	0.006	50 feet from work	140	0.231	
4/27/2004	South	9h 35min	0.016	0.003	South Fence Line	9h 35min	0.026	0.009	50 feet from work	160	0.396	
4/28/2004	South	9h 15min	0.038	0.017	South Fence Line	9h 15min	0.055	0.025	50 feet from work	180	1.238	
5/3/2004	South	8h 25min	0.028	0.007	South Fence line @ Safety Trailer	7h 25min	0.037	0.013	50 feet from Conveyor	200	0.715	

This form will be kept as a spreadsheet.
The information above is example data