



DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT, CORPS OF ENGINEERS
8945 LATTY AVENUE
BERKELEY, MISSOURI 63134

REPLY TO
ATTENTION OF:

January 23, 2004

Formerly Utilized Sites Remedial Action Program

SUBJECT: Transmittal of Fourth Quarter (October 1 – December 31, 2003) Calendar Year 2003
Federal Facility Agreement (FFA) Progress Report for the FUSRAP St. Louis Sites

Mr. Dan Wall
U. S. Environmental Protection Agency
Region VII, Superfund Branch
901 North 5th Street
Kansas City, Kansas 66101

Dear Mr. Wall:

Please find enclosed the Fourth Quarter (October 1 – December 31, 2003) Calendar Year 2003 Federal Facility Agreement (FFA) Progress Report for the Formerly Utilized Sites Remedial Action Program (FUSRAP) St. Louis Sites. This report summarizes activities accomplished during the quarter. Also identified are planned but not accomplished activities for the fourth quarter of 2003 and activities planned for the first quarter of 2004.

Copies of this report have been forwarded to Mr. Robert Geller and Mr. Eric Gilstrap of the Missouri Department of Natural Resources. If you have any questions concerning this report, please contact Dr. Greg Hempen at (314) 260-3939.

Sincerely,

Sharon R. Cotner
FUSRAP Program Manager

Enclosure

FOURTH QUARTER CY03 FEDERAL FACILITY AGREEMENT PROGRESS REPORT

ACTIVITIES ACCOMPLISHED FOR FOURTH QUARTER 2003 (October 1, 2003 – December 31, 2003)

Community Relations

- Conducted three St. Louis Oversight Committee Meetings this quarter (October 10th, November 14th, and December 12th.)
- Issued the Five-Year Review report for regulatory review and comment: Initial Five Year Review Report for the FUSRAP St. Louis Sites in St. Louis, Missouri.
- Issued Revision 4 of the Community Relations Plan for the St. Louis FUSRAP Sites, Revision 4 for St. Louis, Missouri dated September 30, 2003 for regulatory review and comment. Responses to comments were issued December 4, 2003.
- Finalized the Community Relations Plan for the St. Louis FUSRAP Sites, Revision 4 for St. Louis, Missouri dated December 3, 2003.
- Updated the FUSRAP web pages with site status as of October 2003 and quarterly project schedules. Also posted the Revision 4 of the Community Relations Plan for the St. Louis FUSRAP Sites for public access and regularly updated the St. Louis Oversight Committee web page with copies of the monthly meeting minutes and presentations.

Document Titles Submitted within the Quarter	Review Status	Document Date
Environmental Monitoring Implementation for Fiscal Year 2004	Final	December 2003
Community Relations Plan for the St. Louis FUSRAP Sites, Revision 4 for St. Louis, Missouri	Draft	September 2003
Community Relations Plan for the St. Louis FUSRAP Sites, Revision 4 for St. Louis, Missouri	Final	December 2003
Five-Year Review Report: Initial Five Year Review Report for the FUSRAP St. Louis Sites in St. Louis, Missouri	Draft	September 2003
SLAPS – Phase 4 and Phase 5 Work Description (Erratum)	Final	November 2003
SLAPS – Phase 4,5 and 6 PDI Addendum 1	Final	October 2003
SLAPS – Phase 6 Work Description (Erratum)	Final	November 2003
SLDS – City of Venice, Illinois Vicinity Property (DT-11) Remediation Activity Work Description, Appendix A.5.2	Rev B	October 2003
SLDS – PDI Data Summary Report, City of Venice, Illinois Vicinity Property (DT-11), Appendix A.5.1	Final	October 2003
SLDS – City of Venice, Illinois Vicinity Property (DT-11) Remediation Activity Work Description, Appendix A.5.2	Final	November 2003

Note: Only Final and Regulatory Review Documents are reported in this report.

All Sites

- Completed the Environmental Monitoring Implementation for Fiscal Year 2004.

St. Louis Airport Sites (SLAPS)

- Decommissioned ground-water wells: M10-8S, M10-8D, PW37, PW38, PW39 and PW40.
- Completed excavation activity in Phase 1. Completed asphalt shoulder restoration along McDonnell Blvd.

St. Louis Airport Sites (SLAPS) - continued

- Continue excavation in Phases 2 & 3. Excavated and shipped a total of 25,500 cubic yards (cyd) of contaminated material to U.S. Ecology in Idaho in the fourth quarter. Discharged 340,406 gallons of water for release in accordance with an MSD permit in the fourth quarter. Since the beginning of the project, a total of 2,180,906 gallons of water has been released. There were no lost time accidents in the quarter. There have been 497 days without a lost-time accident.
- Initiated excavation in Phases 4 & 5.

St. Louis Downtown Site (SLDS)

- Completed remedial activities at Mallinckrodt Plant 1 – Building X Rail Spur.
- Completed interim soil removal at the Thomas and Proetz Lumber Company Vicinity Property (DT-10).
- Excavated and shipped a total of 2,052 cyd of contaminated material to U.S. Ecology in Idaho in the fourth quarter. There were no lost time accidents in the quarter. There have been 717 days without a lost-time accident.
- Initiated remedial activities at the City of Venice, Illinois Vicinity Property (DT-11).

ACTIVITIES PLANNED FOR THE FOURTH QUARTER 2003 BUT NOT ACCOMPLISHED

St. Louis Downtown Site (SLDS)

- Decommission four wells or transfer the ground-water monitoring wells (B16W02S, B16W04S, B16W10S and B16W13SR) to Mallinckrodt. Mallinckrodt has verbally requested that the four wells be transferred. The Corps will contact the state to transfer well ownership once Mallinckrodt provides their request letter.
- Well DW18 will be repaired as soon as the property owner, Mallinckrodt, resolves whether the flush-mount protective casing may be replaced with above-ground protective casing and bollards.

ACTIVITIES PLANNED FOR FIRST QUARTER 2004 (January 1, 2004 – March 31, 2004)

All Sites

- Issue the final Five-Year Review Report for Formerly Utilized Sites Remedial Action Program (FUSRAP) St. Louis Sites for regulatory review.

North County Site (HISS, SLAPS, and SLAPS VPs)

- Submit for regulatory review to MDNR and EPA the Record of Decision for the North St. Louis County Sites.

St. Louis Airport Sites (SLAPS)

- Initiate excavation and drainage improvements in Coldwater Creek as a portion of Phases 4 & 5 activities.

St. Louis Downtown Site (SLDS)

- Transfer the ground-water monitoring wells to Mallinckrodt.
- Repair well DW18.
- Complete City of Venice, Illinois Vicinity Property (DT-11) backfill and restoration activities.

DATA OBTAINED IN FOURTH QUARTER CY 2003 (October 1, 2003 – December 31, 2003)

Table 2 summarizes the samples obtained from each site and their respective purposes. All data is available in electronic form. Any request for actual data, in part or total, will be provided to the requestor as the entire electronic quarterly data file.

The Quarterly Discharge Monitoring Report for the North County Sites is included (See Attachment A).

The Quarterly MSD Self-Monitoring Reports for the St. Louis Site are included (See Attachment B).

Table 2. Fourth Quarter 2003 Sample Summary

Property Category	Sampling Event Name	Sample Matrix	Count	Sample Type	Purpose
ALL	Environmental Alpha Tracks-Environmental Monitoring--1st Semi-Annual-2003	Track Etch Detectors	16	Grab	Environmental
	Environmental TLDs-Environmental Monitoring--3Q2003	Thermoluminescent Dosimeters	19	Grab	Environmental
	Groundwater-Environmental Monitoring--3Q2003	Groundwater	14	Grab	Environmental
	Groundwater-Environmental Monitoring--4Q2003	Groundwater	4	Grab	Environmental
HISS	HISS Air (Particulate Air)-Environmental Monitoring	Cellulose Filter	30	Grab	Environmental
	HISS NPDES-Environmental Monitoring	Stormwater	9	Composite	Environmental
HISS_VP	Futura	Soil	5	Grab	Other
	VP 01L-Characterization	Soil	43	Grab	Characterization
	VP 01L-PDI	Soil	13	Grab	Characterization
N/A	Old Hallsferry Bridge-Characterization	Soil	10	Grab	Characterization
SLAPS	Radium Pits (SU #16)-Verification-Class 1	Soil	1	Grab	Verification
	Shaw HTR Hot Zones	Soil	67	Grab	Other
	SLAPS MSD-Compliance	Process Water	1	Grab	Characterization
	SLAPS MSD-Compliance	Process Water	7	Grab	Characterization
	SLAPS MSD-Compliance	Soil	1	Grab	Characterization
	SLAPS MSD-Compliance	Soil	7	Grab	Characterization
	SLAPS NPDES-Environmental Monitoring	Stormwater	35	Grab	Environmental
	SLAPS Phase 1 (SU #27)-Verification-Class 1	Soil	5	Grab	Verification
	SLAPS Phase 2 (SU #28)-Verification-Class 1	Soil	16	Grab	Verification
	SLAPS Phase 2 (SU #29)-Verification-Class 1	Soil	2	Grab	Verification
	SLAPS Phase 2 (SU #30)-Verification-Class 1	Soil	27	Grab	Verification
	SLAPS Phase 2 (SU #31)-Verification	Soil	25	Grab	Verification
	SLAPS Phase 2 (SU #32)-Verification	Soil	24	Grab	Verification
	SLAPS Waste Characterization	Soil	1	Grab	Characterization
SLAPS VP	VP 02C-Characterization	Soil	3	Grab	Characterization
	VP 03C-Characterization	Soil	2	Grab	Characterization
	VP 04C-Characterization	Soil	5	Grab	Characterization
	VP 04C-PDI	Soil	48	Grab	Characterization
	VP 30-Characterization	Soil	1	Grab	Characterization
	VP 32-Characterization	Soil	10	Grab	Characterization
	VP 36-Characterization	Soil	2	Grab	Characterization
	Utility Works	Soil	10	Grab	Characterization
	VP 49-Characterization	Soil	1	Grab	Characterization
	VP 01L-Class 1	Soil	6	Grab	Verification
	VP 06-PDI	Soil	9	Grab	Characterization
	VP 09C-Characterization	Soil	15	Grab	Characterization
	VP 10C-Characterization	Soil	17	Grab	Characterization
	VP 15-Characterization	Soil	197	Grab	Characterization
	VP 21-Characterization	Soil	34	Grab	Characterization
	VP 23-Characterization	Soil	12	Grab	Characterization
	VP 28-Characterization	Soil	8	Grab	Characterization
	VP 29-Characterization	Soil	2	Grab	Characterization
	VP 40A & VP 08C-PDI	Soil	139	Grab	Characterization
	VP 45-Characterization	Soil	15	Grab	Characterization
	VP 53-Characterization	Soil	18	Grab	Characterization
SLAPS VP	VP 53-Characterization-Class 2	Soil	39	Grab	Characterization
	VP 60-Characterization	Soil	17	Grab	Characterization

Table 2. Fourth Quarter 2003 Sample Summary

Property Category	Sampling Event Name	Sample Matrix	Count	Sample Type	Purpose
SLDS	Plant 1 (Bldg. X)-Delineation	Soil	26	Grab	Characterization
	Plant 1 (Bldg. X)-Preferential Pathway Investigation	Soil	4	Grab	Environmental
	Plant 1 (Bldg. X)-Verification	Soil	13	Grab	Verification
	Plant 6WH-PDI	Soil	47	Grab	Environmental
	Plant 7E-Verification-Class 1	Soil	56	Grab	Verification
	Plant 7-Verification	Soil	11	Grab	Verification
SLDS VP	City of Venice (Hot Spots)-Verification	Soil	13	Grab	Verification
	Heintz Steel (DT-6)-Verification	Soil	44	Grab	Verification
	Heintz Steel (DT-6)-Verification-Class 2	Soil	14	Grab	Verification
	Metropolitan Sewer District (MSD)-Permit Renewal	Wastewater	2	Grab	Characterization
	Thomas & Proetz Lumber Company (DT-10)-Characterization	Soil	23	Grab	Characterization
	City of Venice (DT 11)-Preferential Pathway Investigation	Soil	4	Grab	Environmental
	City of Venice (DT-11)-SU1B-Verification-Class 1	Soil	1	Grab	Verification
	City of Venice (DT-15)-Verification	Soil	8	Grab	Verification
	City of Venice (DT-2)-PDI	Soil	31	Grab	Characterization
	City of Venice-Characterization	Soil	2	Grab	Characterization
	City of Venice-Waste Characterization	Soil	1	Grab	Characterization
	Heintz Steel (DT-6)-Inaccessible Soils Evaluation	Soil	12	Grab	Verification
	Thomas & Proetz Lumber Company (DT-10)-Preferential Pathway Investigation	Soil	3	Grab	Environmental

ATTACHMENT A

**NPDES QUARTERLY DISCHARGE MONITORING REPORT
FOR THE NORTH COUNTY SITE**



DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT, CORPS OF ENGINEERS
8945 LATTY AVENUE
BERKELEY, MISSOURI 63134

REPLY TO
ATTENTION OF:

January 23, 2004

Formerly Utilized Sites Remedial Action Program

SUBJECT: Fourth Quarter of 2003 Discharge Report for NPDES Permit MO 0111252 and Applicable or Relevant and Appropriate Requirements (ARARs) for Discharges to the Waters of the State at the St. Louis Airport Site (SLAPS), St. Louis, MO

Mr. Kurt Riebeling
Chief, Water Unit
Missouri Department of Natural Resources
7545 South Lindbergh, Suite 210
St. Louis, Missouri 63125

Dear Mr. Riebeling:

In accordance with NPDES Permit MO-0111252 for the Hazelwood Interim Storage Site (HISS), and the substantive requirements for storm-water discharge to waters of the state at the St. Louis Airport Site (SLAPS), St. Louis, MO, this letter transmits two copies of the storm-water discharge monitoring report for the fourth quarter of 2003. Attachment A of this report contains the available analytical results for the fourth quarter of 2003 for storm-water Outfalls 001, 002, and 003 at HISS. Attachment B contains the analytical results for storm-water Outfalls 001a, 001b, 002, and 003 at SLAPS.

Hazelwood Interim Storage Site (HISS)

During the fourth quarter of 2003, permit-specified parameters were measured in October, November, and December. Data results indicate that total organic halogen (TOX) values were positive for all outfalls; therefore, further analyses for volatile organic compound (VOC) and semi-volatile organic compound (SVOC) were conducted to identify the specific constituent as required by the permit. No compounds were detected above the detection limits.

St. Louis Airport Site (SLAPS)

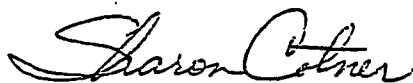
During the fourth quarter of 2003 there were twelve rainfall events. There are two exceedences to report per the monitoring requirements of the permit. On October 9, 2003, compliance samples at Outfall 001a exceeded the daily maximum limit of 120 mg/L for COD with a result of 204 mg/L. The Aroclor 1254 value for this sample was reported as 1.3 ug/L, while the permit states "no release" criteria for PCBs. A notice of release was sent to MDNR on January 22, 2004, and is included with this data package.

As stated in the last quarterly report for SLAPS, Events 4 and 5 of the third quarter are included in this report. Fourth quarter Events 11 and 12 at SLAPS will be included in the next quarterly report.

As per MDNR letter from Mr. Matthew Sikes addressed to Ms. Sharon Cotner dated February 19, 2002, sampling at Outfall 002 has been reduced to once a year, and sampling at Outfall 003 has been discontinued. Discharge was experienced at the emergency outfall 001b due to heavy rainfall in November.

If you have any questions concerning this report, please contact me at (314) 260-3905.

Sincerely,

A handwritten signature in cursive script that reads "Sharon Cotner".

Sharon Cotner
FUSRAP Program Manager

Enclosures

ATTACHMENT A

**QUARTERLY DISCHARGE MONITORING REPORT FOR THE
HAZELWOOD INTERIM STORAGE SITE**

**Fourth Quarter 2003 – Storm-water Discharge Monitoring Report –
Hazelwood Interim Storage Site, St. Louis, MO**

FACILITY NAME	PERMIT NUMBER	COUNTY	OWNER	FACILITY CONTACT
Hazelwood Interim Storage Site (HISS) ¹	MO-0111252	St. Louis	Jarboe Realty Investment	S.R. Cotner, Program Manager, USACE
OPERATOR OF FACILITY			TYPE OF FACILITY	
United States Army Corps of Engineers (USACE)			Standard Industrial Classification – 9999, non-classifiable ¹	
REQUIRED FREQUENCY OF MONITORING				THIS REPORT COVERS
Flow and rainfall – daily; Settleable solids – monthly; Other parameters ² – quarterly				4 th Quarter- October 2003 – December 2003
SAMPLES COLLECTED BY: SAIC				
ANALYSIS PERFORMED BY				
Severn-Trent (chemical analyses) and St. Louis Sites Radioanalytical Laboratory (radiological analyses)				
SAMPLE LOCATION	EVENT 1	EVENT 2	EVENT 3	
Outfall 1	10/09/03	11/18/03	12/10/03	
Outfall 2	10/09/03	11/18/03	12/10/03	
Outfall 3	10/09/03	11/18/03	12/10/03	
REPORT APPROVED BY OWNER <i>for USACE, Sharon Cotner</i>				DATE <i>1-23-04</i>

NOTES:

¹ HISS is a CERCLA NPL site.

² Collect quarterly samples in the months of March, June, September, and December for pH, specific conductance, total organic carbon (TOC), total organic halogen (TOX), gross alpha, gross beta, Pb-210, Ra-226, Ra-228, Uranium (total), Th-230, and Th-232.

**Fourth Quarter 2003 – Storm-water Discharge Monitoring
Hazelwood Interim Storage Site, St. Louis, MO**

MONITORING PARAMETER	LIMITS ¹	UNITS ²	ANALYTICAL RESULTS AND DATA QUALIFIERS			SAMPLE TYPE	REMARKS and COMMENTS
			OUTFALL 1	OUTFALL 2	OUTFALL 3		
Settleable solids ³ : October	Daily max=1.5 Monthly avg=1.0	mL/L/hr	<0.20 ⁴	<0.20 ⁴	<0.20 ⁴	Grab	
Settleable solids ³ November		mL/L/hr	<0.20 ⁴	<0.20 ⁴	<0.20 ⁴	Grab	
Settleable solids ³ December		mL/L/hr	<0.20 ⁴	<0.20 ⁴	<0.20 ⁴	Composite	
pH	6.0-9.0	SU	6.2	6.5	6.5	Composite	Taken in field
Specific conductance	Monitor Only	umhos/cm	0.45	0.34	0.30	Composite	Taken in field
Total organic carbon	Monitor Only	mg/L	5.0	2.6	8.3	Composite	
Total organic halogen	Monitor Only	mg/L	12	6.0	5.5	Composite	
Gross alpha	Monitor Only	pCi/L	8.9	33	3.4	Composite	
Gross beta	Monitor Only	pCi/L	5.8 ⁴	12	5.8 ⁴	Composite	
Lead 210	Monitor Only	pCi/L	1.6 ⁴	1.7 ⁴	1.5 ⁴	Composite	Assumes secular equilibrium with Ra-226
Radium 226	Monitor Only	pCi/L	1.6 ⁴	1.7 ⁴	1.5 ⁴	Composite	
Radium 228	Monitor Only	pCi/L	1.1	2.1 ⁴	2.2 ⁴	Composite	Assumes secular equilibrium with Th-228
Uranium, total	Monitor Only	pCi/L	24	89	3.3	Composite	Calculated Value: addition of iso-analysis
Thorium 230	Monitor Only	pCi/L	6.0	4.5	4.7	Composite	
Thorium 232	Monitor Only	pCi/L	1.8 ⁴	1.1 ⁴	2.2 ⁴	Composite	
Rainfall	Monitor Only	inches	See Table 1	See Table 1	See Table 1	24-hr total	National Weather Service – Lambert St. Louis Int. Airport
Flow	Monitor Only	MGD	See Table 1	See Table 1	See Table 1	24-hr total	Continuous recorder

NOTES:

¹ Final limits as specified in the permit for settleable solids and pH.

² Results are reported in required units per permit.

³ Settleable Solids Sample Method = EPA 160.5.

⁴ The Minimum Detectable Activity (MDA) was used because the analysis did not result in a value above the MDA.

**Fourth Quarter 2003 - Hazelwood Interim Storage Site
Daily Rainfall¹ and Maximum Flow**

Table 1 - NPDES Daily Flow and Rainfall Data

Date	(Inches)	Outfall	Outfall	Outfall
2003	24-hour total	001 ²	002 ²	003 ²
1-Oct	0.00			
2-Oct	0.00			
3-Oct	0.03			
4-Oct	0.00			
5-Oct	0.00			
6-Oct	0.00			
7-Oct	0.00			
8-Oct	0.00			
9-Oct ³	1.13	0.50	0.15	0.15
10-Oct	0.00			
11-Oct	0.07			
12-Oct	Trace			
13-Oct	0.08			
14-Oct	0.25	0.010	0.012	
15-Oct	0.00	0.076		
16-Oct	0.80	0.084	0.059	
17-Oct	0.04		0.061	
18-Oct	0.00			
19-Oct	0.00			
20-Oct	0.00			
21-Oct	0.00			
22-Oct	0.00			
23-Oct	0.00			
24-Oct	0.00			
25-Oct	0.20			
26-Oct	0.00			
27-Oct	0.03			
28-Oct	0.18			
29-Oct	0.00			
30-Oct	0.00			
31-Oct	Trace			
Monthly Average ⁵		0.022	0.0091	0.0050

Date	(Inches)	Outfall	Outfall	Outfall
2003	24-hour total	001 ²	002 ²	003 ²
1-Nov	0.63	0.015	0.026	
2-Nov	0.00			
3-Nov	0.00			
4-Nov	0.06			
5-Nov	0.43			
6-Nov	0.14	0.015	0.014	
7-Nov	0.00			
8-Nov	0.00			
9-Nov	0.00			
10-Nov	Trace			
11-Nov	Trace			
12-Nov	0.00			
13-Nov	0.00			
14-Nov	0.28			
15-Nov	0.04			
16-Nov	Trace			
17-Nov	1.35	0.49	0.26	0.12
18-Nov ³	1.85	0.090	0.30	0.79
19-Nov	0.00			
20-Nov	0.00			
21-Nov	0.00			
22-Nov	0.00			
23-Nov	0.58	0.093	0.058	
24-Nov	Trace			
25-Nov	0.00			
26-Nov	Trace			
27-Nov	0.00			
28-Nov	Trace			
29-Nov	0.00			
30-Nov	0.00			
Monthly Average ⁵		0.020	0.022	0.030

Date	(Inches)	Outfall	Outfall	Outfall
2003	24-hour total	001 ²	002 ²	003 ²
1-Dec	0.00			
2-Dec	0.00			
3-Dec	0.10			
4-Dec	0.08			
5-Dec	0.10			
6-Dec	0.00			
7-Dec	0.00			
8-Dec	Trace			
9-Dec	0.30			
10-Dec ³	0.37	0.22	0.10	0.59
11-Dec	0.00			
12-Dec	0.00		0.064	
13-Dec	0.13	0.019		
14-Dec	Trace	0.016		
15-Dec	Trace		0.010	
16-Dec	0.01			
17-Dec	Trace			
18-Dec	0.03			
19-Dec	Trace			
20-Dec	0.00			
21-Dec	0.00			
22-Dec	0.77	0.083	0.12	
23-Dec	0.23	0.12	0.12	0.010
24-Dec	0.00			
25-Dec	0.00			
26-Dec	0.00			
27-Dec	0.00			
28-Dec	0.16			
29-Dec	0.06			
30-Dec	0.00			
31-Dec	0.00			
Monthly Average ⁵		0.015	0.013	0.019

Notes:

¹ Rainfall data obtained from National Weather Service (NWS) station at Lambert St. Louis International Airport.

² Daily maximum flow values are based on 24-hour flow and recorded as million gallons per day. All blank spaces represent zero flow.

³ Compliance samples collected on this day for the month indicated.

⁵ Monthly average includes daily values except readings associated with calibration, equipment/operator error and power failure. Used the maximum daily flow for computation.

All data taken to two significant digits; however, this may be limited based on the accuracy of instrumentation (i.e., flow).

Flow was measured continuously using ISCO Model 4210 Ultrasonic flow meters installed at each outfall.

**CASE NARRATIVE AND RESULTS SUMMARY
FOR THE HAZELWOOD INTERIM STORAGE SITE**

FUSRAP Laboratory
8945 Latty Ave.
Berkeley, MO 63134
(314) 260-3900

November 25, 2003

SAIC
500 NW Plaza, Ste. 1000
St. Ann, MO 63074

Case Narrative
File # 03ML804

Sample Receipt

This data package contains 3 water samples received from the Hazelwood Interim Storage Site on November 18th, 2003.

Analytical Methods

Settleable solids analysis was performed in accordance with procedure ML-020.

Data Qualifiers

Data flags appear in the Results Summary where samples reported results required statistical calculations. A "U" qualifier denotes that the activity reported is below the minimum detectable activity or that the isotope is not positively identified. An "N" qualifier denotes that the spike recovery is not within 80% to 120% for a Liquid or 70% to 130% for a solid. A "*" qualifier denotes poor duplicate results. A "J" qualifier denotes that the isotope was positively identified, however the reported values are estimated due to problems or unusual circumstances noted in this case narrative.

Problems or Unusual Occurrences

There were no problems or unusual circumstances associated with this sample delivery group.

Data Review and Certification of Accuracy

I certify, to the best of my abilities, that this data report is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



Brad Wilson
Laboratory Coordinator

11/25/03

Steve Howard
Laboratory Manager

FUSRAP Laboratory
8945 Latty Ave.
Berkeley, MO 63134
(314) 260-3900

Dec 24, 2003

SAIC
500 NW Plaza, Ste. 1000
St. Ann, MO 63074

Case Narrative
File # 03ML851

Sample Receipt

This data package contains 3 water samples received from the Hazelwood Interim Storage Site on Dec 10, 2003.

Analytical Methods

Gamma spectroscopy analysis was used to determine results for the following isotopes: ^{227}Ac , ^{241}Am , ^{137}Cs , ^{40}K , ^{231}Pa , ^{228}Ra , ^{228}Th , ^{232}Th , ^{226}Ra , ^{230}Th , ^{235}U , and ^{238}U . This analysis was performed in accordance with procedure ML-003. Gamma samples were prepared to give the best possible geometry with respect to volume and shape. Often the sample mass may be greater than or less than the mass of the calibration standard due to differences in sample matrix. Sample preparation was performed in accordance with procedure ML-001. USACE-CX requires the gamma spectroscopy method blank to be prepared from a background medium that is comparable to the sample matrix. The laboratory background medium contains trace levels of ^{226}Ra , ^{228}Ra , ^{228}Th , ^{232}Th , and ^{40}K that are greater than 2 times their respective MDA's. ^{226}Ra is determined by analyzing the ^{226}Ra daughter products and applying a correction factor of 1.5. This correction factor is the upper 95% confidence limit of the regression model performed on samples analyzed at the St. Louis FUSRAP Laboratory.

Alpha spectroscopy with the Claude Sill method of fluoride fusion was used to analyze ^{228}Th , ^{230}Th , and ^{232}Th . This analysis was performed in accordance with procedure ML-005. The method blank for ^{230}Th is often greater than 2 times the respective MDA. This is because of the close proximity of the ^{229}Th tracer causes attenuated counts to overlap into the ^{230}Th region of interest.

Alpha spectroscopy with the Claude Sill method of fluoride fusion was used to analyze ^{234}U , ^{235}U , and ^{238}U . The analysis was performed in accordance with procedure ML-015.

A gas proportional counter was used to analyze gross alpha and gross beta. The analysis was performed in accordance with procedure ML-018.

Alpha spectroscopy with the Claude Sill method of fluoride fusion was used to analyze isotopic ^{226}Ra . The analysis was performed in accordance with procedure ML-006.

Settleable solids analysis was performed in accordance with procedure ML-020.

Data Qualifiers

Data flags appear in the Results Summary where samples reported results required statistical calculations. A "U" qualifier denotes that the activity reported is below the minimum detectable activity or that the isotope is not positively identified by the software during peak identification. An "N" qualifier denotes that the laboratory control spike is outside the 3-sigma control limit determined from LCS control charts. The LCS control charts are based on previously analyzed batch quality control samples. A "*" qualifier denotes poor duplicate results. A "J" qualifier denotes that the isotope was positively identified, however the reported values are estimated due to problems or unusual circumstances noted in this case narrative.

Initial calibrations, quality control samples, and daily quality control checks are within specified criteria or have been assigned the appropriate qualifier as required.

Problems or Unusual Occurrences

Sample Delivery Group 03ML844, 03ML851, and 03ML854 were analyzed as one batch with one set of QA/QC. The Blank and LCS for 03ML851 may be found in the Raw Data Section of this report only, and all other relevant QA/QC data may be found in the appropriate sections.

Data Review and Certification of Accuracy

I certify, to the best of my abilities, that this data report is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.

Brad Wilson
Laboratory Coordinator



Steve Howard
Laboratory Manager

FUSRAP Laboratory
8945 Latty Ave.
Berkeley, MO 63134
(314) 260-3900

October 10, 2003

SAIC
500 NW Plaza, Ste. 1000
St. Ann, MO 63074

Case Narrative
File # 03ML716

Sample Receipt

This data package contains 3 water samples received from the Hazelwood Interim Storage Site on October 10th, 2003.

Analytical Methods

Settleable solids analysis was performed in accordance with procedure ML-020.

Data Qualifiers

Data flags appear in the Results Summary where samples reported results required statistical calculations. A "U" qualifier denotes that the activity reported is below the minimum detectable activity or that the isotope is not positively identified. An "N" qualifier denotes that the spike recovery is not within 80% to 120% for a Liquid or 70% to 130% for a solid. A "*" qualifier denotes poor duplicate results. A "J" qualifier denotes that the isotope was positively identified, however the reported values are estimated due to problems or unusual circumstances noted in this case narrative.

Problems or Unusual Occurrences

Sample HIS79201 was submitted and analyzed with a sample volume of 0.9L, which is less than the procedure specified 1L sample volume.

Data Review and Certification of Accuracy

I certify, to the best of my abilities, that this data report is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



Brad Wilson
Laboratory Coordinator

10/17/03

Steve Howard
Laboratory Manager

Case Narrative
LOT NUMBER: F3L110295

This report contains the analytical results for the three samples received under chain of custody by STL St. Louis on December 10, 2003. These samples are associated with your FUSRAP-NPDES project.

All applicable quality control procedures met method-specified acceptance criteria except as described below.

This report is incomplete without the case narrative. All chemical analysis results are based upon dry sample weight, unless noted otherwise.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Semivolatiles by SW846 8270C

There was insufficient sample volume to perform MS/MSD analysis. A LCS/LCSD were performed to demonstrate accuracy and replicate precision.

Affected Samples:

F3L110295 (1): HIS74527
F3L110295 (2): HIS74528
F3L110295 (3): HIS74529

METHODS SUMMARY

F3L110295

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 3520C
Total Organic Carbon	MCAWW 415.1	MCAWW 415.1
Total Organic Halogens	MCAWW 450.1	MCAWW 450.1
Volatile Organics by GC/MS	SW846 8260B	SW846 5030

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F3L110295

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
F6G1V	001	HIS74527	12/10/03	09:40
F6G21	002	HIS74528	12/10/03	09:50
F6G23	003	HIS74529	12/10/03	10:05

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, pain filter test, pH, osmotic pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

ATTACHMENT B

**QUARTERLY DISCHARGE MONITORING REPORT FOR THE
ST. LOUIS AIRPORT SITE**

**Fourth Quarter 2003 - Storm-water Discharge Monitoring Report
St. Louis Airport Site (SLAPS) St. Louis, MO**

FACILITY NAME	PERMIT NUMBER	COUNTY	OWNER	FACILITY CONTACT			
St. Louis Airport Site (SLAPS) ¹	No permit exists, currently working to the ARAR provided 10/02/98	St. Louis	St. Louis Airport Authority	S.R. Cotner, Program Manager, USACE			
OPERATOR OF FACILITY	TYPE OF FACILITY						
United States Army Corps of Engineers (USACE)	Standard Industrial Classification-9999, non-classifiable						
REQUIRED FREQUENCY OF MONITORING				THIS REPORT COVERS			
Flow-monthly, 24 hour estimate; Effluent Parameters- Chemical and radiological ² ; monthly during rainfall that results in a discharge; Radiological ³ ; per rainfall event that results in a discharge; Radon-semi-annually during rainfall that results in a discharge; Monitoring Report-quarterly				4th Quarter - October 1, 2003 - December 31, 2003			
SAMPLES COLLECTED BY: Baywest, Shaw and Pangea personnel							
ANALYSIS PERFORMED BY: ARDL (chemical analyses); St. Louis Sites Radioanalytical Laboratory (radiological analyses); General Engineering Laboratories (radon in water analyses)							
SAMPLE LOCATION	EVENT 4¹⁵	EVENT 5¹⁵	EVENT 1	EVENT 2	EVENT 3	EVENT 4	EVENT 5
Outfall 001a	09/26/03 - 09/27/03	09/30/03 - 10/01/03	10/09/03 - 10/10/03	10/13/03 - 10/15/03	10/17/03 - 10/18/03	11/01/03 - 11/02/03	11/05/03 - 11/06/03
Outfall 001b	16	16	16	16	16	16	16
Outfall 002	5	5	5	5	5	5	5
Outfall 003	11	11	11	11	11	11	11
SAMPLE LOCATION	EVENT 6	EVENT 7	EVENT 8	EVENT 9	EVENT 10	EVENT 11¹⁷	EVENT 12¹⁷
Outfall 001a	11/12/03	11/17/03 - 11/20/03	11/23/03	11/26/03	12/10/03	12/23/03	12/29/03 - 12/30/03
Outfall 001b	16	11/19/03 - 11/21/03	16	16	16	16	16
Outfall 002	5	5	5	5	5	5	5
Outfall 003	11	11	11	11	11	11	11
REPORT APPROVED BY OWNER on behalf of USACE Sharon Cotner					DATE 1-23-04		

NOTES: (NUMBERING SYSTEM HAS BEEN KEPT CONSISTENT ON EACH PAGE TO REDUCE CONFUSION)

¹ SLAPS is a CERCLA NPL site.

² Collect monthly grab samples for the following parameters: oil and grease, total petroleum hydrocarbons, pH, chemical oxygen demand, settleable solids, total recoverable arsenic, total recoverable lead, total recoverable chromium, total recoverable copper, total recoverable cadmium, polychlorinated biphenyls, total uranium, total radium, total thorium, gross alpha, gross beta, protactinium-231, and actinium-227.

³ Collect grab samples per rainfall event for the following parameters: total uranium, total radium, total thorium, gross alpha, gross beta, protactinium-231, and actinium-227.

⁴ An event is defined as a measurable increase in discharge rate from precipitation producing 0.1 inch or more of liquid in a 24 hour period, or (such as following treatment). An event may exceed duration of 24 hours, and two events experienced within 48 hours may be reported together.

⁵ As per MDNR letter from Matthew Sikes addressed to Sharon Cotner dated 02/19/02, sampling at outfall 002 has been reduced to once a year.

⁶ ND = No Discharge

⁷ Results are reported in required units.

⁸ DL= Detection Limit

⁹ Value reported is based on a volume weighted average of analyte activity concentrations for samples collected during the defined event. Corresponding radiological samples were collected on the same date as chemical samples, however, the radiological results are incorporated into the volume weighted average for the specified event.

¹⁰ As specified in the permit, radionuclides require monitoring only, and limits are not permit specified.

¹¹ Total nuclide values in ug/L units were calculated using the activity concentration values reported by the laboratory and values for specific activity listed in Table 8.4.1 of The Health Physics and Radiological Health Handbook, 1992 Edition

¹² It is assumed that Ra-228 and Th-228 are in secular equilibrium with Th-232, therefore, Th-232 results are used to estimate Ra-228 and Th-228 values.

¹³ As per MDNR letter from Matthew Sikes addressed to Sharon Cotner dated 02/19/02, sampling at outfall 003 has been discontinued.

¹⁴ Waiting on data results from the laboratory.

¹⁵ Event 4 and 5 were not included in 3rd Quarter NPDES Report.

¹⁶ Outfall 001b is only used for emergency overflow.

¹⁷ Event 11 and Event 12 will be included in the next NPDES Report.

¹⁸ NS = not sampled during this reporting period. Semi-annual reporting requirement only.

RAINFALL DATA

Date	(Inches)	Outfall	Outfall	Outfall	Outfall
2003	24-hour total	001a*	001b**	002***	3****
01-Oct	0.00	0.03			
02-Oct	0.00				
03-Oct	0.03				
04-Oct	0.00				
05-Oct	0.00				
06-Oct	0.00				
07-Oct	0.00				
08-Oct	0.00				
09-Oct	1.13	0.14			
10-Oct	0.00	0.05			
11-Oct	0.07				
12-Oct	Trace				
13-Oct	0.08	0.07			
14-Oct	0.25	0.14			
15-Oct	0.00	0.07			
16-Oct	0.80				
17-Oct	0.04	0.13			
18-Oct	0.00	0.10			
19-Oct	0.00				
20-Oct	0.00				
21-Oct	0.00				
22-Oct	0.00				
23-Oct	0.00				
24-Oct	0.00				
25-Oct	0.20				
26-Oct	0.00				
27-Oct	0.03				
28-Oct	0.18				
29-Oct	0.00				
30-Oct	0.00				
31-Oct	Trace				
Monthly Average		0.02			

Date	(Inches)	Outfall	Outfall	Outfall	Outfall
2003	24-hour total	001a*	001b**	002***	3****
01-Nov	0.63	0.02			
02-Nov	0.00	0.01			
03-Nov	0.00				
04-Nov	0.06				
05-Nov	0.43	0.02			
06-Nov	0.14	0.02			
07-Nov	0.00				
08-Nov	0.00				
09-Nov	0.00				
10-Nov	Trace				
11-Nov	Trace				
12-Nov	0.00	0.01			
13-Nov	0.00				
14-Nov	0.26				
15-Nov	0.04				
16-Nov	Trace				
17-Nov	1.35	0.70			
18-Nov	1.85	0.80			
19-Nov	0.00	0.43	0.24		
20-Nov	0.00	0.14	0.20		
21-Nov	0.00		0.08		
22-Nov	0.00				
23-Nov	0.59	0.02			
24-Nov	Trace				
25-Nov	0.00				
26-Nov	Trace	0.07			
27-Nov	0.00				
28-Nov	Trace				
29-Nov	0.00				
30-Nov	0.00				
Monthly Average		0.07	0.02		

Date	(Inches)	Outfall	Outfall	Outfall	Outfall
2003	24-hour total	001a*	001b**	002***	3****
01-Dec	0.00				
02-Dec	0.00				
03-Dec	0.10				
04-Dec	0.08				
05-Dec	0.10				
06-Dec	0.00				
07-Dec	0.00				
08-Dec	Trace				
09-Dec	0.30				
10-Dec	0.37	1.40			
11-Dec	0.00				
12-Dec	0.00				
13-Dec	0.13				
14-Dec	Trace				
15-Dec	Trace				
16-Dec	0.01				
17-Dec	Trace				
18-Dec	0.03				
19-Dec	Trace				
20-Dec	0.00				
21-Dec	0.00				
22-Dec	0.77				
23-Dec	0.23	0.07			
24-Dec	0.00				
25-Dec	0.00				
26-Dec	0.00				
27-Dec	0.00				
28-Dec	0.18				
29-Dec	0.08	0.03			
30-Dec	0.00				
31-Dec	0.00				
Monthly Average		0.05			

Notes:

Flow measurements for the three outfalls are reported in million gallons per day (MGD) and reported to two significant digits. All blank spaces represent zero flow.

* A flow meter and automatic sampler are currently installed at Outfall 001a. Outfall 001b is an emergency spillway only.

** Outfall 001b is only used for an emergency overflow.

*** Outfall 002 is sampled annually per MDNR letter dated 2/19/02, as a result flow is not measured until a sample is collected.

**** As per MDNR letter from Matthew Sikes addressed to Sharon Cotner dated 02/19/02, sampling at Outfall 003 has been discontinued.

**Fourth Quarter 2003 - Storm-water Discharge Monitoring Report
St. Louis Airport Station (APS), St. Louis, MO**

MONITORING PARAMETER	FINAL EFFLUENT LIMITATIONS		UNITS ⁷	ANALYTICAL RESULTS								SAMPLE TYPE	REMARKS and COMMENTS
	Daily Maximum	Monthly Average		Outfall 001a									
				Chemical Parameters									
				August	September	October	November	December					
Flow	Monitor only	Monitor only	MGD	0.08	0.08	0.1	0.7	17			24-hr estimate		
Oil and Grease	15	10	mg/L	ND	ND	ND	ND	17			Grab		
Total Petroleum Hydrocarbons	10	10	mg/L	ND	ND	ND	ND	17			Grab		
pH-Units	6.0-9.0	NA	SU	6.9	7.5	7.9	7.7	17			Grab		
Chemical Oxygen Demand	120	90	mg/L	37	72	204	ND	17			Grab		
Settleable Solids	1.5	1	mL/L/hr	ND	0.1	ND	1.4	17			Grab	DL ⁸ = 0.1 mL/L/hr	
Arsenic, Total Recoverable	100	100	µg/L	ND	0.01	0.03	0.01	17			Grab		
Lead, Total Recoverable	190	190	µg/L	ND	0.004	0.03	0.02	17			Grab		
Chromium, Total Recoverable	280	280	µg/L	ND	ND	0.02	0.01	17			Grab		
Copper, Total Recoverable	84	84	µg/L	0.02	0.01	0.05	0.01	17			Grab		
Cadmium, Total Recoverable	94	94	µg/L	ND	ND	ND	ND	17			Grab		
Polychlorinated Biphenyls	No release	No release	µg/L	ND	ND	1.3	ND	17			Grab	DL ⁸ = 1 µg/L	
				Radiological Parameters ^{9,12}									
				Event 4 ¹⁵	Event 5 ¹⁵	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	SAMPLE TYPE	REMARKS and COMMENTS
Uranium, Total ^{10,11}	Monitor only	Monitor only	µg/L	3.12E+02	1.E+02	4.E+02	8.E+01	2.E+02	3.E+02	2.E+02	2.E+02	Grab	Calculated estimates
Radium, Total ^{10,11}	Monitor only	Monitor only	µg/L	4.E+06	2.E+06	9.E+06	1.E+06	2.E+06	1.E+06	2.E+06	2.E+06	Grab	Calculated estimates
Thorium, Total ^{10,11}	Monitor only	Monitor only	µg/L	6.E+00	6.E+00	4.E+00	2.E+00	8.E+00	4.E+00	3.E+00	3.E+00	Grab	Calculated estimates
Gross Alpha ¹⁰	Monitor only	Monitor only	pCi/L	1.E+02	9.E+01	4.E+02	6.E+01	1.E+02	2.E+02	1.E+02	1.E+02	Grab	
Gross Beta ¹⁰	Monitor only	Monitor only	pCi/L	9.E+01	4.E+01	2.E+02	2.E+01	6.E+01	9.E+01	7.E+01	5.E+01	Grab	
Protactinium-231 ¹⁰	Monitor only	Monitor only	pCi/L	6.E-01	4.E-02	3.E+00	3.E-02	5.E-01	1.E-01	8.E-02	1.E-01	Grab	
Actinium-227 ¹⁰	Monitor only	Monitor only	pCi/L	6.E-01	4.E-02	3.E+00	3.E-02	5.E-01	1.E-01	8.E-02	1.E-01	Grab	
Radon (semi-annual monitoring)	Monitor only	Monitor only	pCi/L	NS ¹⁸	NS ¹⁸	NS ¹⁸	NS ¹⁸	NS ¹⁸	NS ¹⁸	NS ¹⁸	NS ¹⁸		
				Event 7	Event 8	Event 9	Event 10	Event 11	Event 12				
Uranium, Total ^{10,11}	Monitor only	Monitor only	µg/L	3.E+02	4.E+02	9.E+01	6.6E+01	17	17			Grab	Calculated estimates
Radium, Total ^{10,11}	Monitor only	Monitor only	µg/L	2.E+05	1.E+05	3.E+06	6.E+06	17	17			Grab	Calculated estimates
Thorium, Total ^{10,11}	Monitor only	Monitor only	µg/L	1.E+01	6.E+00	6.E+00	7.E+00	17	17			Grab	Calculated estimates
Gross Alpha ¹⁰	Monitor only	Monitor only	pCi/L	5.E+02	4.E+02	5.E+01	9.2E+01	17	17			Grab	
Gross Beta ¹⁰	Monitor only	Monitor only	pCi/L	2.E+02	2.E+02	4.E+01	6.E+01	17	17			Grab	
Protactinium-231 ¹⁰	Monitor only	Monitor only	pCi/L	7.E+00	4.E+00	9.E-02	2.E+00	17	17			Grab	
Actinium-227 ¹⁰	Monitor only	Monitor only	pCi/L	7.E+00	4.E+00	9.E-02	2.E+00	17	17			Grab	

NOTES: (NUMBERING SYSTEM HAS BEEN KEPT CONSISTENT ON EACH PAGE TO REDUCE CONFUSION)

⁵ As per MDNR letter from Matthew Sikes addressed to Sharon Cotner dated 02/19/02, sampling at outfall 002 has been reduced to once a year.

⁶ ND = No Discharge

⁷ Results are reported in required units.

⁸ DL = Detection Limit

⁹ Value reported is based on a volume weighted average of analyte activity concentrations for samples collected during the defined event. Corresponding radiological samples were collected on the same date as chemical samples, however, the radiological results are incorporated into the volume weighted average for the specified event.

¹⁰ As specified in the permit, radionuclides require monitoring only, and limits are not permit specified.

¹¹ Total nuclide values in µg/L units were calculated using the activity concentration values reported by the laboratory and values for specific activity listed in Table 8.4.1 of The Health Physics and Radiological Health Handbook, 1992 Edition

¹² It is assumed that Ra-228 and Th-228 are in secular equilibrium with Th-232, therefore, Th-232 results are used to estimate Ra-228 and Th-228 values.

¹³ As per MDNR letter from Matthew Sikes addressed to Sharon Cotner dated 02/19/02, sampling at outfall 003 has been discontinued.

¹⁴ Waiting on data results from the laboratory.

¹⁵ Event 4 and 5 were not included in 3rd Quarter NPDES Report.

¹⁶ Outfall 001b is only used for emergency overflow.

¹⁷ Event 11 and Event 12 will be included in the next NPDES Report.

¹⁸ NS = not sampled during this reporting period. Semi-annual reporting requirement only.

**Fourth Quarter 2003 - Storm-water Discharge Monitoring Report
St. Louis Airport Site (SLAPS), St. Louis, MO**

MONITORING PARAMETER	FINAL EFFLUENT LIMITATIONS		UNITS ⁷	ANALYTICAL RESULTS								SAMPLE TYPE	REMARKS and COMMENTS
	Daily Maximum	Monthly Average		Outfall 001b									
				Chemical Parameters									
				August	September	October	November	December					
Flow	Monitor only	Monitor only	MGD	16	16	16	0.2	16	24-hr estimate				
Oil and Grease	15	10	mg/L	16	16	16	ND	16	Grab				
Total Petroleum Hydrocarbons	10	10	mg/L	16	16	16	ND	16	Grab				
pH-Units	6.0-9.0	NA	SU	16	16	16	7.5	16	Grab				
Chemical Oxygen Demand	120	90	mg/L	16	16	16	23.7	16	Grab				
Settleable Solids	1.5	1	mL/L/hr	16	16	16	ND	16	Grab			DL ⁸ = 0.1 mL/L/hr	
Arsenic, Total Recoverable	100	100	µg/L	16	16	16	ND	16	Grab				
Lead, Total Recoverable	190	190	µg/L	16	16	16	ND	16	Grab				
Chromium, Total Recoverable	280	280	µg/L	16	16	16	ND	16	Grab				
Copper, Total Recoverable	84	84	µg/L	16	16	16	ND	16	Grab				
Cadmium, Total Recoverable	94	94	µg/L	16	16	16	ND	16	Grab				
Polychlorinated Biphenyls	No release	No release	µg/L	16	16	16	ND	16	Grab			DL ⁸ = 1 µg/L	
Radiological Parameters ^{9,12}													
				Event 4 ¹⁵	Event 5 ¹⁵	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	SAMPLE TYPE	REMARKS and COMMENTS
Uranium, Total ^{10,11}	Monitor only	Monitor only	µg/L	16	16	16	16	16	16	16	16		
Radium, Total ^{10,11}	Monitor only	Monitor only	µg/L	16	16	16	16	16	16	16	16	Grab	Calculated estimates
Thorium, Total ^{10,11}	Monitor only	Monitor only	µg/L	16	16	16	16	16	16	16	16	Grab	Calculated estimates
Gross Alpha ¹⁰	Monitor only	Monitor only	pCi/L	16	16	16	16	16	16	16	16	Grab	
Gross Beta ¹⁰	Monitor only	Monitor only	pCi/L	16	16	16	16	16	16	16	16	Grab	
Protactinium-231 ¹⁰	Monitor only	Monitor only	pCi/L	16	16	16	16	16	16	16	16	Grab	
Actinium-227 ¹⁰	Monitor only	Monitor only	pCi/L	16	16	16	16	16	16	16	16	Grab	
Radon (semi-annual monitoring)	Monitor only	Monitor only	pCi/L	NS ¹⁶	NS ¹⁶	NS ¹⁶	NS ¹⁶	NS ¹⁶	NS ¹⁶	NS ¹⁶	NS ¹⁶		
				Event 7	Event 8	Event 9	Event 10	Event 11	Event 12				
Uranium, Total ^{10,11}	Monitor only	Monitor only	µg/L	2.E+02	16	16	16	16	16			Grab	Calculated estimates
Radium, Total ^{10,11}	Monitor only	Monitor only	µg/L	1.E+06	16	16	16	16	16			Grab	Calculated estimates
Thorium, Total ^{10,11}	Monitor only	Monitor only	µg/L	4.E+00	16	16	16	16	16			Grab	Calculated estimates
Gross Alpha ¹⁰	Monitor only	Monitor only	pCi/L	5.E+01	16	16	16	16	16			Grab	
Gross Beta ¹⁰	Monitor only	Monitor only	pCi/L	3.E+01	16	16	16	16	16			Grab	
Protactinium-231 ¹⁰	Monitor only	Monitor only	pCi/L	1.E+01	16	16	16	16	16			Grab	
Actinium-227 ¹⁰	Monitor only	Monitor only	pCi/L	1.E+01	16	16	16	16	16			Grab	

NOTES: (NUMBERING SYSTEM HAS BEEN KEPT CONSISTENT ON EACH PAGE TO REDUCE CONFUSION)

⁵ As per MDNR letter from Matthew Sikes addressed to Sharon Colner dated 02/19/02, sampling at outfall 002 has been reduced to once a year.

⁶ ND = No Discharge

⁷ Results are reported in required units.

⁸ DL = Detection Limit

⁹ Value reported is based on a volume weighted average of analyte activity concentrations for samples collected during the defined event. Corresponding radiological samples were collected on the same date as chemical samples, however, the radiological results are incorporated into the volume weighted average for the specified event.

¹⁰ As specified in the permit, radionuclides require monitoring only, and limits are not permit specified.

¹¹ Total nuclide values in µg/L units were calculated using the activity concentration values reported by the laboratory and values for specific activity listed in Table 8.4.1 of The Health Physics and Radiological Health Handbook, 1992 Edition

¹² It is assumed that Ra-228 and Th-228 are in secular equilibrium with Th-232, therefore, Th-232 results are used to estimate Ra-228 and Th-228 values.

¹³ As per MDNR letter from Matthew Sikes addressed to Sharon Colner dated 02/19/02, sampling at outfall 003 has been discontinued.

¹⁴ Waiting on data results from the laboratory.

¹⁵ Event 4 and 5 were not included in 3rd Quarter NPDES Report.

¹⁶ Outfall 001b is only used for emergency overflow.

¹⁷ Event 11 and Event 12 will be included in the next NPDES Report.

¹⁸ NS = not sampled during this reporting period. Semi-annual reporting requirement only.

**Fourth Quarter 2003 - Storm-water Discharge Monitoring Report
St. Louis Airport (SLAPS), St. Louis, MO**

MONITORING PARAMETER	FINAL EFFLUENT LIMITATIONS		UNITS ⁷	ANALYTICAL RESULTS							SAMPLE TYPE	REMARKS and COMMENTS	
	Daily Maximum	Monthly Average		Outfall 002									
				Chemical Parameters									
				August	September	October	November	December					
Flow	Monitor only	Monitor only	MGD	5	5	5	5	5	24-hr estimate				
Oil and Grease	15	10	mg/L	5	5	5	5	5	Grab				
Total Petroleum Hydrocarbons	10	10	mg/L	5	5	5	5	5	Grab				
pH-Units	6.0-9.0	NA	SU	5	5	5	5	5	Grab				
Chemical Oxygen Demand	120	90	mg/L	5	5	5	5	5	Grab				
Settleable Solids	1.5	1	ml/L/hr	5	5	5	5	5	Grab	DL ⁸ = 0.1 ml/L/hr			
Arsenic, Total Recoverable	100	100	µg/L	5	5	5	5	5	Grab				
Lead, Total Recoverable	190	190	µg/L	5	5	5	5	5	Grab				
Chromium, Total Recoverable	280	280	µg/L	5	5	5	5	5	Grab				
Copper, Total Recoverable	84	84	µg/L	5	5	5	5	5	Grab				
Cadmium, Total Recoverable	94	94	µg/L	5	5	5	5	5	Grab				
Polychlorinated Biphenyls	No release	No release	µg/L	5	5	5	5	5	Grab	DL ⁸ = 1 µg/L			
				Radiological Parameters ^{9,12}							SAMPLE TYPE	REMARKS and COMMENTS	
				Event 4 ¹⁵	Event 5 ¹⁵	Event 1	Event 2	Event 3	Event 4	Event 5			Event 6
Uranium, Total ^{10,11}	Monitor only	Monitor only	µg/L	5	5	5	5	5	5	5	5	Grab	Calculated estimates
Radium, Total ^{10,11}	Monitor only	Monitor only	µg/L	5	5	5	5	5	5	5	5	Grab	Calculated estimates
Thorium, Total ^{10,11}	Monitor only	Monitor only	µg/L	5	5	5	5	5	5	5	5	Grab	Calculated estimates
Gross Alpha ¹⁰	Monitor only	Monitor only	pCi/L	5	5	5	5	5	5	5	5	Grab	
Gross Beta ¹⁰	Monitor only	Monitor only	pCi/L	5	5	5	5	5	5	5	5	Grab	
Protactinium-231 ¹⁰	Monitor only	Monitor only	pCi/L	5	5	5	5	5	5	5	5	Grab	
Actinium-227 ¹⁰	Monitor only	Monitor only	pCi/L	5	5	5	5	5	5	5	5	Grab	
Radon (semi-annual monitoring)	Monitor only	Monitor only	pCi/L	NS ¹⁴	NS ¹⁴	NS ¹⁴	NS ¹⁴	NS ¹⁴	NS ¹⁴	NS ¹⁴	NS ¹⁴		
				Event 7	Event 8	Event 9	Event 10	Event 11	Event 12				
Uranium, Total ^{10,11}	Monitor only	Monitor only	µg/L	5	5	5	5	5	5			Grab	Calculated estimates
Radium, Total ^{10,11}	Monitor only	Monitor only	µg/L	5	5	5	5	5	5			Grab	Calculated estimates
Thorium, Total ^{10,11}	Monitor only	Monitor only	µg/L	5	5	5	5	5	5			Grab	Calculated estimates
Gross Alpha ¹⁰	Monitor only	Monitor only	pCi/L	5	5	5	5	5	5			Grab	
Gross Beta ¹⁰	Monitor only	Monitor only	pCi/L	5	5	5	5	5	5			Grab	
Protactinium-231 ¹⁰	Monitor only	Monitor only	pCi/L	5	5	5	5	5	5			Grab	
Actinium-227 ¹⁰	Monitor only	Monitor only	pCi/L	5	5	5	5	5	5			Grab	

NOTES: (NUMBERING SYSTEM HAS BEEN KEPT CONSISTENT ON EACH PAGE TO REDUCE CONFUSION)

⁵ As per MDNR letter from Matthew Sikes addressed to Sharon Cotner dated 02/19/02, sampling at outfall 002 has been reduced to once a year.

⁶ ND = No Discharge

⁷ Results are reported in required units.

⁸ DL = Detection Limit

⁹ Value reported is based on a volume weighted average of analyte activity concentrations for samples collected during the defined event. Corresponding radiological samples were collected on the same date as chemical samples, however, the radiological results are incorporated into the volume weighted average for the specified event.

¹⁰ As specified in the permit, radionuclides require monitoring only, and limits are not permit specified.

¹¹ Total nuclide values in µg/L units were calculated using the activity concentration values reported by the laboratory and values for specific activity listed in Table 8.4.1 of The Health Physics and Radiological Health Handbook, 1992 Edition

¹² It is assumed that Rn-228 and Th-228 are in secular equilibrium with Th-232, therefore, Th-232 results are used to estimate Rn-228 and Th-228 values.

¹³ As per MDNR letter from Matthew Sikes addressed to Sharon Cotner dated 02/19/02, sampling at outfall 003 has been discontinued.

¹⁴ Waiting on data results from the laboratory.

¹⁵ Event 4 and 5 were not included in 3rd Quarter NPDES Report.

¹⁶ Outfall 001b is only used for emergency overflow.

¹⁷ Event 11 and Event 12 will be included in the next NPDES Report.

¹⁸ NS = not sampled during this reporting period. Semi-annual reporting requirement only.

**Fourth Quarter 2003 - Storm-water Discharge Monitoring
St. Louis Airport Site (SLAPS), St. Louis, MO**

MONITORING PARAMETER	FINAL EFFLUENT LIMITATIONS		UNITS ⁷	ANALYTICAL RESULTS								SAMPLE TYPE	REMARKS and COMMENTS
	Daily Maximum	Monthly Average		Outfall 003									
				Chemical Parameters									
				August	September	October	November	December					
Flow	Monitor only	Monitor only	MGD	"	"	"	"	"	"	"	24-hr estimate		
Oil and Grease	15	10	mg/L	"	"	"	"	"	"	"	Grab		
Total Petroleum Hydrocarbons	10	10	mg/L	"	"	"	"	"	"	"	Grab		
pH-Units	6.0-9.0	NA	SU	"	"	"	"	"	"	"	Grab		
Chemical Oxygen Demand	120	90	mg/L	"	"	"	"	"	"	"	Grab		
Settleable Solids	1.5	1	ml/L/hr	"	"	"	"	"	"	"	Grab	DL ⁸ = 0.1 ml/L/hr	
Arsenic, Total Recoverable	100	100	µg/L	"	"	"	"	"	"	"	Grab		
Lead, Total Recoverable	190	190	µg/L	"	"	"	"	"	"	"	Grab		
Chromium, Total Recoverable	280	280	µg/L	"	"	"	"	"	"	"	Grab		
Copper, Total Recoverable	84	84	µg/L	"	"	"	"	"	"	"	Grab		
Cadmium, Total Recoverable	94	94	µg/L	"	"	"	"	"	"	"	Grab		
Polychlorinated Biphenyls	No release	No release	µg/L	"	"	"	"	"	"	"	Grab	DL ⁸ = 1 µg/L	
Radiological Parameters ^{9,12}													
				Event 4 ¹⁵	Event 5 ¹⁵	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	SAMPLE TYPE	REMARKS and COMMENTS
Uranium, Total ^{10,11}	Monitor only	Monitor only	µg/L	"	"	"	"	"	"	"	"	Grab	Calculated estimates
Radium, Total ^{10,11}	Monitor only	Monitor only	µg/L	"	"	"	"	"	"	"	"	Grab	Calculated estimates
Thorium, Total ^{10,11}	Monitor only	Monitor only	µg/L	"	"	"	"	"	"	"	"	Grab	Calculated estimates
Gross Alpha ¹⁰	Monitor only	Monitor only	pCi/L	"	"	"	"	"	"	"	"	Grab	
Gross Beta ¹⁰	Monitor only	Monitor only	pCi/L	"	"	"	"	"	"	"	"	Grab	
Protactinium-231 ¹⁰	Monitor only	Monitor only	pCi/L	"	"	"	"	"	"	"	"	Grab	
Actinium-227 ¹⁰	Monitor only	Monitor only	pCi/L	"	"	"	"	"	"	"	"	Grab	
Radon (semi-annual monitoring)	Monitor only	Monitor only	pCi/L	NS ¹⁶	NS ¹⁶	NS ¹⁶	NS ¹⁶	NS ¹⁶	NS ¹⁶	NS ¹⁶	NS ¹⁶		
				Event 7	Event 8	Event 9	Event 10	Event 11	Event 12				
Uranium, Total ^{10,11}	Monitor only	Monitor only	µg/L	"	"	"	"	"	"			Grab	Calculated estimates
Radium, Total ^{10,11}	Monitor only	Monitor only	µg/L	"	"	"	"	"	"			Grab	Calculated estimates
Thorium, Total ^{10,11}	Monitor only	Monitor only	µg/L	"	"	"	"	"	"			Grab	Calculated estimates
Gross Alpha ¹⁰	Monitor only	Monitor only	pCi/L	"	"	"	"	"	"			Grab	
Gross Beta ¹⁰	Monitor only	Monitor only	pCi/L	"	"	"	"	"	"			Grab	
Protactinium-231 ¹⁰	Monitor only	Monitor only	pCi/L	"	"	"	"	"	"			Grab	
Actinium-227 ¹⁰	Monitor only	Monitor only	pCi/L	"	"	"	"	"	"			Grab	

NOTES: (NUMBERING SYSTEM HAS BEEN KEPT CONSISTENT ON EACH PAGE TO REDUCE CONFUSION)

⁵ As per MDNR letter from Matthew Sikes addressed to Sharon Cotner dated 02/19/02, sampling at outfall 002 has been reduced to once a year.

⁶ ND = No Discharge

⁷ Results are reported in required units.

⁸ DL= Detection Limit

⁹ Value reported is based on a volume weighted average of analyte activity concentrations for samples collected during the defined event. Corresponding radiological samples were collected on the same date as chemical samples, however, the radiological results are incorporated into the volume weighted average for the specified event.

¹⁰ As specified in the permit, radionuclides require monitoring only, and limits are not permit specified.

¹¹ Total nuclide values in ug/L units were calculated using the activity concentration values reported by the laboratory and values for specific activity listed in Table 8.4.1 of The Health Physics and Radiological Health Handbook, 1992 Edition

¹² It is assumed that Ra-228 and Th-228 are in secular equilibrium with Th-232, therefore, Th-232 results are used to estimate Ra-228 and Th-228 values.

¹³ As per MDNR letter from Matthew Sikes addressed to Sharon Cotner dated 02/19/02, sampling at outfall 003 has been discontinued.

¹⁴ Waiting on data results from the laboratory.

¹⁵ Event 4 and 5 were not included in 3rd Quarter NPDES Report.

¹⁶ Outfall 003b is only used for emergency overflow.

¹⁷ Event 11 and Event 12 will be included in the next NPDES Report.

¹⁸ NS = not sampled during this reporting period. Semi-annual reporting requirement only.

ATTACHMENT C

**LETTER OF NOTICE FOR THE
ST. LOUIS AIRPORT SITE**



DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT, CORPS OF ENGINEERS
8945 LATTY AVENUE
BERKELEY, MISSOURI 63134

REPLY TO
ATTENTION OF:

January 22, 2004

Formerly Utilized Sites Remedial Action Project

SUBJECT: Applicable or Relevant and Appropriate Requirements (ARARs) Discharges to Waters of the State at St. Louis Airport Site (SLAPS) Noncompliance for Outfall 001a for Samples Collected in October 2003

Mr. Thomas Siegel, Permits and Engineering Chief
Missouri Department of Natural Resources
Water Pollution Control Program
7545 S. Lindbergh Blvd., Suite 210
St. Louis, Missouri 63125

Dear Mr. Siegel,

The purpose of this letter is to inform the Water Pollution Control Program (WPCP) of exceedences which occurred at Outfall 001A at the St. Louis Airport Site (SLAPS) of the St. Louis Formerly Utilized Sites Remedial Action Program (FUSRAP). There were two exceedence occurrences, one in October and another in December.

In the process of preparing the fourth quarter NPDES report, the October exceedences were discovered. The following day the December data arrived from the lab, when the December exceedence was noted. The lab was contacted to insure the validity of the results and subsequently the results were verbally reported to WPCP.

The October 9, 2003 compliance samples were collected at Outfall 001a as a result of a rain event of 1.13 inches. Sample SLA73227 data revealed two exceedences. The reported value for COD was 204 mg/L while the daily maximum limit is 120 mg/L; the Aroclor 1254 value for this sample was reported as 1.3 ug/L, while the permit states "no release" criteria for PCBs. All other sample results were within the limits of the permit. These results were overlooked initially due to two personnel changes at two contractors. The informal data communication between these two contacts ended with the changes. The situation has been corrected by a written document stating how preliminary NPDES data will be immediately sent to the construction contractor for comparison to permit standards. The new system worked as indicated with the receipt of the December data by the construction contractor.

Additionally, in response to these exceedences, all November data was again reviewed and found to be valid. None of the monitoring parameters were above the permit limits and the PCBs were non-detect. The December 10, 2003 non-validated chemical data package revealed another elevated Aroclor 1254 result at 3.8 ug/L at outfall 001A.

The corrective action involved reviewing all soils data around the time of both discharge events in question in order to evaluate conditions onsite. At this time, no correlation has been found between the analytical results and the removal action. No unusual materials had been discovered and radioactive levels were not out of the ordinary. The inconsistency of the pattern adds to the difficulty of identifying causality. The Corps will continue to monitor this situation and to seek correlation with removal actions to determine if there is a potential source for the inconsistent changes in PCB levels.

Please contact Mr. Ron Frerker at (314) 260-3936 or Dr. Greg Hempen at (314) 260-3939, if you have any questions.

Sincerely,



Sharon Cotner
FUSRAP Program Manager

CF: Mr. Eric Gilstrap, Missouri Department of Natural Resources



DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT, CORPS OF ENGINEERS
8945 LATTY AVENUE
BERKELEY, MISSOURI 63134

REPLY TO
ATTENTION OF:

January 23, 2003

Formerly Utilized Sites Remedial Action Program

Subject: Quarterly Metropolitan Sewer District (MSD) Self-Monitoring Report for October Through December 2003, St. Louis Site

Mr. Ronald Biehl
St. Louis Metropolitan Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, Missouri 63147-2913

Dear Mr. Biehl:

The U.S. Army Corps of Engineers (USACE) is submitting the October through December 2003 quarterly self-monitoring report for the St. Louis Site. During this period, three (3) batches of wastewater from the St. Louis Airport Site (SLAPS) were discharged to the Metropolitan Sewer District (MSD). There were no discharges during this period from the St. Louis Downtown Site (SLDS) to MSD.

In this quarter, 340,406 gallons of wastewater were discharged from SLAPS with a total activity of $4.0E-06$ curies for thorium, $5.0E-06$ curies for uranium (natural), and $2.5E-06$ curies for radium. The eighth batch in the series of releases was the first for this quarter and consisted of 70,900 gallons. The ninth batch consisted of 138,988 gallons. The tenth batch consisted of 130,518 gallons. The three batches were below the MSD limit for barium and lead. The selenium value for the three batches was below the 0.20 mg/L MSD limit. The BOD values and the COD values for the three batches were above the limits, meaning that surcharges will apply. Data for each discharge is presented on the attached page for your review.

Should you have any comments or questions regarding this letter, please feel free to contact either Dr. Greg Hempen at (314) 260-3939 or Mr. Ron Frerker at (314) 260-3936.

Sincerely,

Sharon Cotner
FUSRAP Program Manager

Enclosure

Self Monitoring Report for 4th Quarter

Parameter	Batch Number	Date of Discharge	Batch Results	Amount Discharged (Gallons)	Total Activity per Discharge (Ci)	MSD Limits	Sum of the Ratios
Gross Alpha (raw water)	SLAPS-008	10/9/2003	1.92 pCi/L	70,900	5.2E-07	3,000 pCi/L	0.01
Gross Beta			9.18 pCi/L		2.5E-06	N/A pCi/L	
TH-228			0.62 pCi/L		2.2E-07	2,000 pCi/L	
TH-230			3.46 pCi/L		9.3E-07	1,000 pCi/L	
Uranium (Nat)			0.47 pCi/L		1.3E-07	3,000 pCi/L	
RA-226			1.11 pCi/L		3.0E-07	10 pCi/L	
RA-228m			0.82 pCi/L		2.2E-07	30 pCi/L	
Barium			<0.050 mg/L			10 mg/L	
Lead			<0.050 mg/L			0.40 mg/L	
Selenium			0.181 mg/L			0.20 mg/L	
BODm			642.00 mg/L				
CODm			1350.00 mg/L				
Gross Alpha (TSS filter pad)m							
Total Suspended Solids			80.42 mg/L			30 mg/L	
Gross Alpha (raw water)	SLAPS-009	10/22/2003	2.31 pCi/L	138,988	1.2E-06	3,000 pCi/L	0.01
Gross Beta			6.25 pCi/L		3.3E-06	N/A pCi/L	
TH-228			1.28 pCi/L		6.7E-07	2,000 pCi/L	
TH-230			1.18 pCi/L		6.2E-07	1,000 pCi/L	
Uranium (Nat)			4.65 pCi/L		2.4E-06	3,000 pCi/L	
RA-226			0.57 pCi/L		3.0E-07	10 pCi/L	
RA-228m			1.28 pCi/L		6.7E-07	30 pCi/L	
Barium			0.007 mg/L			10 mg/L	
Lead			0.022 mg/L			0.40 mg/L	
Selenium			0.179 mg/L			0.20 mg/L	
BODm			6000.00 mg/L				
CODm			12000.00 mg/L				
Gross Alpha (TSS filter pad)m							
Total Suspended Solids			223.33 mg/L			30 mg/L	
Gross Alpha (raw water)	SLAPS-010	10/23/03 - 10/24/03	2.31 pCi/L	130,518	1.1E-06	3,000 pCi/L	0.01
Gross Beta			6.25 pCi/L		3.1E-06	N/A pCi/L	
TH-228			0.67 pCi/L		3.3E-07	2,000 pCi/L	
TH-230			2.36 pCi/L		1.2E-06	1,000 pCi/L	
Uranium (Nat)			4.65 pCi/L		2.3E-06	3,000 pCi/L	
RA-226			1.31 pCi/L		6.5E-07	10 pCi/L	
RA-228m			0.67 pCi/L		3.3E-07	30 pCi/L	
Barium			0.014 mg/L			10 mg/L	
Lead			0.022 mg/L			0.40 mg/L	
Selenium			0.17 mg/L			0.20 mg/L	
BODm			7500.00 mg/L				
CODm			15000.00 mg/L				
Gross Alpha (TSS filter pad)m							
Total Suspended Solids			129.69 mg/L			30 mg/L	

NOTES:

1. Non detect sample results are converted to half the detection limit.
2. Ra-228 assumed to be in equilibrium with Th-228
3. MSD surcharges apply for BOD concentrations greater than 300 mg/l and COD concentrations greater than 600 mg/l.
4. The low values of the gross alpha of the raw water, taken together with the associated error bar, establish that the rad is below discharge limits for all parameters and that it is soluble and/or readily dispersible.

NA - Not applicable since BOD and COD only has to be run on treated water.

NR - Waiting for data from the lab

Self Monitoring Report for 4th Quarter

Parameter	Batch Number	Date of Discharge	Batch Results	Amount Discharged (Gallons)	Total Activity per Discharge (Ci)	MSD Limits	Sum of the Ratios
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Total Activity Discharged in 4th Quarter (Ci)

TH-228	1.2E-06
TH-230	2.7E-06
Uranium (Nat)	4.9E-06
RA-226	1.2E-06
RA-228m	1.2E-06

Total Volume Discharged in 4th Quarter (gal)

Gallons	340,406
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Total Activity Discharged through 12/31/2003 (Ci)

TH-228	7.5E-05
TH-230	1.5E-05
Uranium (Nat)	4.6E-04
RA-226	8.5E-06
RA-228m	7.5E-06

Total Volume Discharged through 12/31/2003 (gal)

Gallons	2,046,906
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FUSRAP Document Management System

Year ID

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Further Info?

☐

Operating Unit

St. Louis Sites

Site

Area

MARKS Number

FN:1110-1-8100g

Primary Document Type

Site Management

Secondary Document Type

Interagency Agreements

Subject or Title

Transmittal of Fourth Quarter (October 1 - December 31, 2003) Calendar Year 2003 Federal Facility Agreement (FFA) Progress Report for the FUSRAP St. Louis Sites.

Author/Originator

Sharon Cotner

Company

FUSRAP

Date

1/23/2004

Recipient(s)

Dan Wall

Company (-ies)

USEPA

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