Sewer Acct.#: **1024353000**

Company: **WASHINGTON UNIVERSITY MEDICAL SCHOOL**

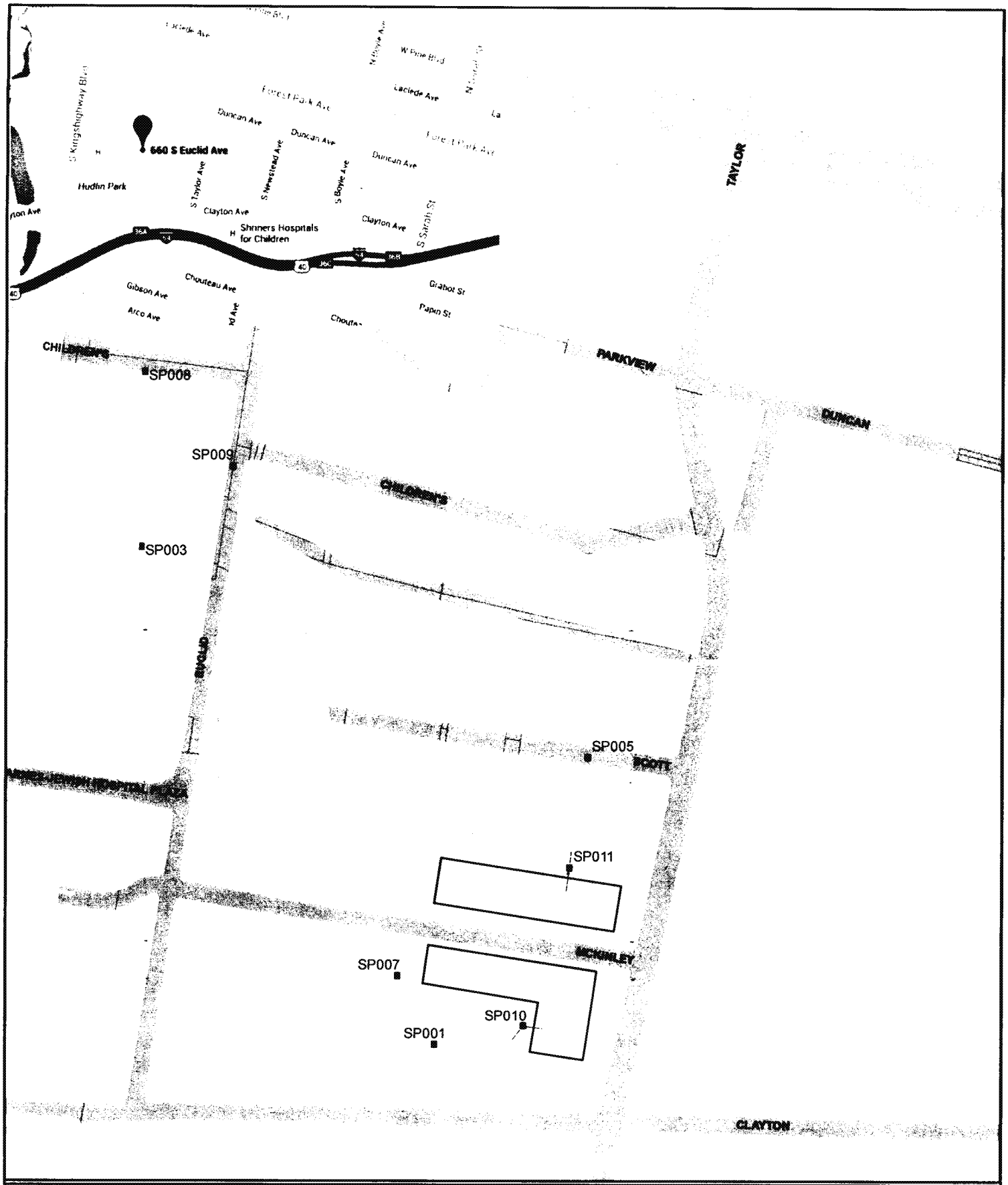
Address: **660 S. Euclid Ave.**

City: **St. Louis**

State and Zip: **MO 63110**

Industry ID	File Code	File Description
84230	30	INDUSTRY

MSD-DEC INDUSTRY SAMPLING MAP



Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

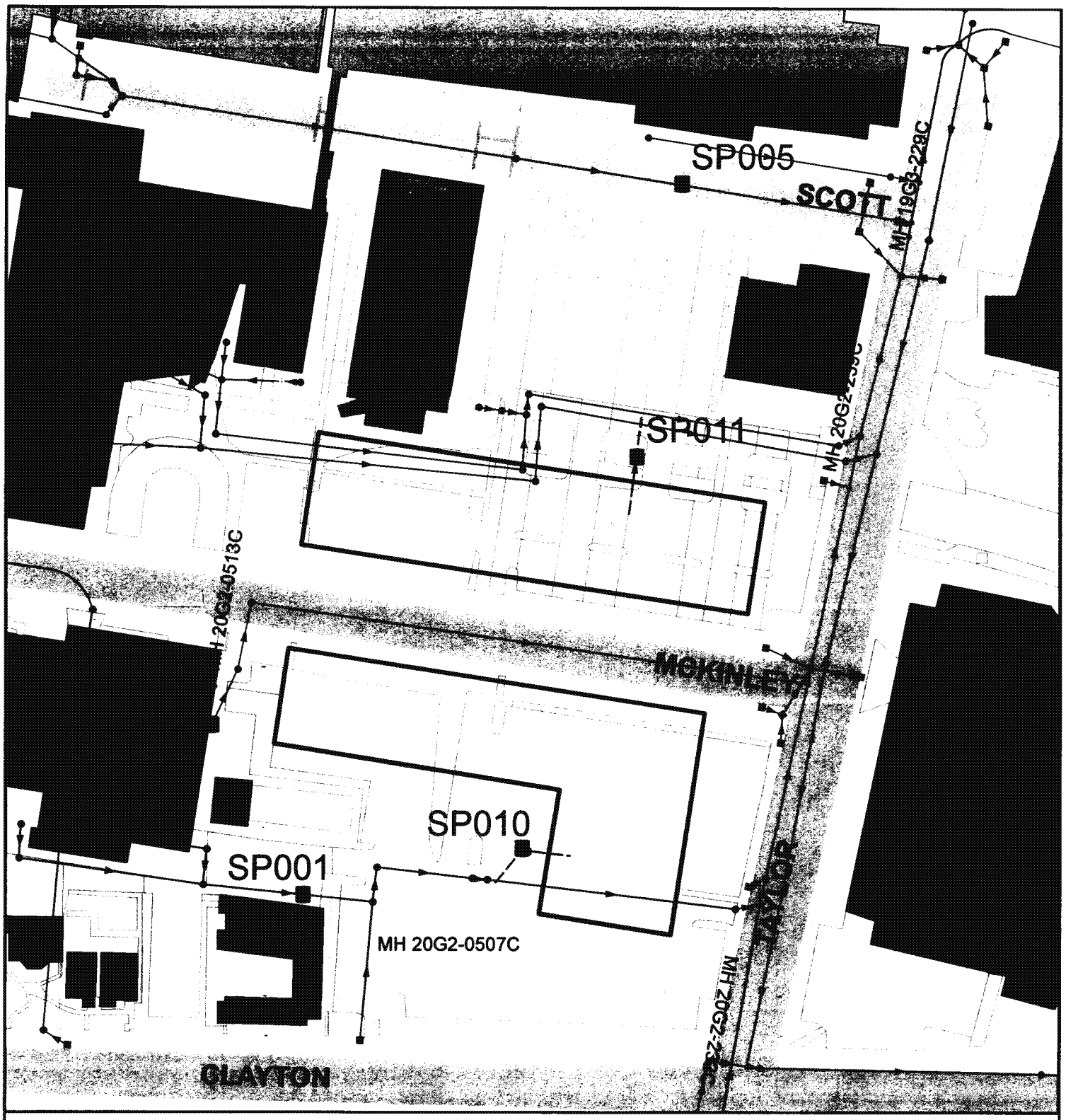
Premise Address: 660 S. Euclid Drawn By: MSK

Zip: 63110 Date: 9/29/15

Page 1 of 3

MSD 044640

MSD-DEC INDUSTRY SAMPLING MAP



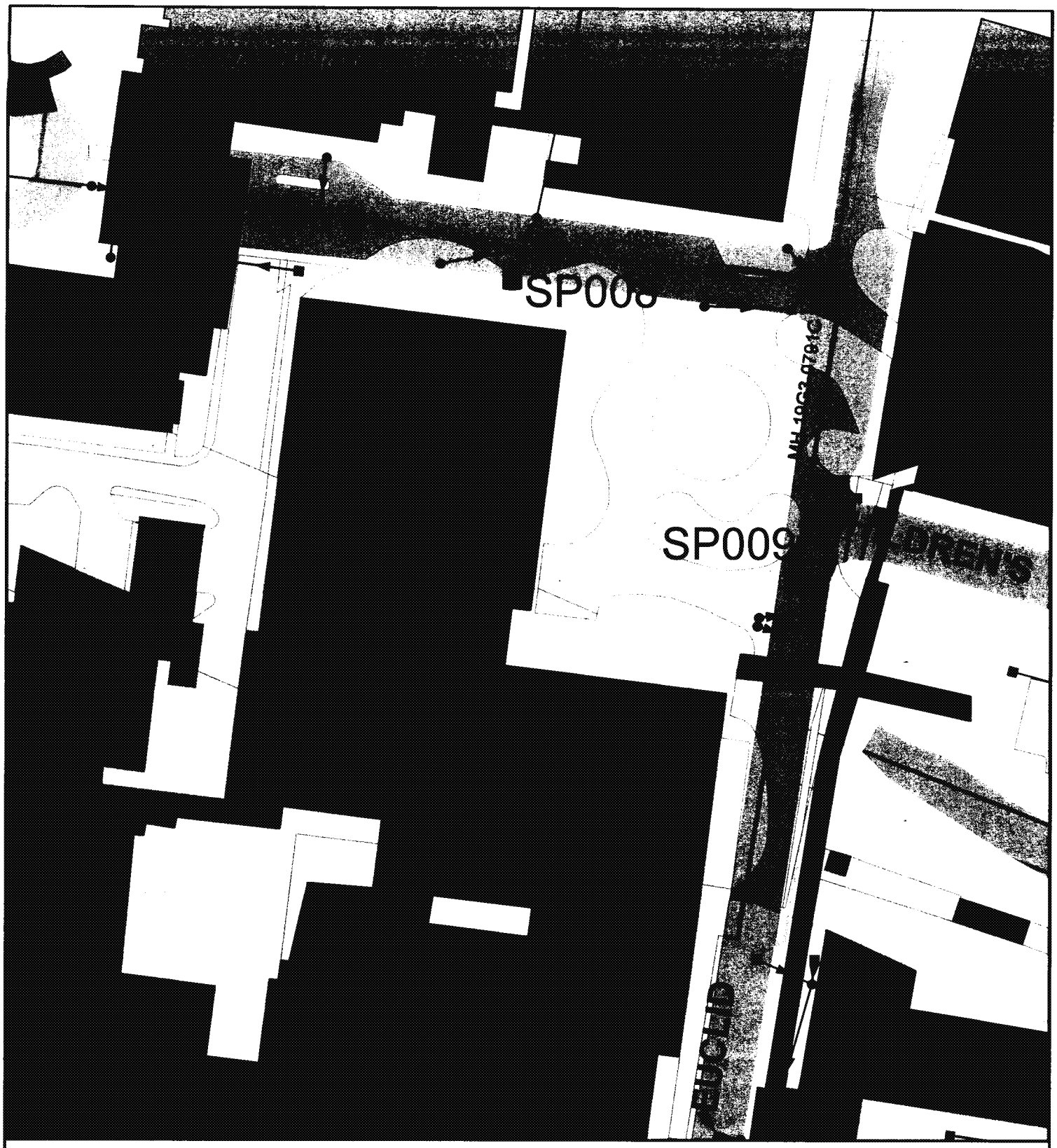
SP001: Flow from W in MH 30' N, 10' W of NE corner of building 27 (in alley)
SP005: MH 200' W of Taylor Ave. on S side of Scott Ave. in street
SP007: Manhole in sidewalk E of Bldg 63; 111' N, 2' E of SE corner of building
SP010: 6" trapped vent, 10'W, 36'N of EHS SW bldg corner
SP011: 12" vent 125'W, 30'N of NE bldg corner

Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

Premise Address: 660 S. Euclid Drawn By: MSK

Zip: 63110 Date: 9/29/15

MSD-DEC INDUSTRY SAMPLING MAP



SP003: Flow from S in MH N of building 14 in drive, 6' S of O2 tanks
SP008: MH in plaza 27' W, 27' N of NE bldg corner
SP009: MH in E plaza 36' N, 27' E of S NE bldg

Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

Premise Address: 660 S. Euclid Drawn By: MSK

Zip: 63110 Date: 9/29/15

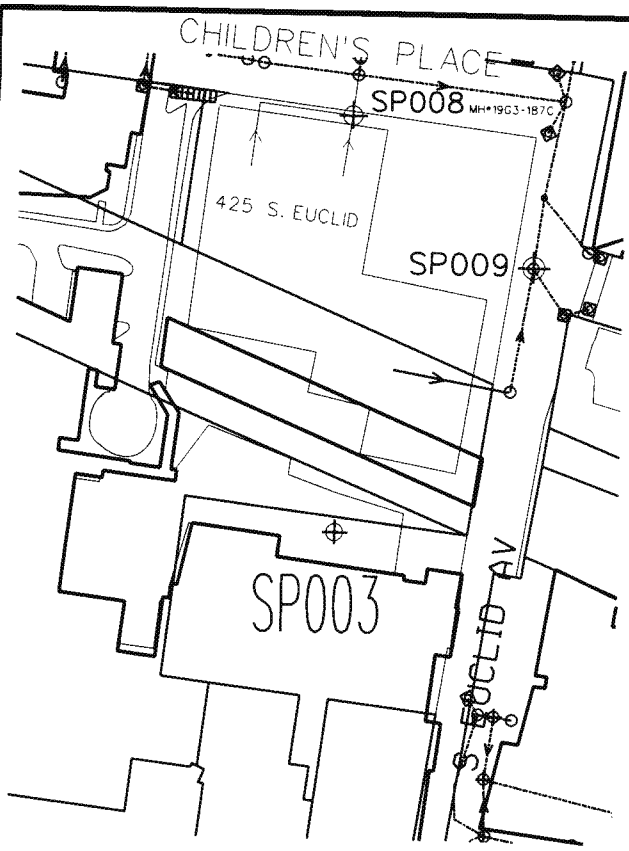
MSD-DEC INDUSTRY SAMPLING MAP

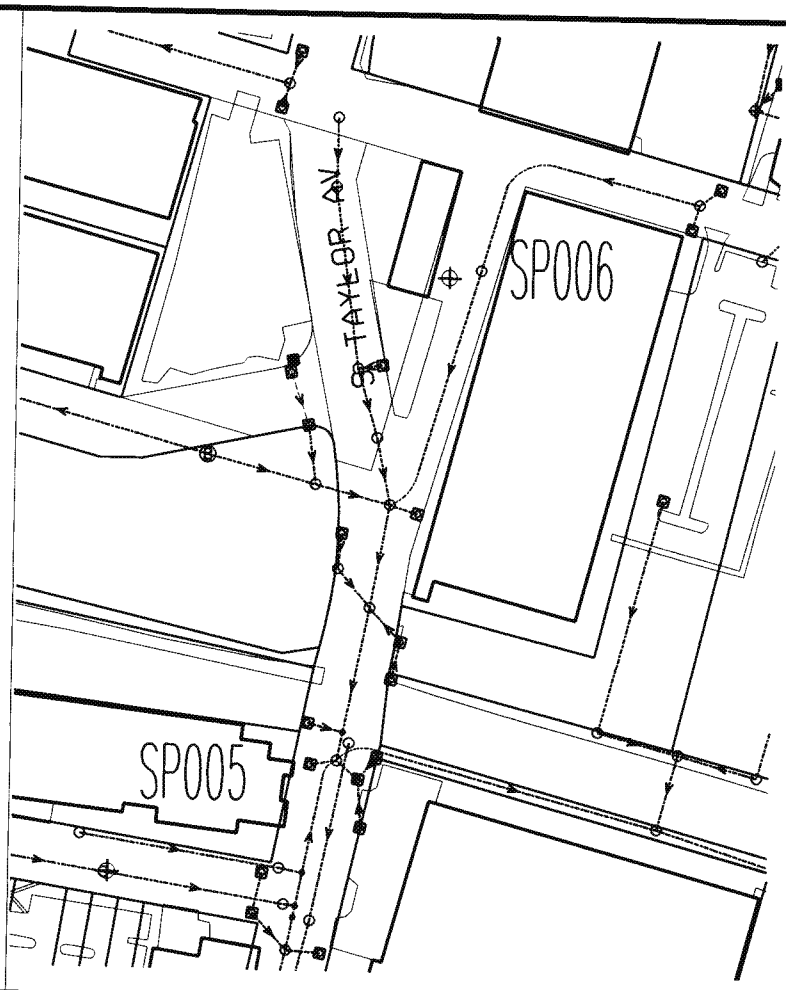
VOID MSK 9-29-15

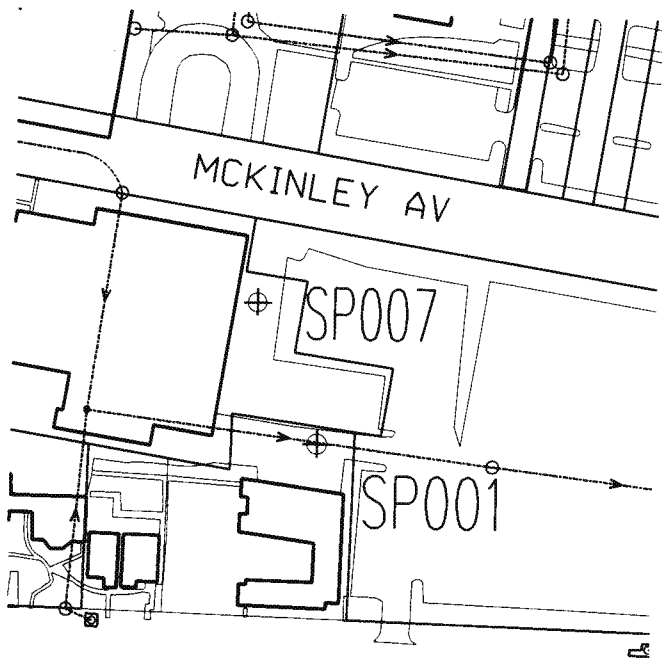
Company Name: WASHINGTON UNIVERSITY MED SCHOOL MSD Account No.: 1024353000 Drawn by: CJB

Premise Address: 660 S. Euclid Zip: 63110 Date: 07/09/12 Page 1 of 2

MSD-DEC INDUSTRY SAMPLING MAP







SP001: FLOW FROM W IN MH 30' N, 10' W OF NE CORNER OF BUILDING 27 (IN ALLEY)

SP003: FLOW FROM S IN MH N OF BUILDING 14 IN DRIVE, 6' S OF 02 TANKS

SP005: MH 200' W OF TAYLOR AVE. ON S SIDE OF SCOTT AVE. IN STREET

SP006: 6" TRAPPED CLAY PIPE 13' N, 9' E OF SE CORNER OF BUILDING 90

SP007: MH IN SIDEWALK E OF BLDG 63: 111' N, 2' E OF SE CORNER OF BLDG

SP008: MH IN PLAZA 27' W, 27' N OF NE BUILDING CORNER

SP009: MH IN E PLAZA 36' N, 27' E OF S NE BUILDING CORNER

VOID
9-29-15 MSK

Company Name: WASHINGTON UNIVERSITY MED SCHOOL

MSD Account No.: 1024353000

Drawn by: CJB

Premise Address: 660 S. Euclid

Zip: 63110

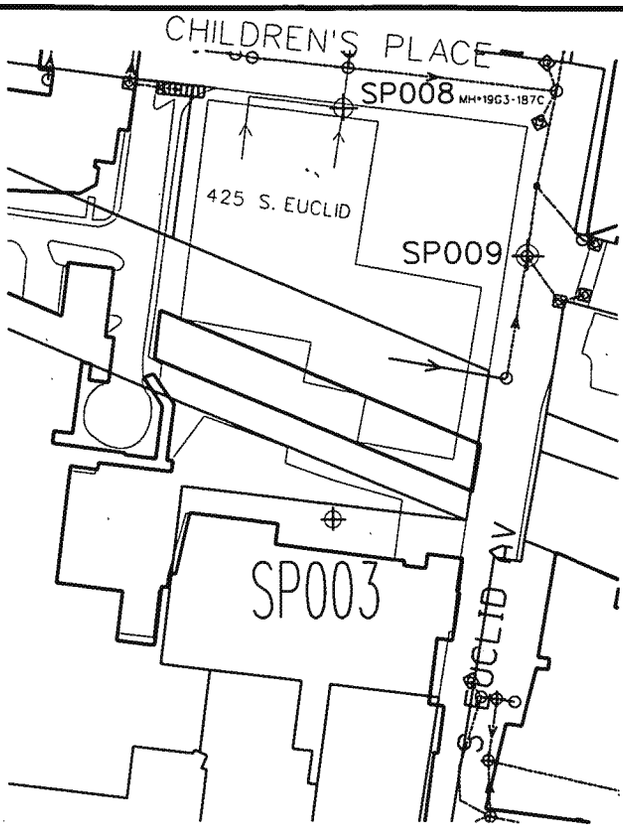
Date: 07/09/12

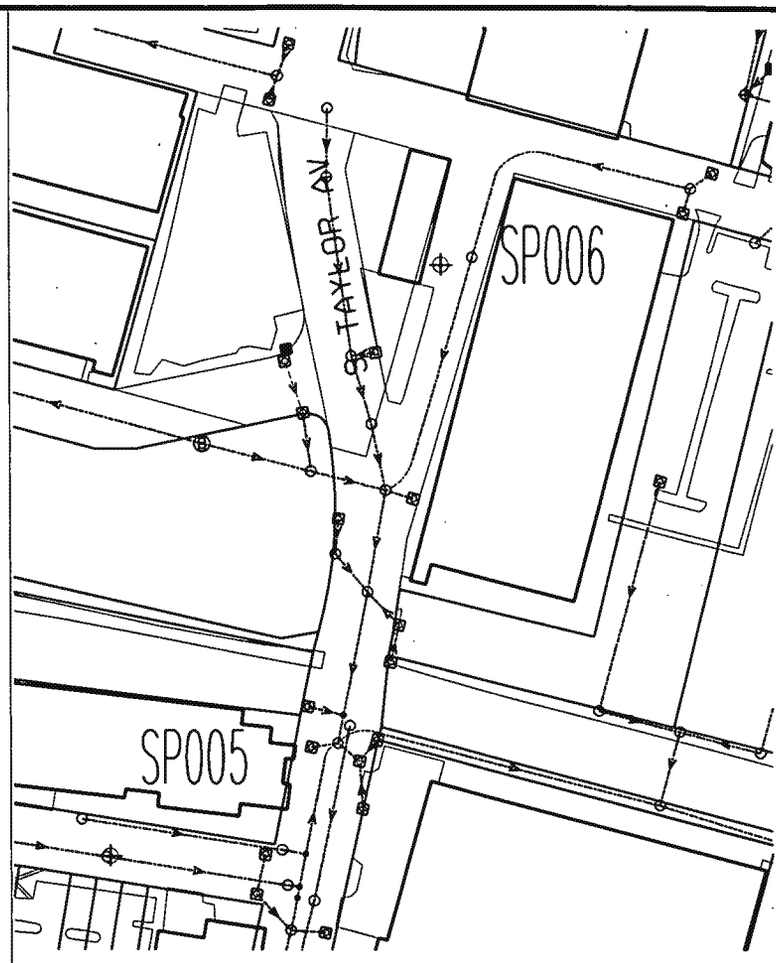
MSD-DEC INDUSTRY SAMPLING MAP

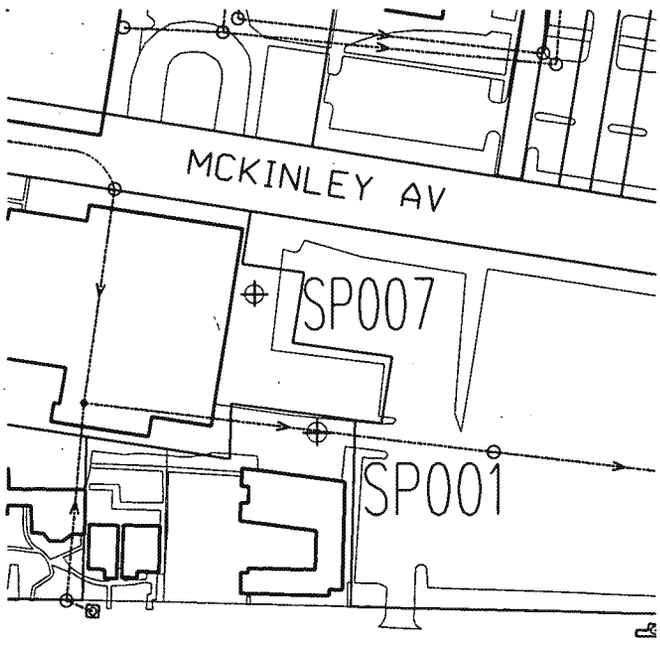
Company Name: WASHINGTON UNIVERSITY MED SCHOOL MSD Account No.: 1024353000 Drawn by: CJB

Premise Address: 660 S. Euclid Zip: 63110 Date: 07/09/12 Page 1 of 2

MSD-DEC INDUSTRY SAMPLING MAP







SP001: FLOW FROM W IN MH 30' N, 10' W OF NE CORNER OF BUILDING 27 (IN ALLEY)

SP003: FLOW FROM S IN MH N OF BUILDING 14 IN DRIVE, 6' S OF 02 TANKS

SP005: MH 200' W OF TAYLOR AVE. ON S SIDE OF SCOTT AVE. IN STREET

SP006: 6" TRAPPED CLAY PIPE 13' N, 9' E OF SE CORNER OF BUILDING 90

SP007: MH IN SIDEWALK E OF BLDG 63; 111' N, 2' E OF SE CORNER OF BLDG

SP008: MH IN PLAZA 27' W, 27' N OF NE BUILDING CORNER

SP009: MH IN E PLAZA 36' N, 27' E OF S NE BUILDING CORNER

Company Name: WASHINGTON UNIVERSITY MED SCHOOL | MSD Account No.: 1024353000 | Drawn by: CJB

Premise Address: 660 S. Euclid | Zip: 63110 | Date: 07/09/12 | Page 2 of 2

MSD-DEC INDUSTRY SAMPLING MAP

MSD MSD

VOID 7-9-12 CB

Company Name: WASHINGTON UNIVERSITY MED SCHOOL MSD Account No.: 5112216200 DRAWN BY: JAG

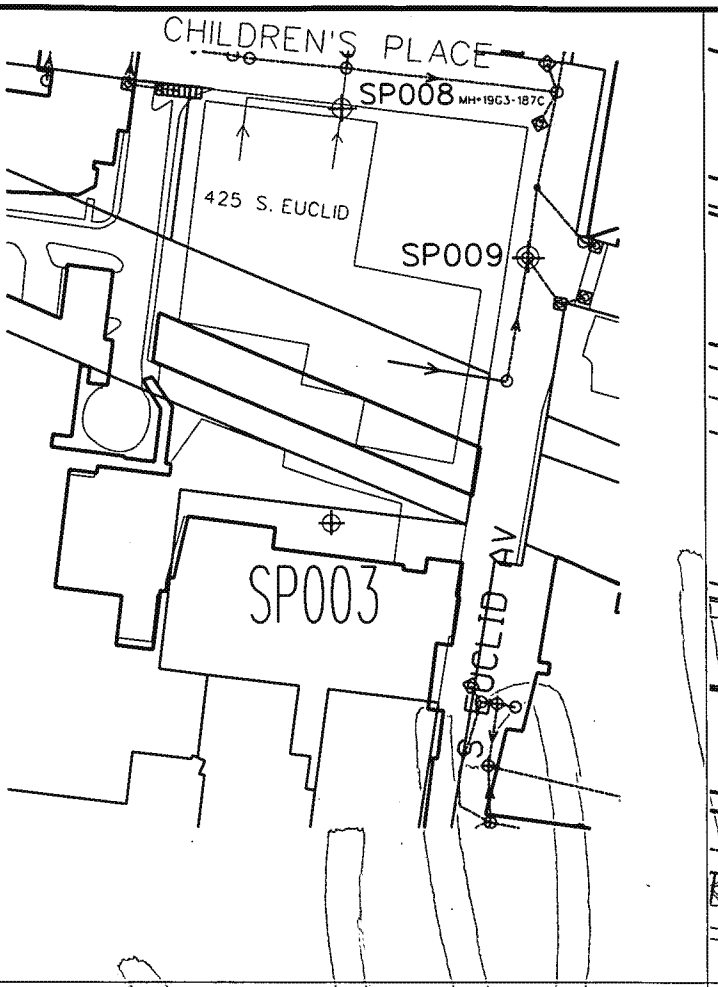
Premise Address: 660 S. Euclid Zip:63110 Date:2/28/11

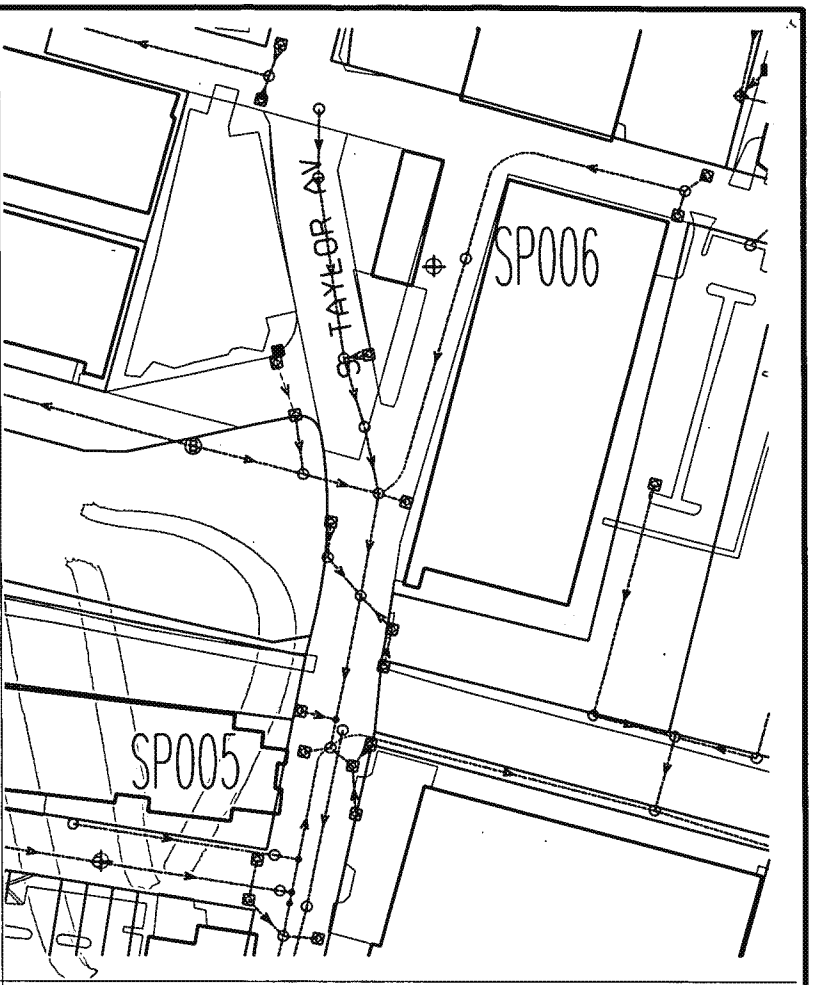
Page 1 of 2

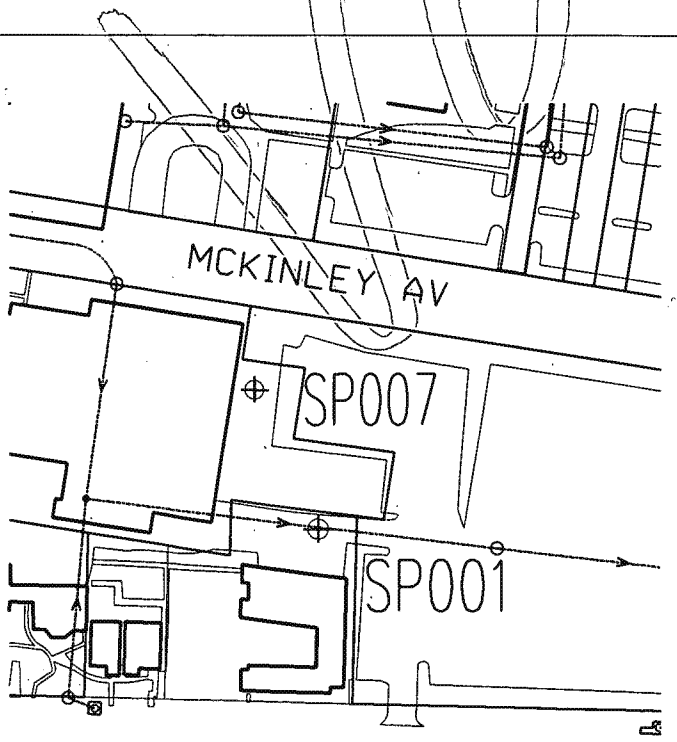
MSD 044647

MSD-DEC INDUSTRY SAMPLING MAP

MSD







SP001: FLOW FROM W IN MH 30' N, 10' W OF NE CORNER OF BUILDING 27 (IN ALLEY)

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SP009: MH IN E PLAZA 36' N, 27' E OF S NE BUILDING CORNER

UOID 7-9-12 CB

Company Name: WASHINGTON UNIVERSITY MED SCHOOL MSD Account No.: 5112216200 DRAWN BY: JAG

Premise Address: 660 S. Euclid Zip: 63110 Date: 2/28/11

Page 2 of 2

Carly Reidt

From: Isringhausen, Livi <isringhausenm@wustl.edu>
Sent: Monday, May 3, 2021 1:19 PM
To: DEC Pretreatment
Cc: Carly Reidt
Subject: Quarterly Report
Attachments: Self Monitoring Report 2nd 2021.pdf

Please see attached. Let me know if you have any other questions.

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095

Washington University in St. Louis
Environmental Health & Safety

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO. 63110
Monitoring Period: 2021 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO. 63110
Monitoring Period: 2021 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

April 30, 2021
Lab No. 21E-0571
Invoice No. INSTL7123

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 04/20/2021, 09:16
WASTEWATER COMPOSITE, SP001, 04/20/2021, 09:16-15:17

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.06	----	150.1	04/20/2021
Temperature, °C (G)	20.1	----	170.1	04/20/2021
Biological Oxygen Demand (C)	82	10	5210 B	04/22/2021
Chemical Oxygen Demand (C)	201	10	5220 D	04/26/2021
Total Suspended Solids (C)	85	10	160.2	04/22/2021
Oil & Grease (G)	15	5	1664	04/23/2021
Silver (C)	<0.005	0.005	200.8	04/30/2021
Total Phenol (G)	0.045	0.005	420.4	04/22/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST.
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St. Louis, MO 63110

April 30, 2021
Lab No. 21E-0571
Invoice No. INSTL7123

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 04/21/2021, 08:43
WASTEWATER COMPOSITE, SP003, 04/21/2021, 08:43-14:43

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.24	-----	150.1	04/21/2021
Temperature, °C (G)	22.4	-----	170.1	04/21/2021
Biological Oxygen Demand (C)	300	10	5210 B	04/23/2021
Chemical Oxygen Demand (C)	186	10	5220 D	04/26/2021
Total Suspended Solids (C)	271	5	160.2	04/22/2021
Oil & Grease (G)	82	5	1664	04/23/2021
Silver (C)	<0.005	0.005	200.8	04/30/2021
Total Phenol (G)	0.019	0.005	420.4	04/22/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

April 30, 2021
Lab No. 21E-0571
Invoice No. INSTL7123

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 04/20/2021, 08:42
WASTEWATER COMPOSITE, SP005, 04/20/2021, 08:42-14:42

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.56	-----	150.1	04/20/2021
Temperature, °C (G)	19.0	-----	170.1	04/20/2021
Biological Oxygen Demand (C)	45	10	5210 B	04/27/2021
Chemical Oxygen Demand (C)	162	10	5220 D	04/26/2021
Total Suspended Solids (C)	41	5	160.2	04/22/2021
Oil & Grease (G)	10	5	1664	04/23/2021
Silver (C)	<0.005	0.005	200.8	04/30/2021
Total Phenol (G)	0.011	0.005	420.4	04/22/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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April 30, 2021
Lab No. 21E-0571
Invoice No. INSTL7123

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 04/20/2021, 09:08
WASTEWATER COMPOSITE, SP007, 04/20/2021, 09:08-15:08

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.32	-----	150.1	04/20/201
Temperature, °C (G)	25.3	-----	170.1	04/20/2021
Biological Oxygen Demand (C)	457	50	5210 B	04/22/2021
Chemical Oxygen Demand (C)	1119	10	5220 D	04/26/2021
Total Suspended Solids (C)	354	5	160.2	04/22/2021
Oil & Grease (G)	49	5	1664	04/23/2021
Silver (C)	<0.005	0.005	200.8	04/30/2021
Total Phenol (G)	0.096	0.005	420.4	04/22/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

April 30, 2021
Lab No. 21E-0571
Invoice No. INSTL7123

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 04/21/2021, 09:06
WASTEWATER COMPOSITE, SP008, 04/21/2021, 09:06-15:04

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.16	----	150.1	04/21/2021
Temperature, °C (G)	25.4	----	170.1	04/21/2021
Biological Oxygen Demand (C)	195	10	5210 B	04/23/2021
Chemical Oxygen Demand (C)	333	10	5220 D	04/26/2021
Total Suspended Solids (C)	96	5	160.2	04/22/2021
Oil & Grease (G)	13	5	1664	04/23/2021
Silver (C)	0.007	0.005	200.8	04/30/2021
Total Phenol (G)	0.009	0.005	420.4	04/22/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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April 30, 2021
Lab No. 21E-0571
Invoice No. INSTL7123

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 04/21/2021, 09:01
WASTEWATER COMPOSITE, SP009, 04/21/2021, 09:01-15:01

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.51	-----	150.1	04/21/2021
Temperature, °C (G)	19.8	-----	170.1	04/21/2021
Biological Oxygen Demand (C)	301	50	5210 B	04/23/2021
Chemical Oxygen Demand (C)	541	10	5220 D	04/26/2021
Total Suspended Solids (C)	258	15	160.2	04/22/2021
Oil & Grease (G)	15	5	1664	04/23/2021
Silver (C)	<0.005	0.005	200.8	04/30/2021
Total Phenol (G)	0.026	0.005	420.4	04/22/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

April 30, 2021
Lab No. 21E-0571
Invoice No. INSTL7123

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 04/20/2021, 08:55
WASTEWATER COMPOSITE, SP010, 04/20/2021, 08:55-14:55

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.09	----	150.1	04/20/2021
Temperature, °C (G)	17.5	----	170.1	04/20/2021
Biological Oxygen Demand (C)	202	50	5210 B	04/22/2021
Chemical Oxygen Demand (C)	250	20	5220 D	04/26/2021
Total Suspended Solids (C)	288	10	160.2	04/22/2021
Oil & Grease (G)	11	5	1664	04/23/2021
Silver (C)	<0.005	0.005	200.8	04/30/2021
Total Phenol (G)	0.097	0.005	420.4	04/22/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST.
NOT OFFICIAL WITHOUT THE RAISED SEAL OF ST. LOUIS TESTING LABORATORIES, INC.
SEE REVERSE FOR CONDITIONS.

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

April 30, 2021
Lab No. 21E-0571
Invoice No. INSTL7123

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 04/21/2021, 09:46
WASTEWATER COMPOSITE, SP011, 04/21/2021, 09:46-15:46

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.55	----	150.1	04/21/2021
Temperature, °C (G)	21.8	----	170.1	04/21/2021
Biological Oxygen Demand (C)	370	10	5210 B	04/23/2021
Chemical Oxygen Demand (C)	677	10	5220 D	04/26/2021
Total Suspended Solids (C)	206	5	160.2	04/22/2021
Oil & Grease (G)	7	5	1664	04/23/2021
Silver (C)	<0.005	0.005	200.8	04/30/2021
Total Phenol (G)	0.011	0.005	420.4	04/22/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

April 30, 2021
Lab No. 21E-0571
Invoice No. INSTL7123

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 04/21/2021, 09:56

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
Oil & Grease (G)	15	5	1664	04/23/2021

MQL: Minimum Quantitative Limit

(G)-Grab

Kimberly Kostelac, Manager
Environmental Testing

KK/tz

MEMBER ACIL

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SEE REVERSE FOR CONDITIONS.

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official:
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 5/3/2021

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.436.8710 www.stlmsd.com

April 1, 2021

Livi Isringhausen
WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid
St. Louis, MO 63110

RE: NOTICE OF VIOLATION – WASTEWATER DISCHARGE PERMIT NO. 1024353000
For premise at: 660 S. Euclid

Dear Ms. Isringhausen:

As I had mentioned during my voicemail I left you on April 1, 2021, MSD personnel recently collected and analyzed samples of wastewater discharged to the MSD system from the premise above. Unfortunately, we identified the following violation:

VIOLATION OF DISCHARGE LIMITATIONS:

DATE	TIME	SAMPLE POINT	SAMPLE TYPE	POLLUTANT	DISCHARGE LIMIT	LIMIT TYPE	VALUE FOUND
3-18-21	0936	007	Grab	Oil & Grease (T)	200 mg/L	IN	259 mg/L

SP007: Manhole in sidewalk E of Bldg 63; 111' N, 2' E of SE corner of building **(T) = Total substance**
mg/L = milligrams per liter **IN = Instantaneous**

REQUIRED ACTION/RESPONSE:

1. Submit a report of corrective actions, to ensure compliance with MSD limitations for oil & grease. In the report:

   a. Indicate which corrective actions are initiated and which are still to come
   b. Include plans for additional sampling to verify a return to compliance

   For any actions that include power washing, water jetting, or otherwise cleaning of sampling structures and sewer laterals or lines, the flushed out material and associated wash water must be captured and disposed of properly. The material and associated wash water must not be flushed out into the sewer system.

2. Submit all additional sampling results to MSD. Sample collection must occur as follows:

   a. Sample at the identified sampling points
   b. Collect Grab samples for oil & grease
   c. Take samples at times representative of normal operations

3. Refer to the enclosure for additional information on:

   a. Potential enforcement actions should noncompliance continue
   b. Percentages applicable to Significant Noncompliance, when planning for additional sampling

4. Submit your response no later than **May 3, 2021**.

Please note that MSD also has a separate program devoted specifically to food-related fats, oils, and grease (FOG) discharge control. We have informed the FOG program of this violation. They will be contacting you separately regarding an inspection of your grease traps and food waste control measures, as well as checking your discharge's effect on the downstream MSD manhole structure 20G2-513C. Their experience could aid you in returning to compliance.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Jason Gill
Environmental Engineering Associate

Enclosures: SNC enclosure, SP map

ec: Doug Mendoza
Carly Reidt
Alverda Oppermann, FOG Program Team Leader

SIGNIFICANT NONCOMPLIANCE ENCLOSURE

Federal regulations require the Metropolitan St. Louis Sewer District to track the compliance status of all industrial users with the terms of federal pretreatment regulation 40 CFR 403, MSD Ordinance 12559, and the user's industrial wastewater discharge permit. MSD must identify those users who are in significant noncompliance, as defined in the ordinance. We do this on a semi-annual basis.

MSD's Enforcement Response Plan requires MSD to:

- Make an annual publication in the St. Louis Post-Dispatch of all users in SNC
- Initiate additional enforcement action, if necessary to secure timely and effective compliance

The plan is an integral part of MSD's pretreatment program, and is approved by Missouri Department of Natural Resources.

Asterisks appearing next to the "Value Found" results in the accompanying notice:

none This is the first violation within the **January 1 through June 30** review period.

* This is at least the second violation within the **January 1 through June 30** review period.

** The violation equals or exceeds the limit multiplied by a "technical review criteria" factor. The TRC for most pollutants is 1.2. For oil & grease, the TRC is 1.4.

*** Both of the conditions above exist.

SNC is calculated separately for each pollutant at each sample point for each limit type. Your facility will be in SNC if any of the following conditions apply:

1. 66% or more of results within this six-month period exceed the limit by any amount (chronic)
2. 33% or more of results within this six-month period equal or exceed the limit multiplied by the TRC

Example scenarios:

Date	Sample Point	Pollutant	Discharge Limit	Limit Type	Value Found
March 23	901	Zinc (T)	2.61 mg/L	DM	2.92 mg/L
March 23	901	Zinc (T)	1.48 mg/L	MA	2.92 mg/L **

As of June 30:
Zinc at sample point 901 – DM = 100% chronic – **SNC**
Zinc at sample point 901 – DM = 0% TRC – NOT SNC
Zinc at sample point 901 – MA = 100% chronic – **SNC**
Zinc at sample point 901 – MA = 100% TRC – **SNC**

Date	Sample Point	Pollutant	Discharge Limit	Limit Type	Value Found
March 23	901	Zinc (T)	2.61 mg/L	DM	2.92 mg/L
March 23	901	Zinc (T)	1.48 mg/L	MA	2.92 mg/L **
June 14	901	Zinc (T)	2.61 mg/L	DM	1.65 mg/L (not a violation)
June 14	901	Zinc (T)	1.48 mg/L	MA	1.65 mg/L *

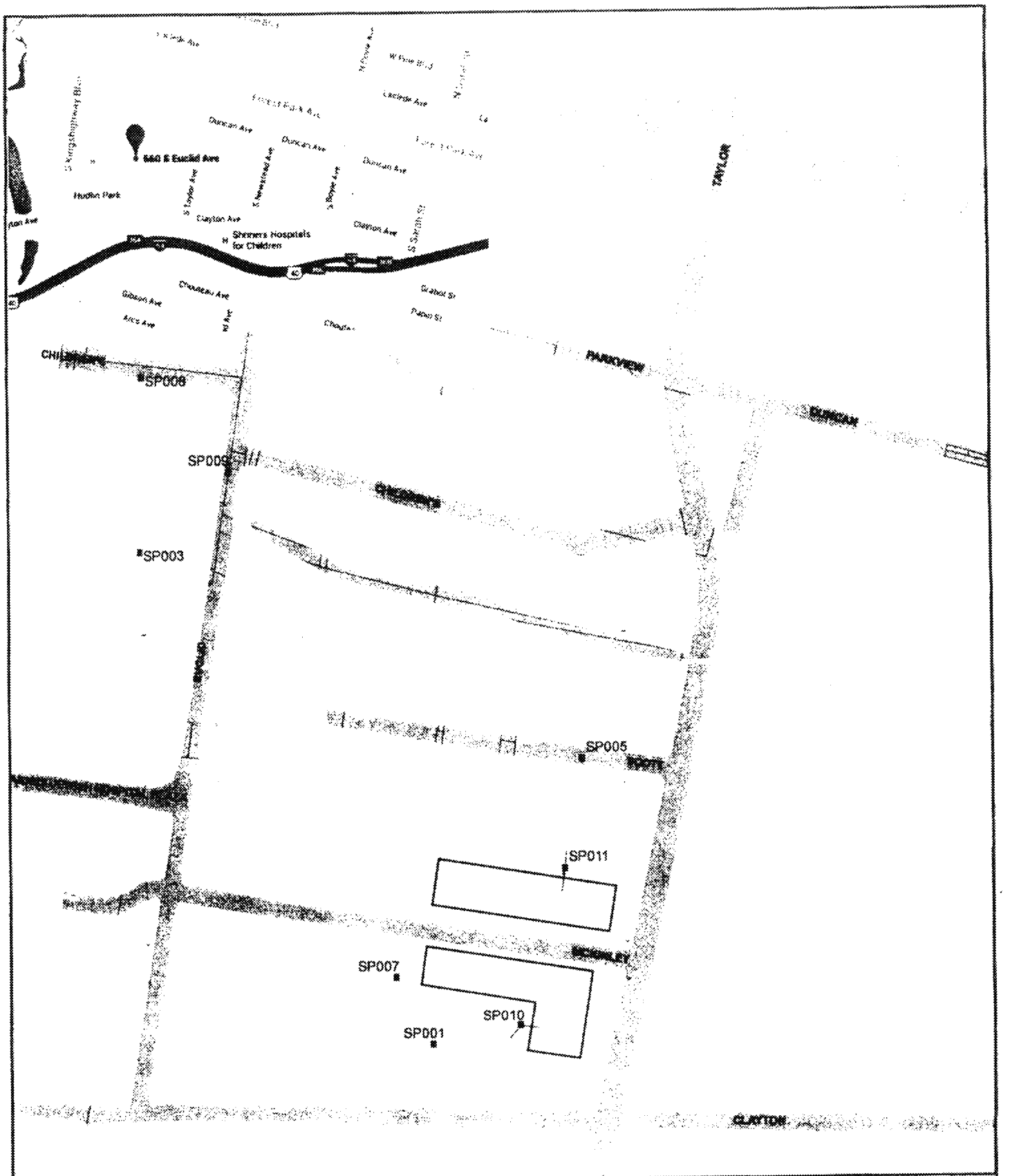
As of June 30:
Zinc at sample point 901 – DM = 50% chronic – NOT SNC
Zinc at sample point 901 – DM = 0% TRC – NOT SNC
Zinc at sample point 901 – MA = 50% chronic – NOT SNC
Zinc at sample point 901 – MA = 50% TRC – **SNC**

As soon as possible, you must correct the problem that caused the violations identified in the accompanying notice.

After you correct the problem, MSD strongly advises you to collect and analyze additional samples for the problem pollutants within the current six-month review period. This period ends on June 30. Multiple samples may be necessary to avoid SNC.

Under federal regulations, you must submit the results of all analyses you perform to MSD. MSD will use the results, along with the results of all MSD samples, to determine whether we must list your facility as in SNC.

MSD-DEC INDUSTRY SAMPLING MAP

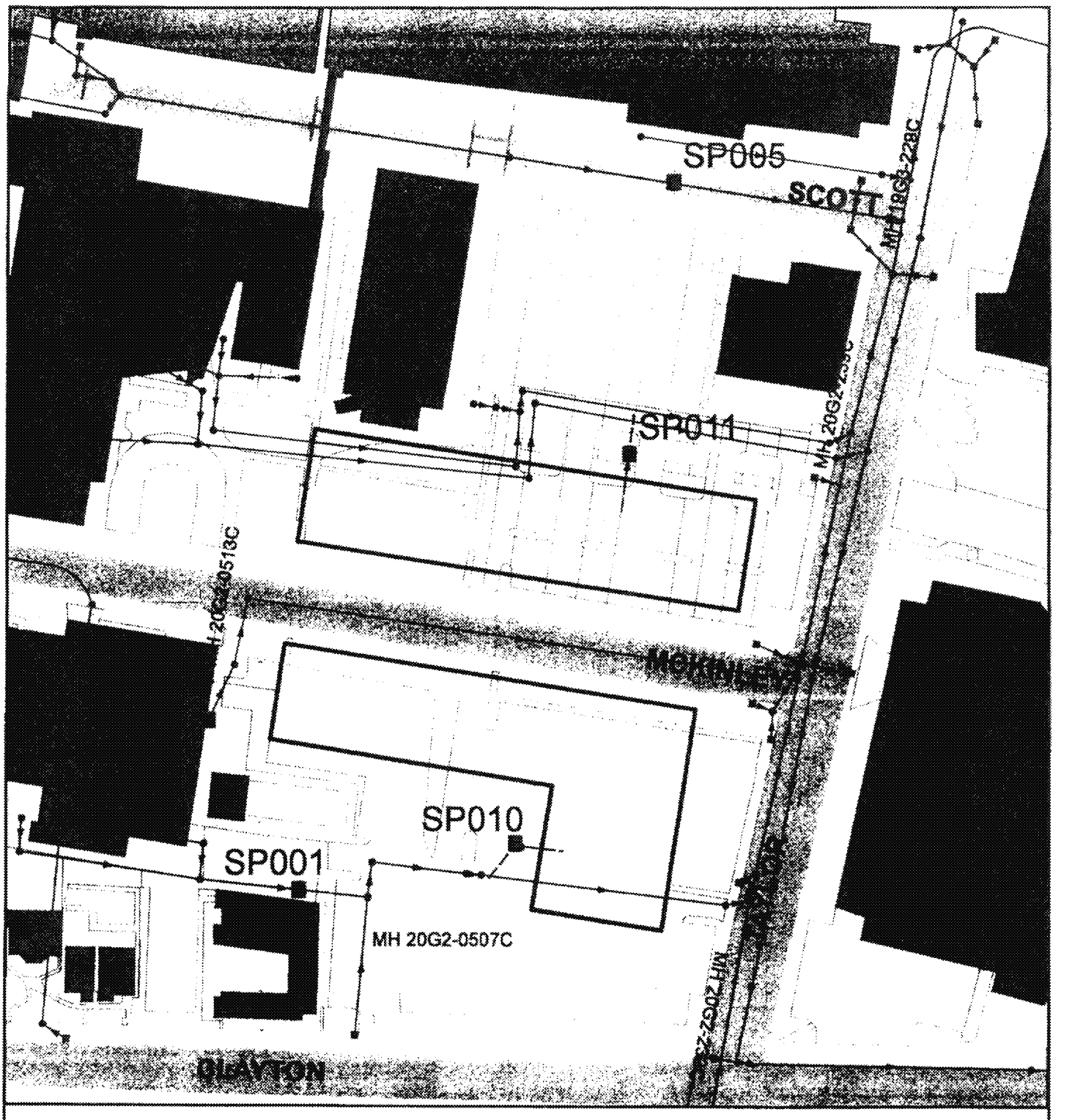


Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

Premise Address: 660 S. Euclid Drawn By: MSK

Zip: 63110 Date: 9/29/15

MSD-DEC INDUSTRY SAMPLING MAP



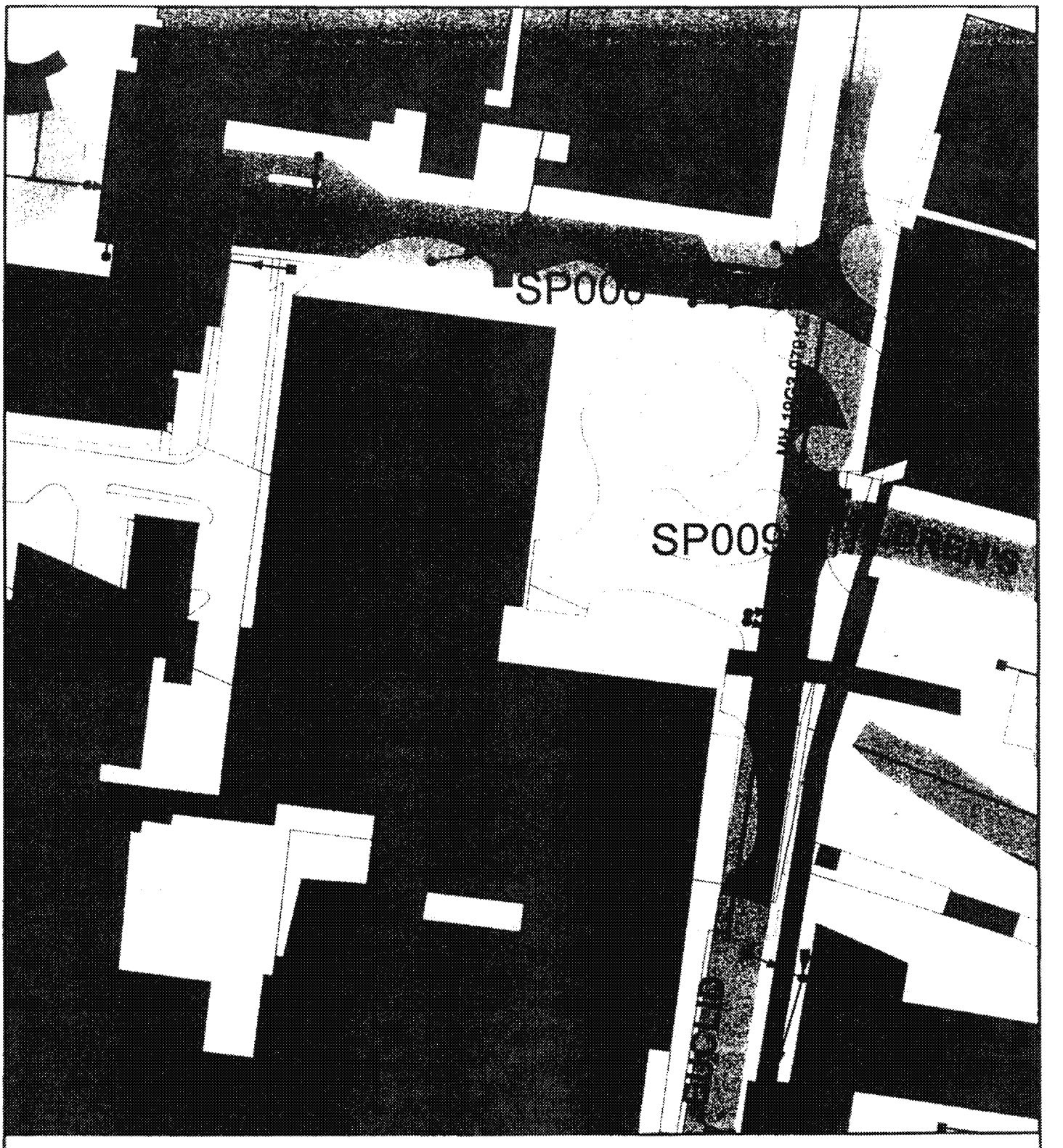
SP001: Flow from W in MH 30' N, 10' W of NE corner of building 27 (in alley)
SP005: MH 200' W of Taylor Ave. on S side of Scott Ave. in street
SP007: Manhole in sidewalk E of Bldg 63; 111' N, 2' E of SE corner of building
SP010: 6" trapped vent, 10'W, 36'N of EHS SW bldg corner
SP011: 12" vent 125'W, 30'N of NE bldg corner

Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

Premise Address: 660 S. Euclid Drawn By: MSK

Zip: 63110 Date: 9/29/15

MSD-DEC INDUSTRY SAMPLING MAP



SP003: Flow from S in MH N of building 14 in drive, 6' S of O2 tanks
SP008: MH in plaza 27' W, 27' N of NE bldg corner
SP009: MH in E plaza 36' N, 27' E of S NE bldg

Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

Premise Address: 660 S. Euclid Drawn By: MSK

Zip: 63110 Date: 9/29/15

Carly Reidt

From: Isringhausen, Livi <isringhausenm@wustl.edu>
Sent: Thursday, February 4, 2021 9:02 AM
To: DEC Pretreatment
Subject: WUSM 1st Report
Attachments: Self Monitoring Report 1st 2021.pdf

Good Morning! Please see attached report. Please contact me with any questions are concerns.

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St. Louis
Environmental Health & Safety

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2020 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2021 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 2/4/2021

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 28, 2021
Lab No. 21E-0075

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 01/19/2021, 09:27
WASTEWATER COMPOSITE, SP001, 01/19/2021, 09:27-15:05

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.16	----	150.1	01/19/2021
Temperature, °C (G)	19.9	----	170.1	01/19/2021
Biological Oxygen Demand (C)	182	10	5210 B	01/20/2021
Chemical Oxygen Demand (C)	205	10	5220 D	01/27/2021
Total Suspended Solids (C)	172	10	160.2	01/22/2021
Oil & Grease (G)	25	5	1664	01/22/2021
Silver (C)	< 0.05	0.05	200.7	01/27/2021
Total Phenol (G)	0.019	0.005	420.4	01/21/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 28, 2021
Lab No. 21E-0075

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 01/20/2021, 08:57
WASTEWATER COMPOSITE, SP003, 01/20/2021, 08:57-14:57

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.02	----	150.1	01/20/2021
Temperature, °C (G)	21.3	----	170.1	01/20/2021
Biological Oxygen Demand (C)	285	10	5210 B	01/20/2021
Chemical Oxygen Demand (C)	346	10	5220 D	01/27/2021
Total Suspended Solids (C)	105	5	160.2	01/22/2021
Oil & Grease (G)	39	5	1664	01/22/2021
Silver (C)	< 0.05	0.05	200.7	01/27/2021
Total Phenol (G)	0.015	0.005	420.4	01/21/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 28, 2021
Lab No. 21E-0075

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 01/19/2021, 08:39
WASTEWATER COMPOSITE, SP005, 01/19/2021, 08:39-14:39

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.22	----	150.1	01/19/2021
Temperature, °C (G)	17.0	----	170.1	01/19/2021
Biological Oxygen Demand (C)	39	10	5210 B	01/20/2021
Chemical Oxygen Demand (C)	96	10	5220 D	01/27/2021
Total Suspended Solids (C)	51	5	160.2	01/22/2021
Oil & Grease (G)	7	5	1664	01/22/2021
Silver (C)	< 0.05	0.05	200.7	01/27/2021
Total Phenol (G)	0.005	0.005	420.4	01/21/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 28, 2021
Lab No. 21E-0075

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 01/19/2021, 09:14
WASTEWATER COMPOSITE, SP007, 01/19/2021, 09:14-15:14

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.19	----	150.1	01/19/2021
Temperature, °C (G)	22.6	----	170.1	01/19/2021
Biological Oxygen Demand (C)	545	50	5210 B	01/20/2021
Chemical Oxygen Demand (C)	610	20	5220 D	01/27/2021
Total Suspended Solids (C)	286	5	160.2	01/22/2021
Oil & Grease (G)	15	5	1664	01/22/2021
Silver (C)	< 0.05	0.05	200.7	01/27/2021
Total Phenol (G)	0.235	0.005	420.4	01/21/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 28, 2021
Lab No. 21E-0075

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 01/20/2021, 09:12
WASTEWATER COMPOSITE, SP008, 01/20/2021, 09:12-14:53

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.55	----	150.1	01/20/2021
Temperature, °C (G)	19.9	----	170.1	01/20/2021
Biological Oxygen Demand (C)	225	10	5210 B	01/20/2021
Chemical Oxygen Demand (C)	388	10	5220 D	01/27/2021
Total Suspended Solids (C)	96	5	160.2	01/22/2021
Oil & Grease (G)	73	5	1664	01/22/2021
Silver (C)	< 0.05	0.05	200.7	01/27/2021
Total Phenol (G)	0.018	0.005	420.4	01/21/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 28, 2021
Lab No. 21E-0075

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 01/20/2021, 09:06
WASTEWATER COMPOSITE, SP009, 01/20/2021, 09:06-14:48

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.20	----	150.1	01/20/2021
Temperature, °C (G)	21.5	----	170.1	01/20/2021
Biological Oxygen Demand (C)	505	50	5210 B	01/20/2021
Chemical Oxygen Demand (C)	801	10	5220 D	01/27/2021
Total Suspended Solids (C)	410	15	160.2	01/22/2021
Oil & Grease (G)	13	5	1664	01/22/2021
Silver (C)	< 0.05	0.05	200.7	01/27/2021
Total Phenol (G)	0.060	0.005	420.4	01/21/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 28, 2021
Lab No. 21E-0075

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 01/19/2021, 08:59
WASTEWATER COMPOSITE, SP010, 01/19/2021, 08:59-14:59

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.43	----	150.1	01/19/2021
Temperature, °C (G)	14.9	----	170.1	01/19/2021
Biological Oxygen Demand (C)	580	50	5210 B	01/20/2021
Chemical Oxygen Demand (C)	710	20	5220 D	01/27/2021
Total Suspended Solids (C)	435	10	160.2	01/22/2021
Oil & Grease (G)	21	5	1664	01/22/2021
Silver (C)	< 0.05	0.05	200.7	01/27/2021
Total Phenol (G)	0.105	0.005	420.4	01/21/2021

MQL: Minimum Quantitative Limit

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(G)-Grab

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St. Louis, MO 63110

January 28, 2021
Lab No. 21E-0075

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 01/20/2021, 08:30
WASTEWATER COMPOSITE, SP011, 01/20/2021, 08:30-14:30

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.15	----	150.1	01/20/2021
Temperature, °C (G)	21.5	----	170.1	01/20/2021
Biological Oxygen Demand (C)	241	10	5210 B	01/20/2021
Chemical Oxygen Demand (C)	378	10	5220 D	01/27/2021
Total Suspended Solids (C)	57	5	160.2	01/22/2021
Oil & Grease (G)	< 5	5	1664	01/22/2021
Silver (C)	< 0.05	0.05	200.7	01/27/2021
Total Phenol (G)	0.017	0.005	420.4	01/21/2021

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/edn

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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Carly Reidt

From: Isringhausen, Livi <isringhausenm@wustl.edu>
Sent: Monday, November 2, 2020 2:31 PM
To: DEC Pretreatment
Subject: 2020 4th Quarter SMR for WUSM
Attachments: Self monitoring Report (4th) 2020.pdf

Please let me know if you have any questions.

Livi Isringhausen
Environmental Compliance Manager
Washington University School of medicine
660 South Euclid Campus Box 8229
St. Louis, MO 63110
isringhausenm@wustl.edu
Office (314)362-6735
Mobile (314) 602-8551

Metropolitan Saint Louis Sewer District
2350 Market Street
Saint Louis, Missouri 63103-2555

INDUSTRIAL WASTEWATER DISCHARGE PERMIT 1024353000 - 2

ANNUAL PERMIT FEE NOTICE

for **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
at
660 Euclid Ave
Saint Louis, MO 63110

For permits in effect on 10/01/2020.

Explanation of Charges

Fee for Pretreatment Program Discharge Permit covering the period October 1, 2020 through September 30, 2021 issued in accordance with the Metropolitan St. Louis District Ordinances #14853 for the location at **660 Euclid Ave.**

Base charge @ $180.00 per permit			$ 180.00
Volume charge @$0.86 per average daily Ccf	624.74	Ccfs	$ 627.74
Sample Point Charge @$120.00 per sample point	8	points	$ 960.00
		Total Fee Due:	**$ 1797.28**

For inquiries about the Annual Permit Fee, please call 314-436-8710.
For inquiries about payment of the fee, please call 1-866-281-5737.

THIS IS NOT A BILL
DO NOT PAY SEPARATELY
FEE IS INCLUDED ON MONTHLY BILL

Livi Isringhausen
WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid Ave., Campus Box 8229
Saint Louis, MO 63110

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2020 (Jan-Mar) (Apr-June) (July-Sept) √ (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2020 (Jan-Mar) (Apr-June) (July-Sept) √ (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

October 30, 2020
Lab No. 20E-1965
Invoice No. 276678

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 10/20/2020, 08:43
WASTEWATER COMPOSITE, SP001, 10/20/2020, 08:43-14:30

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.94	----	150.1	10/20/2020
Temperature, °C (G)	21.6	----	170.1	10/20/2020
Biological Oxygen Demand (C)	117	10	5210 B	10/22/2020
Chemical Oxygen Demand (C)	289	10	5220 D	10/22/2020
Total Suspended Solids (C)	117	10	160.2	10/30/2020
Oil & Grease (G)	9	5	1664	10/23/2020
Silver (C)	< 0.05	0.05	200.7	10/28/2020
Total Phenol (G)	0.035	0.005	420.4	10/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

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October 30, 2020
Lab No. 20E-1965
Invoice No. 276678

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 10/21/2020, 08:47
WASTEWATER COMPOSITE, SP003, 10/21/2020, 08:47-14:47

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.73	----	150.1	10/21/2020
Temperature, °C (G)	23.0	----	170.1	10/21/2020
Biological Oxygen Demand (C)	33	10	5210 B	10/22/2020
Chemical Oxygen Demand (C)	102	10	5220 D	10/22/2020
Total Suspended Solids (C)	34	5	160.2	10/30/2020
Oil & Grease (G)	< 5	5	1664	10/23/2020
Silver (C)	< 0.05	0.05	200.7	10/28/2020
Total Phenol (G)	< 0.005	0.005	420.4	10/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

October 30, 2020
Lab No. 20E-1965
Invoice No. 276678

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 10/20/2020, 09:13
WASTEWATER COMPOSITE, SP005, 10/20/2020, 09:13-15:13

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.26	----	150.1	10/20/2020
Temperature, °C (G)	24.1	----	170.1	10/20/2020
Biological Oxygen Demand (C)	66	10	5210 B	10/22/2020
Chemical Oxygen Demand (C)	129	10	5220 D	10/22/2020
Total Suspended Solids (C)	99	5	160.2	10/30/2020
Oil & Grease (G)	5	5	1664	10/23/2020
Silver (C)	< 0.05	0.05	200.7	10/28/2020
Total Phenol (G)	0.243	0.005	420.4	10/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

October 30, 2020
Lab No. 20E-1965
Invoice No. 276678

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 10/20/2020, 09:02
WASTEWATER COMPOSITE, SP007, 10/20/2020, 09:02-15:02

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.08	----	150.1	10/20/2020
Temperature, °C (G)	26.9	----	170.1	10/20/2020
Biological Oxygen Demand (C)	520	10	5210 B	10/22/2020
Chemical Oxygen Demand (C)	623	10	5220 D	10/29/2020
Total Suspended Solids (C)	294	5	160.2	10/30/2020
Oil & Grease (G)	< 1	5	1664	10/23/2020
Silver (C)	< 0.05	0.05	200.7	10/28/2020
Total Phenol (G)	< 0.005	0.005	420.4	10/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

October 30, 2020
Lab No. 20E-1965
Invoice No. 276678

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 10/21/2020, 09:09
WASTEWATER COMPOSITE, SP008, 10/21/2020, 09:09-15:02

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.74	----	150.1	10/21/2020
Temperature, °C (G)	21.1	----	170.1	10/21/2020
Biological Oxygen Demand (C)	174	10	5210 B	10/22/2020
Chemical Oxygen Demand (C)	206	10	5220 D	10/22/2020
Total Suspended Solids (C)	86	5	160.2	10/30/2020
Oil & Grease (G)	< 5	5	1664	10/23/2020
Silver (C)	< 0.05	0.05	200.7	10/28/2020
Total Phenol (G)	0.119	0.005	420.4	10/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

October 30, 2020
Lab No. 20E-1965
Invoice No. 276678

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 10/21/2020, 09:01
WASTEWATER COMPOSITE, SP009, 10/21/2020, 09:01-15:01

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.26	----	150.1	10/21/2020
Temperature, °C (G)	25.4	----	170.1	10/21/2020
Biological Oxygen Demand (C)	475	50	5210 B	10/22/2020
Chemical Oxygen Demand (C)	766	10	5220 D	10/22/2020
Total Suspended Solids (C)	463	15	160.2	10/30/2020
Oil & Grease (G)	40	5	1664	10/23/2020
Silver (C)	< 0.05	0.05	200.7	10/28/202
Total Phenol (G)	0.081	0.005	420.4	10/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

October 30, 2020
Lab No. 20E-1965
Invoice No. 276678

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 10/20/2020, 08:32
WASTEWATER COMPOSITE, SP010, 10/20/2020, 08:32-14:32

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.66	----	150.1	10/20/2020
Temperature, °C (G)	22.2	----	170.1	10/20/2020
Biological Oxygen Demand (C)	333	10	5210 B	10/22/2020
Chemical Oxygen Demand (C)	409	10	5220 D	10/22/2020
Total Suspended Solids (C)	184	10	160.2	10/30/2020
Oil & Grease (G)	23	5	1664	10/23/2020
Silver (C)	< 0.05	0.05	200.7	10/28/2020
Total Phenol (G)	0.070	0.005	420.4	10/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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October 30, 2020
Lab No. 20E-1965
Invoice No. 276678

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 10/21/2020, 08:32
WASTEWATER COMPOSITE, SP011, 10/21/2020, 08:32-14:32

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.19	----	150.1	10/21/2020
Temperature, °C (G)	20.8	----	170.1	10/21/2020
Biological Oxygen Demand (C)	31	10	5210 B	10/22/2020
Chemical Oxygen Demand (C)	314	10	5220 D	10/22/2020
Total Suspended Solids (C)	145	5	160.2	10/30/2020
Oil & Grease (G)	6	5	1664	10/23/2020
Silver (C)	< 0.05	0.05	200.7	10/28/2020
Total Phenol (G)	0.055	0.005	420.4	10/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/jmr

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735/314-602-8551
	Signature Date: 11/2/2020

Carly Reidt

From: Isringhausen, Livi <isringhausenm@wustl.edu>
Sent: Friday, August 21, 2020 10:44 AM
To: DEC Pretreatment
Cc: Carly Reidt
Subject: WUSM Q3 Report
Attachments: Self monitoring Report (3rd Quarter) 2020.pdf; 20E1350-1.pdf

Good Morning! Please see attached report. Please contact me with any questions are concerns.

Livi Isringhausen
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Washington University School of medicine
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METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 51122162-00
Premise Address: 660 South Euclid Ave., St. Louis, MO. 63110
Monitoring Period: 2020 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005			
Dates on Which Samples Were Collected		G:	see attatched	G:	see attatched	G:	see attatched		
		C:	see attatched	C:	see attatched	C:	see attatched		
Times at Which Samples Were Collected		G:	see attatched	G:	see attatched	G:	see attatched		
		C:	see attatched	C:	see attatched	C:	see attatched		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow							Units
Flow	***	E	950	E	23,500	E	131,850		Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched		mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched		mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched		mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched		pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched		mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched		Celcius
Total Cyanide (G)	0.4	G	see attatched	C	see attatched	C	see attatched		mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched		mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched		mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched		mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched		mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched		mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched		mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched		mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched		mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched		mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched		mg/L
		001		003		005			
		G:	see attatched	G:	see attatched	G:	see attatched		
		G:	see attatched	G:	see attatched	G:	see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched		mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
cis-1,3 -- Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	0	see attatched		mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L

Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Toluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched		see attatched		see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched		see attatched		see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844		see attatched		see attatched		see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L

You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 5112262-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2020 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		7		8		9		10		
Dates on Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
Times at Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
PARAMETER		Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	LIMIT	E	131,850	E	950	E	23,500	E	131,850	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
		006		007		008		009		
		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L

Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Toluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L

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INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 5112262-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2020 (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		11			
Dates on Which Samples Were Collected		G:	see attatched		
		C:	see attatched		
Times at Which Samples Were Collected		G:	see attatched		
		C:	see attatched		
PARAMETER					Units
Flow	LIMIT	E	131,850		Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched		mg/L
Chemical Oxygen Demand (C)	****	C	see attatched		mg/L
Total Suspended Solids (C)	****	C	see attatched		mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched		pH
Temperature, °C (G)	60	G	see attatched		mg/L
Oil & Grease (G)	200	G	see attatched		Celcius
Total Cyanide (G)	0.4	C	see attatched		mg/L
Cadmium (C)	0.7	C	see attatched		mg/L
Chromium (C)	5	C	see attatched		mg/L
Copper (C)	2.7	G	see attatched		mg/L
Lead (C)	0.4	G	see attatched		mg/L
Nickel (C)	2.3	G	see attatched		mg/L
Selenium (C)	0.2	C	see attatched		mg/L
Silver (C)	0.5	C	see attatched		mg/L
Thallium (C)	***	C	see attatched		mg/L
Zinc (C)	3	C	see attatched		mg/L
Mercury (C)	0.01	C	see attatched		mg/L
		009			
		G:	see attatched		
		G:	see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched		mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched		mg/L
1,1,2- Trichloroethane	5.844	G	see attatched		mg/L
1,1-Dichloroethane	5.844	G	see attatched		mg/L
1,1-Dichloroethene	5.844	G	see attatched		mg/L
1,2- Dichlorobenzene	5.844	G	see attatched		mg/L
1,2-Dichloroethane	5.844	G	see attatched		mg/L
1,2- Dichloropropane	5.844	G	see attatched		mg/L
1,3- Dichlorobenzene	5.844	G	see attatched		mg/L
1,4- Dichlorobenzene	5.844	G	see attatched		mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched		mg/L
Acrolein	5.844	G	see attatched		mg/L
Acrylonitrile	5.844	G	see attatched		mg/L

Benzene	5.844	G	see attatched		mg/L
Bromodichloromethane	5.844	G	see attatched		mg/L
Bromoform	5.844	G	see attatched		mg/L
Bromomethane	5.844	G	see attatched		mg/L
Carbon tetrachloride	5.844	G	see attatched		mg/L
Chlorobenzene	5.844	G	see attatched		mg/L
Chloroethane	5.844	G	see attatched		mg/L
Chloroform	5.844	G	see attatched		mg/L
Chloromethane	5.844	G	see attatched		mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched		mg/L
Dibromochloromethane	5.844	G	see attatched		mg/L
Ethylbenzene	5.844	G	see attatched		mg/L
Methylene chloride	5.844	G	see attatched		mg/L
Tetrachloroethene	5.844	G	see attatched		mg/L
Toluene	5.844	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844	G	see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched		mg/L
Anthracene	5.844	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched		mg/L
Isophorone	5.844	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched		mg/L
Phenol	5.844	G	see attatched		mg/L
Pyrene	5.844	G	see attatched		mg/L
Aldrin	5.844	G	see attatched		mg/L
Cholordane	5.844	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched		mg/L

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735/314-602-8551
	Signature Date: 08/21/2020

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

August 11, 2020
Lab No. 20E-1350
Invoice No. 273750

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/21/20 09:25
WASTEWATER COMPOSITE, SP001, 07/21/20, 09:25 –14:37

UNITS: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.36	-----	150.1	07/21/2020
Temperature, °C (G)	27.2	----	170.1	07/21/2020
Biological Oxygen Demand (C)	239	5	5210 B	07/23/2020
Chemical Oxygen Demand (C)	547	10	5220 D	07/22/2020
Total Suspended Solids (C)	37	5	160.2	07/21/2020
Oil & Grease (G)	ND	5	1664	07/22/2020
Total Cyanide (G)	ND	0.005	335.4	07/23/2020
Cadmium (C)	ND	0.01	200.7	07/23/2020
Chromium (C)	ND	0.01	200.7	07/23/2020
Copper (C)	ND	0.01	200.7	07/23/2020
Lead (C)	ND	0.01	200.7	07/23/2020
Nickel (C)	0.01	0.01	200.7	07/23/2020
Selenium (C)	ND	0.02	200.7	07/23/2020
Silver (C)	ND	0.02	200.7	07/23/2020
Thallium (C)	ND	0.02	200.7	07/23/2020
Zinc (C)	0.05	0.05	200.7	07/23/2020
Mercury (C)	ND	0.001	245.1	08/06/2020

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/21/20 09:25

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP001	MQL	ANALYTE	SP001	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	ND	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.005	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.0005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	96.0% rec.	80-120%
Surr: 4-Bromofluorobenzene	97.4% rec.	80-120%
Surr: Dibromofluoromethane	99.1% rec.	80-120%
Surr: Toluene-d8	103.9% rec.	80-120%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/23/2020

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/21/20 09:25

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP001	MQL	ANALYTE	SP001	MQL
1,2,4-Trichlorobenzene	ND	0.052	Benzidine	ND	0.367
1,2- Diphenylhydrazine	ND	0.092	Benzo(a)pyrene	ND	0.069
2,4,6-Trichlorophenol	ND	0.074	Bis(2-chloroethoxy)methane	ND	0.146
2,4-Dichlorophenol	ND	0.074	Bis(2-chloroethyl)ether	ND	0.157
2,4-Dimethylphenol	ND	0.074	Bis(2-chloroisopropyl)ether	ND	0.157
2,4-Dinitrophenol	ND	1.16	Diethyl phthalate	ND	0.052
2,4-Dinitrotoluene	ND	0.157	Hexachlorobenzene	ND	0.052
2,6-Dinitrotoluene	ND	0.052	Hexachlorocyclopentadiene	ND	0.184
2-Chlorophenol	ND	0.091	Hexachloroethane	ND	0.044
2-Nitrophenol	ND	0.099	Isophorone	ND	0.061
3,3-Dichlorobenzidine	ND	0.455	Naphthalene	ND	0.044
4,6-Dinitro-2-methylphenol	ND	0.661	Nitrobenzene	ND	0.052
4-Chloro-3-methylphenol	ND	0.083	N-Nitrosodimethylamine	ND	0.184
4-Nitrophenol	ND	0.066	Pentachlorophenol	ND	0.099
Acenaphthene	ND	0.052	Phenanthrene	ND	0.149
Acenaphthylene	ND	0.096	Phenol	ND	0.041
Anthracene	ND	0.052	Pyrene	ND	0.052
Anzobenzene	ND	0.092			

Surr: 2,4,6-Tribromophenol	70.4%rec.	28.4-122%
Surr: 2-Fluorobiphenyl	68.8% rec.	36.3-102%
Surr: 2-Fluorophenol	41.2% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	59.0% rec.	15-314%
Surr: phenol-d5	24.7% rec.	8-424%
Surr: p-Terphenyl-d14	37.4% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition.

Test Method: EPA 600/625.1 mod.
Date of Analysis: 07/28/2020
Dilution Factor: 10

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/21/20 09:25

UNITS: mg/L

PESTICIDES

ANALYTE	SP001	MQL
Aldrin	ND	0.012
Chlordane	ND	0.087
Dieldrin	ND	0.006
Gamma-BHC (Lindane)	ND	0.012
Heptachlor epoxide	ND	0.257
Surr: Decachlorobiphenyl 71.8% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 96.8% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/23/2020

Laboratory Control Sample was outside upper control limits for gamma-Chlordane. Sample results are below the reporting limit. Data is reportable.

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August 11, 2020
Lab No. 20E-1350

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/22/20, 08:34
WASTEWATER COMPOSITE, SP003, 07/22/20, 08:34–14:34

UNITS: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.26	----	150.1	07/22/2020
Temperature, °C (G)	27.7	----	170.1	07/22/2020
Biological Oxygen Demand (C)	16	5	5210 B	07/23/2020
Chemical Oxygen Demand (C)	40	10	5220 D	07/23/2020
Total Suspended Solids (C)	12	5	160.2	07/28/2020
Oil & Grease (G)	ND	5	1664	07/22/2020
Total Cyanide (G)	ND	0.005	335.4	07/24/2020
Cadmium (C)	ND	0.01	200.7	07/23/2020
Chromium (C)	ND	0.01	200.7	07/23/2020
Copper (C)	ND	0.01	200.7	07/23/2020
Lead (C)	ND	0.01	200.7	07/23/2020
Nickel (C)	ND	0.01	200.7	07/23/2020
Selenium (C)	ND	0.02	200.7	07/23/2020
Silver (C)	ND	0.02	200.7	07/23/2020
Thallium (C)	ND	0.02	200.7	07/23/2020
Zinc (C)	ND	0.05	200.7	07/23/2020
Mercury (C)	ND	0.001	245.1	08/06/2020

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/22/20, 08:34

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0026	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.005	Tetrachloroethene	ND	0.002
Acrolein	ND	0.020	Toluene	ND	0.0005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.0005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	95.8% rec.	80-120%
Surr: 4-Bromofluorobenzene	94.1% rec.	80-120%
Surr: Dibromofluoromethane	98.9% rec.	80-120%
Surr: Toluene-d8	104.8% rec.	80-120%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/23/2020

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Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/22/20, 08:34

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,2,4-Trichlorobenzene	ND	0.011	Benzidine	ND	0.074
1,2- Diphenylhydrazine	ND	0.019	Benzo(a)pyrene	ND	0.014
2,4,6-Trichlorophenol	ND	0.015	Bis(2-chloroethoxy)methane	ND	0.030
2,4-Dichlorophenol	ND	0.015	Bis(2-chloroethyl)ether	ND	0.032
2,4-Dimethylphenol	ND	0.015	Bis(2-chloroisopropyl)ether	ND	0.032
2,4-Dinitrophenol	ND	0.234	Diethyl phthalate	ND	0.011
2,4-Dinitrotoluene	ND	0.032	Hexachlorobenzene	ND	0.011
2,6-Dinitrotoluene	ND	0.011	Hexachlorocyclopentadiene	ND	0.037
2-Chlorophenol	ND	0.018	Hexachloroethane	ND	0.009
2-Nitrophenol	ND	0.020	Isophorone	ND	0.012
3,3-Dichlorobenzidine	ND	0.092	Naphthalene	ND	0.009
4,6-Dinitro-2-methylphenol	ND	0.134	Nitrobenzene	ND	0.011
4-Chloro-3-methylphenol	ND	0.017	N-Nitrosodimethylamine	ND	0.037
4-Nitrophenol	ND	0.013	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.011	Phenanthrene	ND	0.030
Acenaphthylene	ND	0.019	Phenol	ND	0.008
Anthracene	ND	0.011	Pyrene	ND	0.011
Anzobenzene	ND	0.019			

Surr: 2,4,6-Tribromophenol	85.1% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	66.7% rec.	36.3-102%
Surr: 2-Fluorophenol	60.0% rec.	12.3-75.5%
Surr: Nitrobenzene-d5	58.5% rec.	15-314%
Surr: phenol-d5	38.0% rec.	8-424%
Surr: p-Terphenyl-d14	51.8% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition.

Test Method: EPA 600/625.1 mod.
Date of Analysis: 07/28/2020
Dilution Factor: 2

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/22/20, 08:34

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP003	MQL
Aldrin	ND	0.013
Chlordane	ND	0.088
Dieldrin	ND	0.006
Gamma-BHC (Lindane)	ND	0.013
Heptachlor epoxide	ND	0.259
Surr: Decachlorobiphenyl 58.0% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 96.6% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/23/2020

Laboratory Control Sample was outside upper control limits for gamma-Chlordane. Sample results are below the reporting limit. Data is reportable.

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/21/20, 08:36
WASTEWATER COMPOSITE, SP005, 07/21/20, 08:36 – 14:36

UNITS: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.29	----	150.1	07/21/2020
Temperature, °C (G)	28.5	----	170.1	07/21/2020
Biological Oxygen Demand (C)	27	5	5210 B	07/23/2020
Chemical Oxygen Demand (C)	102	10	5220 D	07/22/2020
Total Suspended Solids (C)	16	5	160.2	07/21/2020
Oil & Grease (G)	ND	5	1664	07/22/2020
Total Cyanide (G)	ND	0.005	335.4	07/24/2020
Cadmium (C)	ND	0.01	200.7	07/23/2020
Chromium (C)	ND	0.01	200.7	07/23/2020
Copper (C)	0.01	0.01	200.7	07/23/2020
Lead (C)	ND	0.01	200.7	07/23/2020
Nickel (C)	ND	0.01	200.7	07/23/2020
Selenium (C)	ND	0.02	200.7	07/23/2020
Silver (C)	ND	0.02	200.7	07/23/2020
Thallium (C)	ND	0.02	200.7	07/23/2020
Zinc (C)	ND	0.05	200.7	07/23/2020
Mercury (C)	ND	0.001	245.1	08/06/2020

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/21/20, 08:36

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	ND	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.005	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.0005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	97.3% rec.	80-120%
Surr: 4-Bromofluorobenzene	95.8% rec.	80-120%
Surr: Dibromofluoromethane	98.4% rec.	80-120%
Surr: Toluene-d8	103.0% rec.	80-120%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/23/2020

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/21/20, 08:36

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,2,4-Trichlorobenzene	ND	0.053	Benzidine	ND	0.371
1,2-Diphenylhydrazine	ND	0.093	Benzo(a)pyrene	ND	0.070
2,4,6-Trichlorophenol	ND	0.075	Bis(2-chloroethoxy)methane	ND	0.148
2,4-Dichlorophenol	ND	0.075	Bis(2-chloroethyl)ether	ND	0.159
2,4-Dimethylphenol	ND	0.075	Bis(2-chloroisopropyl)ether	ND	0.159
2,4-Dinitrophenol	ND	1.17	Diethyl phthalate	ND	0.053
2,4-Dinitrotoluene	ND	0.159	Hexachlorobenzene	ND	0.053
2,6-Dinitrotoluene	ND	0.053	Hexachlorocyclopentadiene	ND	0.186
2-Chlorophenol	ND	0.092	Hexachloroethane	ND	0.045
2-Nitrophenol	ND	0.100	Isophorone	ND	0.061
3,3-Dichlorobenzidine	ND	0.459	Naphthalene	ND	0.045
4,6-Dinitro-2-methylphenol	ND	0.668	Nitrobenzene	ND	0.053
4-Chloro-3-methylphenol	ND	0.084	N-Nitrosodimethylamine	ND	0.186
4-Nitrophenol	ND	0.067	Pentachlorophenol	ND	0.100
Acenaphthene	ND	0.053	Phenanthrene	ND	0.150
Acenaphthylene	ND	0.097	Phenol	ND	0.042
Anthracene	ND	0.053	Pyrene	ND	0.053
Anzobenzene	ND	0.093			

Surr: 2,4,6-Tribromophenol	70.9% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	56.5% rec.	36.3-102%
Surr: 2-Fluorophenol	41.4% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	47.9% rec.	15-314%
Surr: phenol-d5	33.7% rec.	8-424%
Surr: p-Terphenyl-d14	27.7% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition.

Test Method: EPA 600/625.1 mod.
Date of Analysis: 07/28/2020
Dilution Factor: 10

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Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/21/20, 08:36

UNIST: µg/L (ppb)

PESTICIDES

ANALYTE	SP005	MQL
Aldrin	ND	0.012
Chlordane	ND	0.086
Dieldrin	ND	0.006
Gamma-BHC (Lindane)	ND	0.012
Heptachlor epoxide	ND	0.254
Surr: Decachlorobiphenyl 65.2% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 93.5% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/23/2020

Laboratory Control Sample was outside upper control limits for gamma-Chlordane. Sample results are below the reporting limit. Data is reportable.

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August 11, 2020
Lab No. 20E-1350

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/21/20, 09:14
WASTEWATER COMPOSITE, SP007, 07/21/20, 09:14–15:14

UNITS: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.11	----	150.1	07/21/2020
Temperature, °C (G)	29.3	----	170.1	07/21/2020
Biological Oxygen Demand (C)	120	5	5210 B	07/23/2020
Chemical Oxygen Demand (C)	2290	40	5220 D	07/22/2020
Total Suspended Solids (C)	828	5	160.2	08/21/2020
Oil & Grease (G)	ND	5	1664	07/22/2020
Total Cyanide (G)	ND	0.005	335.4	07/24/2020
Cadmium (C)	ND	0.01	200.7	07/23/2020
Chromium (C)	0.03	0.01	200.7	07/23/2020
Copper (C)	0.07	0.01	200.7	07/23/2020
Lead (C)	0.02	0.01	200.7	07/23/2020
Nickel (C)	0.01	0.01	200.7	07/23/2020
Selenium (C)	ND	0.02	200.7	07/23/2020
Silver (C)	ND	0.02	200.7	07/23/2020
Thallium (C)	ND	0.02	200.7	07/23/2020
Zinc (C)	0.21	0.05	200.7	07/23/2020
Mercury (C)	ND	0.001	245.1	08/06/2020

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/21/20, 09:14

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0033	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.005	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.0005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	99.0% rec.	80-120%
Surr: 4-Bromofluorobenzene	98.5% rec.	80-120%
Surr: Dibromofluoromethane	100.9% rec.	80-120%
Surr: Toluene-d8	103.6% rec.	80-120%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/23/2020

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August 11, 2020
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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/21/20, 09:14

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,2,4-Trichlorobenzene	ND	0.010	Benzidine	ND	0.073
1,2- Diphenylhydrazine	ND	0.018	Benzo(a)pyrene	ND	0.014
2,4,6-Trichlorophenol	ND	0.015	Bis(2-chloroethoxy)methane	ND	0.029
2,4-Dichlorophenol	ND	0.015	Bis(2-chloroethyl)ether	ND	0.031
2,4-Dimethylphenol	ND	0.015	Bis(2-chloroisopropyl)ether	ND	0.031
2,4-Dinitrophenol	ND	0.231	Diethyl phthalate	ND	0.010
2,4-Dinitrotoluene	ND	0.031	Hexachlorobenzene	ND	0.010
2,6-Dinitrotoluene	ND	0.010	Hexachlorocyclopentadiene	ND	0.037
2-Chlorophenol	ND	0.018	Hexachloroethane	ND	0.009
2-Nitrophenol	ND	0.020	Isophorone	ND	0.012
3,3-Dichlorobenzidine	ND	0.091	Naphthalene	ND	0.009
4,6-Dinitro-2-methylphenol	ND	0.132	Nitrobenzene	ND	0.010
4-Chloro-3-methylphenol	ND	0.017	N-Nitrosodimethylamine	ND	0.037
4-Nitrophenol	ND	0.013	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.010	Phenanthrene	ND	0.030
Acenaphthylene	ND	0.019	Phenol	ND	0.008
Anthracene	ND	0.010	Pyrene	ND	0.010
Anzobenzene	ND	0.018			

Surr: 2,4,6-Tribromophenol	75.0% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	61.4% rec.	36.3-102%
Surr: 2-Fluorophenol	48.3% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	58.5% rec.	15-314%
Surr: phenol-d5	40.3% rec.	8-424%
Surr: p-Terphenyl-d14	32.3% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1 mod.
Date of Analysis: 7/23/2020
Dilution Factor: 2

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Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/21/20, 09:14

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP007	MQL
Aldrin	ND	0.122
Chlordane	ND	0.857
Dieldrin	ND	0.061
Gamma-BHC (Lindane)	ND	0.122
Heptachlor epoxide	ND	2.54
Surr: Decachlorobiphenyl 39.4% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 95.3% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition.

Test Method: EPA 600/608.3
Date of Analysis: 07/23/2020
Dilution Factor: 10

Laboratory Control Sample was outside upper control limits for gamma-Chlordane
Sample results are below the reporting limit. Data is reportable.

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/22/20 09:05
WASTEWATER COMPOSITE, SP008, 07/22/20, 09:05 –14:42

UNITS: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.60	----	150.1	07/22/2020
Temperature, °C (G)	27.3	----	170.1	07/22/2020
Biological Oxygen Demand (C)	1350	50	5210 B	07/23/2020
Chemical Oxygen Demand (C)	4500	1000	5220 D	07/23/2020
Total Suspended Solids (C)	49	5	160.2	07/28/2020
Oil & Grease (G)	7	5	1664	07/24/2020
Total Cyanide (G)	0.050	0.005	335.4	07/24/2020
Cadmium (C)	ND	0.01	200.7	07/23/2020
Chromium (C)	ND	0.01	200.7	07/23/2020
Copper (C)	0.08	0.01	200.7	07/23/2020
Lead (C)	ND	0.01	200.7	07/23/2020
Nickel (C)	0.01	0.01	200.7	07/23/2020
Selenium (C)	0.05	0.02	200.7	07/23/2020
Silver (C)	ND	0.02	200.7	07/23/2020
Thallium (C)	ND	0.02	200.7	07/23/2020
Zinc (C)	ND	0.05	200.7	07/23/2020
Mercury (C)	ND	0.001	245.1	08/06/2020

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/22/20, 09:05

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0066	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	0.0098	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.005	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.0005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	0.0057	0.002	Trichloroethene	ND	0.002
Bromoform	0.0062	0.002			

Surr: 1,2-dichloroethene-d4	94.2% rec.	80-120%
Surr: 4-Bromofluorobenzene	96.2% rec.	80-120%
Surr: Dibromofluoromethane	100.3% rec.	80-120%
Surr: Toluene-d8	103.8% rec.	80-120%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/23/2020

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/22/20, 09:05

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,2,4-Trichlorobenzene	ND	0.010	Benzidine	ND	0.073
1,2- Diphenylhydrazine	ND	0.018	Benzo(a)pyrene	ND	0.014
2,4,6-Trichlorophenol	ND	0.015	Bis(2-chloroethoxy)methane	ND	0.029
2,4-Dichlorophenol	ND	0.015	Bis(2-chloroethyl)ether	ND	0.031
2,4-Dimethylphenol	ND	0.015	Bis(2-chloroisopropyl)ether	ND	0.031
2,4-Dinitrophenol	ND	0.231	Diethyl phthalate	ND	0.010
2,4-Dinitrotoluene	ND	0.031	Hexachlorobenzene	ND	0.010
2,6-Dinitrotoluene	ND	0.010	Hexachlorocyclopentadiene	ND	0.037
2-Chlorophenol	ND	0.018	Hexachloroethane	ND	0.009
2-Nitrophenol	ND	0.020	Isophorone	ND	0.012
3,3-Dichlorobenzidine	ND	0.091	Naphthalene	ND	0.009
4,6-Dinitro-2-methylphenol	ND	0.132	Nitrobenzene	ND	0.010
4-Chloro-3-methylphenol	ND	0.017	N-Nitrosodimethylamine	ND	0.037
4-Nitrophenol	ND	0.013	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.010	Phenanthrene	ND	0.030
Acenaphthylene	ND	0.019	Phenol	ND	0.008
Anthracene	ND	0.010	Pyrene	ND	0.010
Anzobenzene	ND	0.018			

Surr: 2,4,6-Tribromophenol	81.1% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	61.6% rec.	36.3-102%
Surr: 2-Fluorophenol	45.5% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	54.4% rec.	15-314%
Surr: phenol-d5	36.3% rec.	8-424%
Surr: p-Terphenyl-d14	41.8% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition.

Test Method: EPA 600/625.1 mod.
Date of Analysis: 07/28/2020
Dilution Factor: 2

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/22/20, 09:05

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP008	MQL
Aldrin	ND	0.013
Chlordane	ND	0.088
Dieldrin	ND	0.006
Gamma-BHC (Lindane)	ND	0.013
Heptachlor epoxide	ND	0.259
Surr: Decachlorobiphenyl 77.5% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 133.8% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/23/2020

Laboratory Control Sample was outside upper control limits for gamma-Chlordane
Sample results are below the reporting limit. Data is reportable.

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/22/20, 08:54
WASTEWATER COMPOSITE, SP009, 07/22/20, 08:54 – 14:54

UNITS: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.83	----	150.1	07/22/2020
Temperature, °C (G)	23.2	----	170.1	07/22/2020
Biological Oxygen Demand (C)	173	5	5210 B	07/23/2020
Chemical Oxygen Demand (C)	375	10	5220 D	07/23/2020
Total Suspended Solids (C)	137	10	160.2	07/28/2020
Oil & Grease (G)	5	5	1664	07/24/2020
Total Cyanide (G)	ND	0.005	335.4	07/24/2020
Cadmium (C)	ND	0.01	200.7	07/23/2020
Chromium (C)	ND	0.01	200.7	07/23/2020
Copper (C)	0.01	0.01	200.7	07/23/2020
Lead (C)	0.01	0.01	200.7	07/23/2020
Nickel (C)	0.01	0.01	200.7	07/23/2020
Selenium (C)	ND	0.02	200.7	07/23/2020
Silver (C)	ND	0.02	200.7	07/23/2020
Thallium (C)	ND	0.02	200.7	07/23/2020
Zinc (C)	0.06	0.05	200.7	07/23/2020
Mercury (C)	ND	0.001	245.1	08/06/2020

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/22/20, 08:54

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	ND	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.005	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.0005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	97.3% rec.	80-120%
Surr: 4-Bromofluorobenzene	100.4% rec.	80-120%
Surr: Dibromofluoromethane	100.2% rec.	80-120%
Surr: Toluene-d8	102.0% rec.	80-120%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/23/2020

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/22/20, 08:54

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,2,4-Trichlorobenzene	ND	0.026	Benzidine	ND	0.186
1,2-Diphenylhydrazine	ND	0.046	Benzo(a)pyrene	ND	0.035
2,4,6-Trichlorophenol	ND	0.038	Bis(2-chloroethoxy)methane	ND	0.074
2,4-Dichlorophenol	ND	0.038	Bis(2-chloroethyl)ether	ND	0.079
2,4-Dimethylphenol	ND	0.038	Bis(2-chloroisopropyl)ether	ND	0.079
2,4-Dinitrophenol	ND	0.585	Diethyl phthalate	ND	0.026
2,4-Dinitrotoluene	ND	0.079	Hexachlorobenzene	ND	0.026
2,6-Dinitrotoluene	ND	0.026	Hexachlorocyclopentadiene	ND	0.093
2-Chlorophenol	ND	0.046	Hexachloroethane	ND	0.022
2-Nitrophenol	ND	0.050	Isophorone	ND	0.031
3,3-Dichlorobenzidine	ND	0.230	Naphthalene	ND	0.022
4,6-Dinitro-2-methylphenol	ND	0.334	Nitrobenzene	ND	0.026
4-Chloro-3-methylphenol	ND	0.042	N-Nitrosodimethylamine	ND	0.093
4-Nitrophenol	ND	0.033	Pentachlorophenol	ND	0.050
Acenaphthene	ND	0.026	Phenanthrene	ND	0.075
Acenaphthylene	ND	0.049	Phenol	ND	0.021
Anthracene	ND	0.026	Pyrene	ND	0.026
Anzobenzene	ND	0.046			

Surr: 2,4,6-Tribromophenol	61.0% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	61.2% rec.	36.3-102%
Surr: 2-Fluorophenol	41.6% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	50.4% rec.	15-314%
Surr: phenol-d5	35.5% rec.	8-424%
Surr: p-Terphenyl-d14	45.7% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition.

Test Method: EPA 600/625.1 mod.
Date of Analysis: 07/28/2020
Dilution Factor: 5

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Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/22/20, 08:54

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP009	MQL
Aldrin	ND	0.124
Chlordane	ND	0.866
Dieldrin	ND	0.062
Gamma-BHC (Lindane)	ND	0.124
Heptachlor epoxide	ND	2.57
Surr: Decachlorobiphenyl 99.9% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 120.2% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition.

Test Method: EPA 600/608.3
Date of Analysis: 07/23/2020
Dilution Factor: 10

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/21/20, 08:55
WASTEWATER COMPOSITE, SP010, 07/2119, 08:55 – 14:55

UNITS: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.01	----	150.1	07/21/2020
Temperature, °C (G)	20.9	----	170.1	07/21/2020
Biological Oxygen Demand (C)	34	5	5210 B	07/23/2020
Chemical Oxygen Demand (C)	96	10	5220 D	07/22/2020
Total Suspended Solids (C)	72	5	160.2	07/21/2020
Oil & Grease (G)	ND	5	1664	07/24/2020
Total Cyanide (G)	ND	0.005	335.4	07/24/2020
Cadmium (C)	ND	0.01	200.7	07/23/2020
Chromium (C)	ND	0.01	200.7	07/23/2020
Copper (C)	0.18	0.01	200.7	07/23/2020
Lead (C)	ND	0.01	200.7	07/23/2020
Nickel (C)	ND	0.01	200.7	07/23/2020
Selenium (C)	ND	0.02	200.7	07/23/2020
Silver (C)	ND	0.02	200.7	07/23/2020
Thallium (C)	ND	0.02	200.7	07/23/2020
Zinc (C)	ND	0.05	200.7	07/23/2020
Mercury (C)	ND	0.001	245.1	08/06/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/21/20, 08:55

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	ND	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.005	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.0005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	98.6% rec.	80-120%
Surr: 4-Bromofluorobenzene	96.3% rec.	80-120%
Surr: Dibromofluoromethane	100.3% rec.	80-120%
Surr: Toluene-d8	102.3% rec.	80-120%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/23/2020

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/21/20, 08:55

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,2,4-Trichlorobenzene	ND	0.011	Benzidine	ND	0.074
1,2-Diphenylhydrazine	ND	0.019	Benzo(a)pyrene	ND	0.014
2,4,6-Trichlorophenol	ND	0.015	Bis(2-chloroethoxy)methane	ND	0.030
2,4-Dichlorophenol	ND	0.015	Bis(2-chloroethyl)ether	ND	0.032
2,4-Dimethylphenol	ND	0.015	Bis(2-chloroisopropyl)ether	ND	0.032
2,4-Dinitrophenol	ND	0.234	Diethyl phthalate	ND	0.011
2,4-Dinitrotoluene	ND	0.032	Hexachlorobenzene	ND	0.011
2,6-Dinitrotoluene	ND	0.011	Hexachlorocyclopentadiene	ND	0.037
2-Chlorophenol	ND	0.018	Hexachloroethane	ND	0.009
2-Nitrophenol	ND	0.020	Isophorone	ND	0.012
3,3-Dichlorobenzidine	ND	0.092	Naphthalene	ND	0.009
4,6-Dinitro-2-methylphenol	ND	0.134	Nitrobenzene	ND	0.011
4-Chloro-3-methylphenol	ND	0.017	N-Nitrosodimethylamine	ND	0.037
4-Nitrophenol	ND	0.013	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.011	Phenanthrene	ND	0.030
Acenaphthylene	ND	0.019	Phenol	ND	0.008
Anthracene	ND	0.011	Pyrene	ND	0.011
Anzobenzene	ND	0.019			

Surr: 2,4,6-Tribromophenol	69.4% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	54.6% rec.	36.3-102%
Surr: 2-Fluorophenol	44.7% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	46.3% rec.	15-314%
Surr: phenol-d5	30.4% rec.	8-424%
Surr: p-Terphenyl-d14	51.5% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition.

Test Method: EPA 600/625.1 mod.
Date of Analysis: 07/28/2020
Dilution Factor: 2

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Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/21/20, 08:55

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP010	MQL
Aldrin	ND	0.012
Chlordane	ND	0.087
Dieldrin	ND	0.006
Gamma-BHC	ND	0.012
Heptachlor epoxide	ND	0.257
Surr: Decachlorobiphenyl 83.4% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 121.3% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis 07/28/2020

Laboratory Control Sample was outside upper control limits for gamma-Chlordane
Sample results are below the reporting limit. Data is reportable.

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/22/20, 09:25
WASTEWATER COMPOSITE, SP011, 07/22/20, 09:24 – 15:24

UNITS: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.18	-----	150.1	07/22/2020
Temperature, °C (G)	21.0	-----	170.1	07/22/2020
Biological Oxygen Demand (C)	240	5	5210 B	07/23/2020
Chemical Oxygen Demand (C)	312	10	5220 D	07/23/2020
Total Suspended Solids (C)	60	5	160.2	07/28/2020
Oil & Grease (G)	ND	5	1664	07/24/2020
Total Cyanide (G)	0.010	0.005	335.4	07/24/2020
Cadmium (C)	ND	0.01	200.7	07/23/2020
Chromium (C)	ND	0.01	200.7	07/23/2020
Copper (C)	ND	0.01	200.7	07/23/2020
Lead (C)	ND	0.01	200.7	07/23/2020
Nickel (C)	0.01	0.01	200.7	07/23/2020
Selenium (C)	ND	0.02	200.7	07/23/2020
Silver (C)	ND	0.02	200.7	07/23/2020
Thallium (C)	ND	0.02	200.7	07/23/2020
Zinc (C)	ND	0.05	200.7	07/23/2020
Mercury (C)	ND	0.001	245.1	08/06/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/22/20, 09:25

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP011	MQL	ANALYTE	SP011	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	ND	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	0.0021	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	0.0023	0.002
2-Chloroethyl vinyl ether	ND	0.005	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.0005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	97.2% rec.	80-120%
Surr: 4-Bromofluorobenzene	97.5% rec.	80-120%
Surr: Dibromofluoromethane	99.1% rec.	80-120%
Surr: Toluene-d8	103.6% rec.	80-120%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/23/2020

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/22/20, 09:25

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP011	MQL	ANALYTE	SP011	MQL
1,2,4-Trichlorobenzene	ND	0.010	Benzidine	ND	0.073
1,2- Diphenylhydrazine	ND	0.018	Benzo(a)pyrene	ND	0.014
2,4,6-Trichlorophenol	ND	0.015	Bis(2-chloroethoxy)methane	ND	0.029
2,4-Dichlorophenol	ND	0.015	Bis(2-chloroethyl)ether	ND	0.031
2,4-Dimethylphenol	ND	0.015	Bis(2-chloroisopropyl)ether	ND	0.031
2,4-Dinitrophenol	ND	0.225	Diethyl phthalate	ND	0.010
2,4-Dinitrotoluene	ND	0.031	Hexachlorobenzene	ND	0.010
2,6-Dinitrotoluene	ND	0.010	Hexachlorocyclopentadiene	ND	0.036
2-Chlorophenol	ND	0.018	Hexachloroethane	ND	0.009
2-Nitrophenol	ND	0.020	Isophorone	ND	0.012
3,3-Dichlorobenzidine	ND	0.090	Naphthalene	ND	0.009
4,6-Dinitro-2-methylphenol	ND	0.131	Nitrobenzene	ND	0.010
4-Chloro-3-methylphenol	ND	0.016	N-Nitrosodimethylamine	ND	0.036
4-Nitrophenol	ND	0.013	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.010	Phenanthrene	ND	0.029
Acenaphthylene	ND	0.019	Phenol	ND	0.008
Anthracene	ND	0.010	Pyrene	ND	0.010
Anzobenzene	ND	0.018			

Surr: 2,4,6-Tribromophenol	81.4% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	68.1%rec.	36.3-102%
Surr: 2-Fluorophenol	57.4% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	59.9% rec.	15-314%
Surr: phenol-d5	39.9% rec.	8-424%
Surr: p-Terphenyl-d14	63.6% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition.

Test Method: EPA 600/625.1 mod.
Date of Analysis: 07/23/2020
Dilution Factor: 2

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 11, 2020
Lab No. 20E-1350

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/22/20, 09:25

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP011	MQL
Aldrin	ND	0.013
Chlordane	ND	0.088
Dieldrin	ND	0.006
Gamma-BHC	ND	0.013
Heptachlor epoxide	ND	0.259
Surr: Decachlorobiphenyl 71.9% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 113.6% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/23/2020

Laboratory Control Sample was outside upper control limits for gamma-Chlordane
Sample results are below the reporting limit. Data is reportable.

Steve Root, Manager
Environmental Testing

SR/jmr

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Doug Mendoza

From: Isringhausen, Livi <isringhausenm@wustl.edu>
Sent: Thursday, May 7, 2020 7:40 AM
To: Carly Reidt
Subject: 2nd quarter self monitoring report
Attachments: Self Monitoring Report 2nd 2020.pdf

Carly- Hopefully this finds you safe and healthy. Attached is WUSM's report. Let me know if you need anything else.

Thanks!

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St. Louis
Environmental Health & Safety

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO. 63110
Monitoring Period: 2020 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO. 63110
Monitoring Period: 2020 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2020
Lab No. 20E-0800
Invoice No. 270403

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 04/27/2020, 08:58
WASTEWATER COMPOSITE, SP001, 04/27/2020, 08:58-14:58

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.52	----	150.1	04/27/20
Temperature, °C (G)	17.3	----	170.1	04/27/20
Biological Oxygen Demand (C)	72	5	5210 B	04/29/20
Chemical Oxygen Demand (C)	147	10	5220 D	05/01/20
Total Suspended Solids (C)	65	5	160.2	04/30/20
Oil & Grease (G)	9	5	1664	04/30/20
Silver (C)	<0.05	0.05	200.7	04/29/20
Total Phenol (G)	0.008	0.005	420.4	05/04/20

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2020
Lab No. 20E-0800
Invoice No. 270403

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 04/28/2020, 08:27
WASTEWATER COMPOSITE, SP003, 04/28/2020, 08:27-14:27

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.64	----	150.1	04/28/20
Temperature, °C (G)	29.1	----	170.1	04/28/20
Biological Oxygen Demand (C)	53	5	5210 B	04/29/20
Chemical Oxygen Demand (C)	90	10	5220 D	05/01/20
Total Suspended Solids (C)	34	5	160.2	04/30/20
Oil & Grease (G)	12	5	1664	04/30/20
Silver (C)	<0.05	0.05	200.7	04/29/20
Total Phenol (G)	<0.005	0.005	420.4	05/04/20

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

May 5, 2020
Lab No. 20E-0800
Invoice No. 270403

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 04/27/2020, 08:18
WASTEWATER COMPOSITE, SP005, 04/27/2020, 08:18-14:18

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.83	----	150.1	04/27/20
Temperature, °C (G)	23.9	----	170.1	04/27/20
Biological Oxygen Demand (C)	40	5	5210 B	04/29/20
Chemical Oxygen Demand (C)	83	10	5220 D	05/01/20
Total Suspended Solids (C)	78	5	160.2	04/30/20
Oil & Grease (G)	< 5	5	1664	04/30/20
Silver (C)	<0.05	0.05	200.7	04/29/20
Total Phenol (G)	<0.005	0.005	420.4	05/04/20

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

May 5, 2020
Lab No. 20E-0800
Invoice No. 270403

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 04/27/2020, 08:47
WASTEWATER COMPOSITE, SP007, 04/27/2020, 08:47-14:47

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.78	----	150.1	04/27/20
Temperature, °C (G)	22.3	----	170.1	04/27/20
Biological Oxygen Demand (C)	355	5	5210 B	04/29/20
Chemical Oxygen Demand (C)	543	10	5220 D	05/01/20
Total Suspended Solids (C)	361	10	160.2	04/30/20
Oil & Grease (G)	18	5	1664	04/30/20
Silver (C)	0.09	0.05	200.7	04/29/20
Total Phenol (G)	0.008	0.005	420.4	05/04/20

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2020
Lab No. 20E-0800
Invoice No. 270403

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 04/28/2020, 08:51
WASTEWATER COMPOSITE, SP008, 04/28/2020, 08:51-14:51

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.69	----	150.1	04/28/20
Temperature, °C (G)	21.4	----	170.1	04/28/20
Biological Oxygen Demand (C)	103	5	5210 B	04/29/20
Chemical Oxygen Demand (C)	165	10	5220 D	05/01/20
Total Suspended Solids (C)	39	5	160.2	04/30/20
Oil & Grease (G)	20	5	1664	04/30/20
Silver (C)	<0.05	0.05	200.7	04/29/20
Total Phenol (G)	0.019	0.005	420.4	05/04/20

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2020
Lab No. 20E-0800
Invoice No. 270403

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 04/28/2020, 08:44
WASTEWATER COMPOSITE, 04/28/2020, 08:44-14:44

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.80	----	150.1	04/28/20
Temperature, °C (G)	21.8	----	170.1	04/28/20
Biological Oxygen Demand (C)	1358	5	5210 B	04/29/20
Chemical Oxygen Demand (C)	471	10	5220 D	05/05/20
Total Suspended Solids (C)	291	10	160.2	04/30/20
Oil & Grease (G)	72	5	1664	04/30/20
Silver (C)	<0.05	0.05	200.7	04/29/20
Total Phenol (G)	0.065	0.005	420.4	05/04/20

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2020
Lab No. 20E-0800
Invoice No. 270403

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 04/27/2020, 08:32
WASTEWATER COMPOSITE, SP010, 04/27/2020, 08:32-14:32

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.57	----	150.1	04/27/20
Temperature, °C (G)	19.7	----	170.1	04/27/20
Biological Oxygen Demand (C)	545	25	5210 B	04/29/20
Chemical Oxygen Demand (C)	662	10	5220 D	05/01/20
Total Suspended Solids (C)	142	5	160.2	04/30/20
Oil & Grease (G)	14	5	1664	04/30/20
Silver (C)	<0.05	0.05	200.7	04/29/20
Total Phenol (G)	<0.005	0.005	420.4	05/04/20

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2020
Lab No. 20E-0800
Invoice No. 270403

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 04/28/2020, 09:12
WASTEWATER COMPOSITE, SP011, 04/28/2020, 09:12-15:12

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.20	----	150.1	04/28/20
Temperature, °C (G)	21.8	----	170.1	04/28/20
Biological Oxygen Demand (C)	4550	125	5210 B	04/29/20
Chemical Oxygen Demand (C)	10100	1000	5220 D	05/01/20
Total Suspended Solids (C)	28	5	160.2	04/30/20
Oil & Grease (G)	11	5	1664	04/30/20
Silver (C)	<0.05	0.05	200.7	04/29/20
Total Phenol (G)	0.024	0.005	420.4	05/04/20

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/ed

Steve Root, Manager
Environmental Testing

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature: Date: 05/06/2020

93

Christopher J. Bulmahn WASHINGTON UNIV. MED SCHOOL

1024353000

From: Carly Reidt
Sent: Friday, June 12, 2020 2:31 PM
To: Christopher J. Bulmahn
Subject: SNC Avoidance Resamples - Other Companies on List

Hi Chris!

Last one from me. Wash U Med School and Responsible Container, based on my calculations, do not need any resamples. I touched base w/ Metal Container a couple weeks ago regarding their MA exceedance, and they told me they collected enough additional samples already to make up for it (so I didn't contact them again. If I need to let me know). Dave touched base with Nature's Bakery and left a voicemail.

-Carly

Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

March 17, 2020

Ms. Carly Reidt
Associate Engineer
Metropolitan Sewer District
Division of Environmental Compliance
10 East Grand Ave.
St. Louis, MO 63147-2913

RE: Notice of Violation 3/10/2020- Wastewater Discharge Permit NO. 1024353000-2
For premise at: 660 S. Euclid Avenue, Saint Louis, MO 63110

Dear ~~Mr. Gill:~~

With regard to the Notice of Violation sent March 10, 2020 the following is WUSM's report of corrective actions.

Corrective action for discharge above limitations for Oil and Grease at Sample Point 003: Washington University School of Medicine has determined that the source of oil and grease found in the sample on January 22, 2020 at 9:11 am is the Barnes Hospital kitchen area in the Renard Building. This building is a shared building with both WUSM and Barnes Hospital activities. The flow from this building according to our map indicates that it would be included in WUSM Sample Point 003. Barnes Environmental Health and Safety indicated that they are training their kitchen employees on the proper maintenance of the grease traps. WUSM has offered assistance in the training.

If you should need any additional information please feel free to contact me at 314-362-6735.

Sincerely,

Livi Isringhausen
Environmental Compliance Manager

RECEIVED
MAR 19 2020
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Cc:
Linda Vishino EH&S
File

Washington University in St. Louis, Campus Box 8229, 660 South Euclid, St. Louis, MO 63110
(314) 362-6735, Fax (314) 362-1095, isringhausenm@wusm.wustl.edu, http://ehs.wustl.edu/

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

March 16, 2020

Livi Isringhausen
Environmental Compliance Manager
WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid Ave.
Campus Box 8229
St. Louis, MO 63110

RE: Approval to Discharge 10% Formalin Solution

Dear Ms. Isringhausen:

Thank you for your February 25, 2020 letter requesting approval to discharge a 10% formalin solution from the Medical School Campus at 660 S. Euclid Ave. to the MSD sanitary sewer system. We understand that the Washington University School of Medicine will discharge approximately 100 gallons of wastewater per week at each sample point. We have completed our review of the information you provided. Based on this information, MSD grants approval of this discharge to the MSD sanitary sewer system.

There are a number of factors that can affect discharge compliance with federal and MSD standards. The user has responsibility to maintain the facility in compliance with those limits. This letter does not allow discharge of any material that would cause a violation of federal standards or the ordinance.

Thank you for your assistance in helping us to comply with state and federal regulations. If you have any questions, please contact me at 314.436.8709.

Sincerely,
METROPOLITAN ST LOUIS SEWER DISTRICT

Jason Gill
Environmental Engineering Associate

File: Washington University Medical School

ec: Doug Mendoza
Carly Reidt

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

March 10, 2020

Livi Isringhausen
WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid Ave., Campus Box 8229
St. Louis, MO 63110

RE: NOTICE OF VIOLATIONS – WASTEWATER DISCHARGE PERMIT NO. 1024353000 - 2
For premise at: 660 S Euclid Avenue, Saint Louis, MO 63110

Dear Ms. Isringhausen:

Thank you for your February 25, 2020 phone call advising us of the results of recent wastewater discharge sampling. Unfortunately, as we discussed, your 1st quarter 2020 self-monitoring report included the following violation:

VIOLATIONS OF DISCHARGE LIMITATIONS:

DATE	TIME	SAMPLE POINT	SAMPLE TYPE	POLLUTANT	DISCHARGE LIMIT	LIMIT TYPE	VALUE FOUND
01-22-20	0911	003	Grab	Oil & Grease (T)	200 mg/L	IN	864 mg/L**

003 = Flow from S in MH N of building 14 in drive, 6' S of O2 tanks
(T) = Total substance
mg/L = milligrams per liter
IN = Instantaneous

See the enclosure for an explanation of the asterisks appearing in the Value Found column.

REQUIRED ACTION/RESPONSE:

As a part of the 1st quarter submittal, you included three additional oil & grease sample results which showed a return to compliance. As a result, you will not need to include additional samples with your response to the items below.

1. Submit a report of corrective actions, to ensure compliance with MSD limitations for oil & grease. In the report:

   a. Include actions addressing all pollutants in violation
   b. Indicate which corrective actions are initiated and which are still to come

   For any actions that include power washing, water jetting, or otherwise cleaning of sampling structures and sewer laterals or lines, the flushed out material and associated wash water must be captured and disposed of properly. The material and associated wash water must not be flushed out into the sewer system.

2. Refer to the enclosure for additional information on:

a. Potential enforcement actions should noncompliance continue
b. The meaning of the asterisks that appear in the Value Found column above
c. Percentages applicable to Significant Noncompliance, when planning for additional sampling

3. Submit your response no later than **April 13, 2020.**

Thank you for helping us to comply with state and federal regulations. If you have any questions, please contact me at 314.436.8762.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Carly Reidt

Carly Reidt
Associate Engineer

Enclosures: SNC enclosure, SP map

ec: Doug Mendoza
Jason Gill

SIGNIFICANT NONCOMPLIANCE ENCLOSURE

Federal regulations require the Metropolitan St. Louis Sewer District to track the compliance status of all industrial users with the terms of federal pretreatment regulation 40 CFR 403, MSD Ordinance 15048, and the user's industrial wastewater discharge permit. MSD must identify those users who are in significant noncompliance, as defined in the ordinance. We do this on a semi-annual basis.

MSD's Enforcement Response Plan requires MSD to:

- Make an annual publication in the St. Louis Post-Dispatch of all users in SNC
- Initiate additional enforcement action, if necessary to secure timely and effective compliance

The plan is an integral part of MSD's pretreatment program, and is approved by Missouri Department of Natural Resources.

Asterisks appearing next to the "Value Found" results in the accompanying notice:

none This is the first violation within the **January 1 through June 30** review period.

* This is at least the second violation within the **January 1 through June 30** review period.

** The violation equals or exceeds the limit multiplied by a "technical review criteria" factor. The TRC for most pollutants is 1.2. For oil & grease, the TRC is 1.4.

*** Both of the conditions above exist.

SNC is calculated separately for each pollutant at each sample point for each limit type. Your facility will be in SNC if any of the following conditions apply:

1. 66% or more of results within this six-month period exceed the limit by any amount (chronic)
2. 33% or more of results within this six-month period equal or exceed the limit multiplied by the TRC

Example scenarios:

Date	Sample Point	Pollutant	Discharge Limit	Limit Type	Value Found
March 23	901	Zinc (T)	2.61 mg/L	DM	2.92 mg/L
March 23	901	Zinc (T)	1.48 mg/L	MA	2.92 mg/L **

As of June 30:
Zinc at sample point 901 – DM = 100% chronic – **SNC**
Zinc at sample point 901 – DM = 0% TRC – NOT SNC
Zinc at sample point 901 – MA = 100% chronic – **SNC**
Zinc at sample point 901 – MA = 100% TRC – **SNC**

Date	Sample Point	Pollutant	Discharge Limit	Limit Type	Value Found
March 23	901	Zinc (T)	2.61 mg/L	DM	2.92 mg/L
March 23	901	Zinc (T)	1.48 mg/L	MA	2.92 mg/L **
June 14	901	Zinc (T)	2.61 mg/L	DM	1.65 mg/L (not a violation)
June 14	901	Zinc (T)	1.48 mg/L	MA	1.65 mg/L *

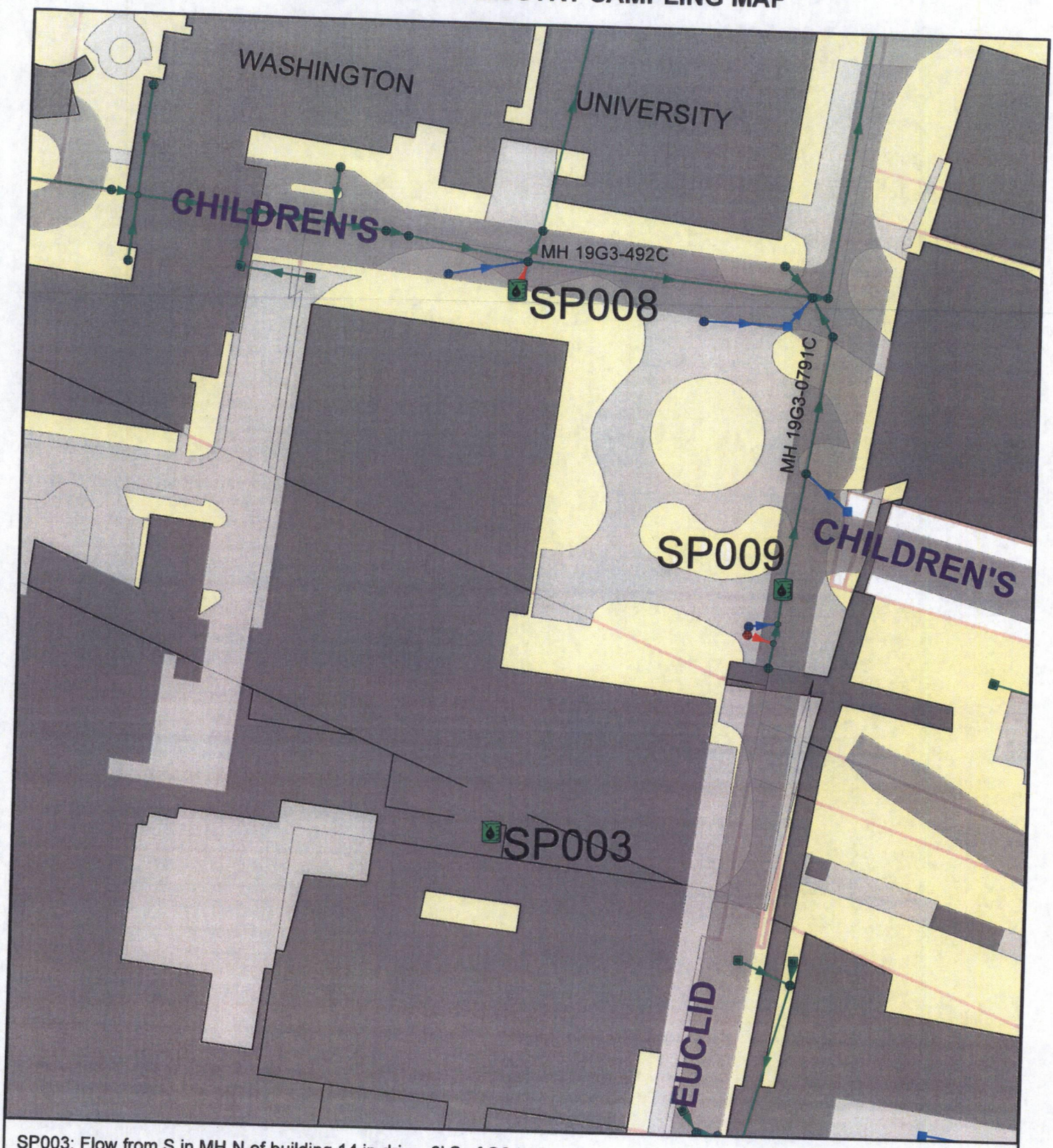
As of June 30:
Zinc at sample point 901 – DM = 50% chronic – NOT SNC
Zinc at sample point 901 – DM = 0% TRC – NOT SNC
Zinc at sample point 901 – MA = 50% chronic – NOT SNC
Zinc at sample point 901 – MA = 50% TRC – **SNC**

As soon as possible, you must correct the problem that caused the violations identified in the accompanying notice.

After you correct the problem, MSD strongly advises you to collect and analyze additional samples for the problem pollutants within the current six-month review period. This period ends on June 30. Multiple samples may be necessary to avoid SNC.

Under federal regulations, you must submit the results of all analyses you perform to MSD. MSD will use the results, along with the results of all MSD samples, to determine whether we must list your facility as in SNC.

MSD-DEC INDUSTRY SAMPLING MAP



SP003: Flow from S in MH N of building 14 in drive, 6' S of O2 tanks
SP008: MH in plaza 27' W, 27' N of NE bldg corner
SP009: MH in E plaza 36' N, 27' E of S NE bldg

Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000
Premise Address: 660 S. Euclid
Zip: 63110
Drawn By: MSK
Date: 9/29/15

WASHINGTON UNIVERSITY MEDICAL SCHOOL

Carly Reidt

1029353000

From: Isringhausen, Livi <isringhausenm@wustl.edu>
Sent: Tuesday, February 25, 2020 2:47 PM
To: Carly Reidt
Subject: Trying again
Attachments: Self Monitoring Report 1st 2020.pdf

Helps if I attach the entire file.

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St.Louis
Environmental Health & Safety

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2020 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

MSD 044753

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2020 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 30, 2020
Lab No. 20E-0152
Invoice No. 266923

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 01/21/2020, 09:25
WASTEWATER COMPOSITE, SP001, 01/21/2020, 09:25 - 15:25

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.90	----	150.1	01/21/2020
Temperature, °C (G)	14.9	----	170.1	01/21/2020
Biological Oxygen Demand (C)	246	5	5210 B	01/23/2020
Chemical Oxygen Demand (C)	359	10	5220 D	01/23/2020
Total Suspended Solids (C)	275	5	160.2	01/23/2020
Oil & Grease (G)	18	5	1664	01/24/2020
Silver (C)	< 0.05	0.05	200.7	01/28/2020
Total Phenol (G)	0.015	0.005	420.4	01/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

January 30, 2020
Lab No. 20E-0152

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 01/22/2020, 09:11
WASTEWATER COMPOSITE, SP003, 01/22/2020, 09:11- 15:11

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.28	----	150.1	01/22/2020
Temperature, °C (G)	18.1	----	170.1	01/22/2020
Biological Oxygen Demand (C)	339	5	5210 B	01/23/2020
Chemical Oxygen Demand (C)	502	10	5220 D	01/23/2020
Total Suspended Solids (C)	117	5	160.2	01/23/2020
Oil & Grease (G)	864	5	1664	01/24/2020
Silver (C)	0.12	0.05	200.7	01/28/2020
Total Phenol (G)	0.031	0.005	420.4	01/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

January 30, 2020
Lab No. 20E-0152

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 01/21/2020, 08:40
WASTEWATER COMPOSITE, SP005, 01/21/2020, 08:40 - 14:40

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.87	----	150.1	01/21/2020
Temperature, °C (G)	20.9	----	170.1	01/21/2020
Biological Oxygen Demand (C)	156	5	5210 B	01/23/2020
Chemical Oxygen Demand (C)	260	10	5220 D	01/23/2020
Total Suspended Solids (C)	112	5	160.2	01/23/2020
Oil & Grease (G)	22	5	1664	01/24/2020
Silver (C)	< 0.05	0.05	200.7	01/28/2020
Total Phenol (G)	0.082	0.005	420.4	01/29/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

January 30, 2020
Lab No. 20E-0152

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 01/21/2020, 09:15
WASTEWATER COMPOSITE, SP007, 01/21/2020, 09:15 - 15:15

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.84	----	150.1	01/21/2020
Temperature, °C (G)	31.5	----	170.1	01/21/2020
Biological Oxygen Demand (C)	506	5	5210 B	01/23/2020
Chemical Oxygen Demand (C)	630	10	5220 D	01/23/2020
Total Suspended Solids (C)	276	5	160.2	01/23/2020
Oil & Grease (G)	< 5	5	1664	01/24/2020
Silver (C)	< 0.05	0.05	200.7	01/28/2020
Total Phenol (G)	0.007	0.005	420.4	01/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

January 30, 2020
Lab No. 20E-0152

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 01/22/2020, 09:01
WASTEWATER COMPOSITE, SP008, 01/22/2020, 09:01 - 15:01

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.30	----	150.1	01/22/2020
Temperature, °C (G)	21.0	----	170.1	01/22/2020
Biological Oxygen Demand (C)	128	5	5210 B	01/23/2020
Chemical Oxygen Demand (C)	249	10	5220 D	01/23/2020
Total Suspended Solids (C)	129	100	160.2	01/23/2020
Oil & Grease (G)	123	5	1664	01/24/2020
Silver (C)	< 0.05	0.05	200.7	01/28/2020
Total Phenol (G)	0.192	0.005	420.4	01/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

January 30, 2020
Lab No. 20E-0152

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 01/22/2020, 08:50
WASTEWATER COMPOSITE, 01/22/2020, 08:50 - 14:50

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	6.96	----	150.1	01/22/2020
Temperature, °C (G)	18.8	----	170.1	01/22/2020
Biological Oxygen Demand (C)	330	25	5210 B	01/23/2020
Chemical Oxygen Demand (C)	930	10	5220 D	01/23/2020
Total Suspended Solids (C)	248	15	160.2	01/23/2020
Oil & Grease (G)	39	5	1664	01/24/2020
Silver (C)	< 0.05	0.05	200.7	01/28/2020
Total Phenol (G)	0.035	0.005	420.4	01/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

January 30, 2020
Lab No. 20E-0152

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 01/21/2020, 09:00
WASTEWATER COMPOSITE, SP010, 01/21/2020, 09:00 - 15:00

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.86	----	150.1	01/21/2020
Temperature, °C (G)	14.0	----	170.1	01/21/2020
Biological Oxygen Demand (C)	338	25	5210 B	01/23/2020
Chemical Oxygen Demand (C)	380	100	5220 D	01/23/2020
Total Suspended Solids (C)	643	5	160.2	01/23/2020
Oil & Grease (G)	42	5	1664	01/24/2020
Silver (C)	< 0.05	0.05	200.7	01/28/2020
Total Phenol (G)	0.019	0.005	420.4	01/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

January 30, 2020
Lab No. 20E-0152

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 01/22/2020, 08:30
WASTEWATER COMPOSITE, SP011, 01/22/2020, 08:30-14:30

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.39	----	150.1	01/22/2020
Temperature, °C (G)	19.2	----	170.1	01/22/2020
Biological Oxygen Demand (C)	148	25	5210 B	01/23/2020
Chemical Oxygen Demand (C)	411	40	5220 D	01/23/2020
Total Suspended Solids (C)	368	10	160.2	01/23/2020
Oil & Grease (G)	< 5	5	1664	01/24/2020
Silver (C)	< 0.05	0.05	200.7	01/28/2020
Total Phenol (G)	0.081	0.005	420.4	01/27/2020

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/jmr

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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SEE REVERSE FOR CONDITIONS

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature: Date: 2/25/2020

Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

February 10, 2020
Lab No. 20E-0278
Invoice No. 267299
Page 1 of 1

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE: Waste Water Grab, SP003, Collected 02/07/2020, 09:00

SUBJECT: Oil & Grease Analysis

METHOD: EPA 1664

UNITS: Milligrams Per Liter (mg/L)

RESULTS:

ANALYTE	RESULTS	MQL	DATE OF ANALYSIS
Oil & Grease (HEM)	11	5	02/0U/2020

HEM: Hexane Extractable Material

MQL: Minimum Quantitative Limit

SR/jmr

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

February 24, 2020
Lab No. 20E-0373
Invoice No. 267871

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE: Waste Water Grab, SP003, Collected 02/20/2020, 08:15

SUBJECT: Oil & Grease Analysis

METHOD: EPA 1664

UNITS: Milligrams Per Liter (mg/L)

RESULTS:

ANALYTE	RESULTS	MQL	DATE OF ANALYSIS
Oil & Grease (HEM)	15	5	2/21/20

HEM: Hexane Extractable Material

MQL: Minimum Quantitative Limit

SR/jlb

Steve Root, Manager
Environmental Testing

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

February 24, 2020
Lab No. 20E-0386
Invoice No. 267870

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE: Waste Water Grab, SP003, Collected 02/21/2020, 08:10

SUBJECT: Oil & Grease Analysis

METHOD: EPA 1664

UNITS: Milligrams Per Liter (mg/L)

RESULTS:

ANALYTE	RESULTS	MQL	DATE OF ANALYSIS
Oil & Grease (HEM)	81	5	2/21/20

HEM: Hexane Extractable Material

MQL: Minimum Quantitative Limit

SR/jlb

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

Washington University Medical School
10243530-00

February 25, 2020

Jason Gill
Environmental Engineering Associate
Metropolitan St. Louis Sewer District
10 E Grand
St. Louis, MO 63147-2913

RE: Request for Approval to discharge of 10% formalin at all sample points

Dear Mr. Gill:

Washington University School of Medicine (WUSM) is requesting to discharge a 10% Formalin solution (remainder is water) into the MSD sanitary sewer system at the Medical School Campus located at 660 South Euclid Ave in St. Louis, MO. We estimate that WUSM will discharge approximately 100 gallons of wastewater per week at each sample point.

If you have any questions or would like to discuss any of the above comments, please do not hesitate to contact me. I can be reached by telephone at 314-362-6735 or by email at isringhausenm@wusm.wustl.edu.

Best regards,

Livi Isringhausen
Environmental Compliance Manager

Cc:
Linda Vishino

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FEB 27 2020
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Washington University in St. Louis, Campus Box 8229, 660 South Euclid, St. Louis, MO 63110
(314) 362-6735, Fax (314) 362-1095, isringhausenm@wusm.wustl.edu, http://ehs.wustl.edu/

Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

Washington University Medical School
10243530-00

December 12, 2019

Mr. Jason Gill
Environmental Engineering Associate
Metropolitan Sewer District
Division of Environmental Compliance
10 East Grand Ave.
St. Louis, MO 63147-2913

RE: Notice of Violation 10/18/2019- Sewer Use Ordinance No. 15048
For premise at: 660 S. Euclid

Dear Mr. Gill:

With regard to the Notice of Violation sent October 18, 2019, the following is WUSM's last report of tests showing compliance with MSD reporting requirements.

A Report of Analysis is attached for grab sample taken on December 2, 2019 during normal hours of operations showing sample point 010 to be in compliance.

If you should need any additional information please feel free to contact me at 314-362-6735.

Sincerely,

Livi Isringhausen
Environmental Compliance Manager

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Washington University in St. Louis, Campus Box 8229, 660 South Euclid, St. Louis, MO 63110
(314) 362-6735, Fax (314) 362-1095, isringhausenm@wusm.wustl.edu, http://ehs.wustl.edu/

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

Attention: Livi Isringhausen

December 12, 2019
Lab No. 19E-2284
Invoice No. 265147
PO No. 2938539H

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 12/02/2019, 13:53

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	ND	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	97.7 % rec.	79.6-118%
Surr: 4-Bromofluorobenzene	99.8 % rec.	83.9-115%
Surr: Dibromofluoromethane	100.2 % rec.	84.9-113%
Surr: Toluene-d8	95.0 % rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 12/04/2019
Dilution Factor: 1

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DIVISION OF ENVIRONMENTAL COMPLIANCE

MEMBER ACIL

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

December 12, 2019
Lab No. 19E-2284

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 12/02/2019, 13:53

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,2,4-Trichlorobenzene	ND	0.006	Benzidine	ND	0.041
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.008
2,4,6-Trichlorophenol	ND	0.008	Bis(2-chloroethoxy)methane	ND	0.016
2,4-Dichlorophenol	ND	0.008	Bis(2-chloroethyl)ether	ND	0.017
2,4-Dimethylphenol	ND	0.008	Bis(2-chloroisopropyl)ether	ND	0.017
2,4-Dinitrophenol	ND	0.129	Diethyl phthalate	ND	0.006
2,4-Dinitrotoluene	ND	0.017	Hexachlorobenzene	ND	0.006
2,6-Dinitrotoluene	ND	0.006	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.005
2-Nitrophenol	ND	0.011	Isophorone	ND	0.007
3,3-Dichlorobenzidine	ND	0.051	Naphthalene	ND	0.005
4,6-Dinitro-2-methylphenol	ND	0.073	Nitrobenzene	ND	0.006
4-Chloro-3-methylphenol	ND	0.009	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.007	Pentachlorophenol	ND	0.011
Acenaphthene	ND	0.006	Phenanthrene	ND	0.017
Acenaphthylene	ND	0.011	Phenol	0.006	0.005
Anthracene	ND	0.006	Pyrene	ND	0.006
Anzobenzene	ND	0.010			

Surr: 2,4,6-Tribromophenol	113.1 %rec.	28.4-122%
Surr: 2-Fluorobiphenyl	96.8 % rec.	36.3-102%
Surr: 2-Fluorophenol	56.3 % rec.	12.3-72.5%
Surr: Nitrobenzene-d5	85.1 % rec.	15-314%
Surr: phenol-d5	42.7 %rec.	8-424%
Surr: p-Terphenyl-d14	71.2 % rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625.1
Date of Analysis: 12/10/2019
Dilution Factor: 1

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DEC 16 2019
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Steve Root, Manager
Environmental Testing

SR/jmr

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Metropolitan Saint Louis Sewer District
2350 Market Street
Saint Louis, Missouri 63103-2555

INDUSTRIAL WASTEWATER DISCHARGE PERMIT 1024353000

for **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
at
660 S. Euclid Ave., Campus Box 8229
St. Louis, MO 63110

ANNUAL PERMIT FEE NOTICE

For permits in effect on 10/01/19.

Explanation of Charges

Fee for Pretreatment Program Discharge Permit covering the period October 1, 2019 through September 30, 2020 issued in accordance with the Metropolitan St. Louis District Fee Ordinances for the location at **660 Euclid Ave.**

Base charge @ $180.00 per permit			$ 180.00
Volume charge @$0.86 per average daily Ccf	455.88	Ccfs	$ 392.06
Sample Point Charge @$120.00 per sample point	8	points	$ 960.00
		Total Fee Due:	**$ 1,532.06**

For inquiries about the Annual Permit Fee, please call 314-436-8710.
For inquiries about payment of the fee, please call 1-866-281-5737.

CB

Christopher J. Bulmahn

From: Jason Gill
Sent: Monday, December 2, 2019 1:50 PM
To: Christopher J. Bulmahn
Subject: Resamples needed to avoid SNC - Washington University Medical School [1024353000]

Chris,

On 12/2/19 I spoke with Livi Isringhausen to remind her of the number of samples they need by 12/31/19 to avoid SNC for the current six-month review period. For their TRC TTO violation, they took one good sample with their 3rd qtr. SMR as well as an additional good TTO-only sample on 11/1/19. Livi said that they have taken a third TTO sample the week of November 18th, but the results are still pending.

Thanks,

Jason

Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

Washington University Medical School
10243530-00

November 14, 2019

Mr. Jason Gill
Environmental Engineering Associate
Metropolitan Sewer District
Division of Environmental Compliance
10 East Grand Ave.
St. Louis, MO 63147-2913

RE: Notice of Violation 10/18/2019- Sewer Use Ordinance No. 15048
For premise at: 660 S. Euclid

Dear Mr. Gill:

With regard to the Notice of Violation sent October 18, 2019, the following is WUSM's report of corrective actions and Reports of Tests showing compliance with MSD reporting requirements.

Corrective action for discharge above limitations for Total Toxic Organics at Sample Point 010:
Washington University School of Medicine has determined that the source of the Total Toxic Organics found in the wastewater discharge is a result of an Environmental Compliance Division employee cleaning and rinsing a RCRA empty container. The container that was being cleaned and rinsed met the definition of RCRA empty as defined in 40 CFR §261.7. On October 24, 2019, the staff of the Environmental Compliance Division attended a review training session to clarify the requirements of emptying a container.

A Report of Analysis is attached for grab sample taken on November 7, 2019 during normal hours of operations showing sample point 010 to be in compliance. A second grab sample will be pulled the week on November 18, 2019. A Report of Analysis will be sent as soon as it is available.

If you should need any additional information please feel free to contact me at 314-362-6735.

Sincerely,

Livi Isringhausen
Environmental Compliance Manager

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DIVISION OF
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Washington University in St. Louis, Campus Box 8229, 660 South Euclid, St. Louis, MO 63110
(314) 362-6735, Fax (314) 362-1095, isringhausenm@wusm.wustl.edu, http://ehs.wustl.edu/

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

November 7, 2019
Lab No. 19E-2073
Invoice No. 264006

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 11/01/2019, 08:35

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	ND	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	94.2% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	95.3% rec.	83.9-115%
Surr: Dibromofluoromethane	102.3% rec.	84.9-113%
Surr: Toluene-d8	94.0% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 11/04/2019
Dilution Factor: 1

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

November 7, 2019
Lab No. 19E-2073

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 11/01/2019, 08:35

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,2,4-Trichlorobenzene	ND	0.006	Benzidine	ND	0.040
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.008
2,4,6-Trichlorophenol	ND	0.008	Bis(2-chloroethoxy)methane	ND	0.016
2,4-Dichlorophenol	ND	0.008	Bis(2-chloroethyl)ether	ND	0.017
2,4-Dimethylphenol	ND	0.008	Bis(2-chloroisopropyl)ether	ND	0.017
2,4-Dinitrophenol	ND	0.126	Diethyl phthalate	ND	0.006
2,4-Dinitrotoluene	ND	0.017	Hexachlorobenzene	ND	0.006
2,6-Dinitrotoluene	ND	0.006	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.005
2-Nitrophenol	ND	0.011	Isophorone	ND	0.007
3,3-Dichlorobenzidine	ND	0.050	Naphthalene	ND	0.005
4,6-Dinitro-2-methylphenol	ND	0.072	Nitrobenzene	ND	0.006
4-Chloro-3-methylphenol	ND	0.009	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.007	Pentachlorophenol	ND	0.011
Acenaphthene	ND	0.006	Phenanthrene	ND	0.016
Acenaphthylene	ND	0.010	Phenol	ND	0.004
Anthracene	ND	0.006	Pyrene	ND	0.006
Anzobenzene	ND	0.010			

Surr: 2,4,6-Tribromophenol	84.3 %rec.	28.4-122%
Surr: 2-Fluorobiphenyl	78.1 % rec.	36.3-102%
Surr: 2-Fluorophenol	57.8 % rec.	12.3-72.5%
Surr: Nitrobenzene-d5	75.2% rec.	15-314%
Surr: phenol-d5	38.5%rec.	8-424%
Surr: p-Terphenyl-d14	75.3% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 11/06/2019
Dilution Factor: 1

SR/jmr

Steve Root, Manager
Environmental Testing

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Invoice

Invoice Number: 264006

Invoice Date: 11/7/19

Page: 1

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314-531-8080

Sold To:

WASHINGTON UNIVERSITY
CAMPUS BOX 8229
660 SOUTH EUCLID AVE.
ST. LOUIS, MO 63110

Report To:

LIVI ISRINGHAUSEN

Customer I.D.	Customer P.O.:	Lab No. :	Terms:
WASH91		19E2073	Net 30 Days

Quantity:	Item I.D.:	Description:	Unit Price / Net Price:	
1.00	EOS	ORGANIC ANALYSIS	550.00	550.00
		SAMPLE ID		
		1 EACH WATER SAMPLE 010 11012019 0835		

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DIVISION OF ENVIRONMENTAL COMPLIANCE

Total: $550.00

WASHINGTON UNIVERSITY MEDICAL SCHOOL 1026353000

Carly Reidt

From: Isringhausen, Livi <isringhausenm@wustl.edu>
Sent: Friday, November 1, 2019 12:53 PM
To: Carly Reidt
Subject: Self Monitoring Report 4th
Attachments: Self monitoring Report (4th) 2019.pdf

Good afternoon- Here is WUSM 4th Quarter Monitoring Report. Let me know if you need anything else.

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St. Louis
Environmental Health & Safety

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2019 (Jan-Mar) (Apr-June) (July-Sept) √ (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2019 (Jan-Mar) (Apr-June) (July-Sept) √ (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

October 30, 2019
Lab No. 19E-1937
Invoice No. 263671

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 10/15/2019, 09:35
WASTEWATER COMPOSITE, SP001, 10/15/2019 09:35 - 15:35

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.34	----	150.1	10/15/2019
Temperature, °C (G)	24.2	----	170.1	10/15/2019
Biological Oxygen Demand (C)	294	5	5210 B	10/17/2019
Chemical Oxygen Demand (C)	598	10	5220 D	10/21/2019
Total Suspended Solids (C)	152	5	160.2	10/17/2019
Oil & Grease (G)	15	5	1664	10/18/2019
Silver (C)	< 0.05	0.05	200.7	10/21/2019
Total Phenol (G)	0.052	0.005	420.4	10/18/2019

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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[illegible]

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Attention: Livi Isringhausen

October 30, 2019
Lab No. 19E-1937

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 10/15/2019, 09:32
WASTEWATER COMPOSITE, SP003, 10/15/2019, 09:32- 15:32

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.76	---	150.1	10/16/2019
Temperature, °C (G)	20.5	---	170.1	10/16/2019
Biological Oxygen Demand (C)	109	5	5210 B	10/17/2019
Chemical Oxygen Demand (C)	144	10	5220 D	10/21/2019
Total Suspended Solids (C)	92	5	160.2	10/17/2019
Oil & Grease (G)	8	5	1664	10/18/2019
Silver (C)	<0.05	0.05	200.7	10/21/2019
Total Phenol (G)	<0.005	0.005	420.4	10/18/2019

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

October 30, 2019
Lab No. 19E-1937

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 10/15/19, 08:49
WASTEWATER COMPOSITE, SP005, 10/15/19, 08:49 - 14:49

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.61	----	150.1	10/15/2019
Temperature, °C (G)	23.6	----	170.1	10/15/2019
Biological Oxygen Demand (C)	124	5	5210 B	10/17/2019
Chemical Oxygen Demand (C)	138	10	5220 D	10/21/2019
Total Suspended Solids (C)	142	5	160.2	10/17/2019
Oil & Grease (G)	< 5	5	1664	10/18/2019
Silver (C)	< 0.05	0.05	200.7	10/21/2019
Total Phenol (G)	< 0.005	0.005	420.4	10/18/2019

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

October 30, 2019
Lab No. 19E-1937

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 10/15/2019, 09:19
WASTEWATER COMPOSITE, SP007, 10/15/2019, 09:19 - 15:19

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.32	----	150.1	10/15/2019
Temperature, °C (G)	36.5	----	170.1	10/15/2019
Biological Oxygen Demand (C)	371	5	5210 B	10/17/2019
Chemical Oxygen Demand (C)	760	10	5220 D	10/21/2019
Total Suspended Solids (C)	222	5	160.2	10/17/2019
Oil & Grease (G)	< 5	5	1664	10/18/2019
Silver (C)	< 0.05	0.05	200.7	10/21/2019
Total Phenol (G)	0.033	0.005	420.4	10/18/2019

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

October 30, 2019
Lab No. 19E-1937

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 10/15/2019, 09:14
WASTEWATER COMPOSITE, SP008, 10/15/2019, 09:14 - 15:14

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.62	----	150.1	10/16/2019
Temperature, °C (G)	20.6	----	170.1	10/16/2019
Biological Oxygen Demand (C)	383	5	5210 B	10/17/2019
Chemical Oxygen Demand (C)	640	10	5220 D	10/21/2019
Total Suspended Solids (C)	258	100	160.2	10/17/2019
Oil & Grease (G)	9	5	1664	10/18/2019
Silver (C)	< 0.05	0.05	200.7	10/21/2019
Total Phenol (G)	0.009	0.005	420.4	10/18/2019

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

October 30, 2019
Lab No. 19E-1937

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 10/15/2019, 09:05
WASTEWATER COMPOSITE, 10/15/2019, 09:05 - 15:05

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.45	----	150.1	10/16/2019
Temperature, °C (G)	20.3	----	170.1	10/16/2019
Biological Oxygen Demand (C)	312	25	5210 B	10/17/2019
Chemical Oxygen Demand (C)	556	10	5220 D	10/21/2019
Total Suspended Solids (C)	153	15	160.2	10/17/2019
Oil & Grease (G)	12	5	1664	10/18/2019
Silver (C)	< 0.05	0.05	200.7	10/21/2019
Total Phenol (G)	0.061	0.005	420.4	10/18/2019

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

October 30, 2019
Lab No. 19E-1937

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 10/15/2019, 09:04
WASTEWATER COMPOSITE, SP010, 10/15/2019, 09:04 - 15:04

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.13	----	150.1	10/15/2019
Temperature, °C (G)	21.0	----	170.1	10/15/2019
Biological Oxygen Demand (C)	725	25	5210 B	10/17/2019
Chemical Oxygen Demand (C)	1610	100	5220 D	10/21/2019
Total Suspended Solids (C)	807	5	160.2	10/17/2019
Oil & Grease (G)	27	5	1664	10/18/2019
Silver (C)	< 0.05	0.05	200.7	10/21/2019
Total Phenol (G)	0.157	0.005	420.4	10/18/2019

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

October 30, 2019
Lab No. 19E-1937

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 10/15/2019, 08:46
WASTEWATER COMPOSITE, SP011, 10/15/2019, 08:46 - 14:46

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.66	----	150.1	10/16/2019
Temperature, °C (G)	20.2	----	170.1	10/16/2019
Biological Oxygen Demand (C)	740	25	5210 B	10/17/2019
Chemical Oxygen Demand (C)	1316	40	5220 D	10/21/2019
Total Suspended Solids (C)	463	10	160.2	10/17/2019
Oil & Grease (G)	20	5	1664	10/18/2019
Silver (C)	<0.05	0.05	200.7	10/21/2019
Total Phenol (G)	0.078	0.005	420.4	10/18/2019

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/jmr

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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SEE REVERSE FOR CONDITIONS

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature: Date: 11/1/2019

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

October 18, 2019

Livi Isringhausen
WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid
St. Louis, MO 63110

RE: NOTICE OF VIOLATION – SEWER USE ORDINANCE NO. 15048
For premise at: 660 S. Euclid

Dear Ms. Isringhausen:

As I had mentioned during my voicemail I left you on October 16, 2019, MSD personnel recently collected and analyzed samples of wastewater discharged to the MSD system from the premise above. Unfortunately, we identified the following violation:

VIOLATION OF DISCHARGE LIMITATIONS:

DATE	TIME	SAMPLE POINT	SAMPLE TYPE	POLLUTANT	DISCHARGE LIMIT	LIMIT TYPE	VALUE FOUND
10-11-19	1022	010	Grab	TTO	5.844 mg/L	IN	7.0835 mg/L**

SP010: 6" trapped vent, 10'W, 36'N of EHS SW bldg corner **(T) = Total substance**
mg/L = milligrams per liter **IN = Instantaneous**

See the enclosure for an explanation of the asterisks appearing in the Value Found column.

Please note that the Total Toxic Organics result for the above sample was calculated from summation of the methylene chloride, chloroform, 1,2-dichloroethane, & ethylbenzene results. The Total Toxic Organics numerical value does not include any volatile organics which were less than the detection level, and does not include the value for xylene since it is not part of the regulatory definition of Total Toxic Organics.

POTENTIAL VIOLATION OF DISCHARGE PROHIBITIONS:

Certain volatile chemical compounds were found at elevated levels as indicated below:

DATE	TIME	SAMPLE POINT	SAMPLE TYPE	POLLUTANT	GAS/VAPOR TOXIC SCREENING LEVEL	VALUE FOUND
10-11-19	1022	010	Grab	Methylene Chloride	1.05 mg/L	6.930 mg/L

In addition, certain other volatile chemical compounds were found at elevated levels as indicated below:

DATE	TIME	SAMPLE POINT	SAMPLE TYPE	POLLUTANT	GAS/VAPOR TOXIC SCREENING LEVEL	VALUE FOUND
10-11-19	1022	010	Grab	Chloroform	0.41 mg/L	0.0898 mg/L
10-11-19	1022	010	Grab	1,2-dichloroethane	1.05 mg/L	0.0530 mg/L
10-11-19	1022	010	Grab	Ethylbenzene	1.59 mg/L	0.0107 mg/L
10-11-19	1022	010	Grab	Xylene	1.74 mg/L	0.0621 mg/L

SP010: 6" trapped vent, 10'W, 36'N of EHS SW bldg.. corner **mg/L = milligrams per liter**

Any other toxic organic chemicals which are or may be present in your discharge returned analytical values less than the minimum reporting level.

Wastewater discharges are prohibited under Ordinance 12559, Article V, Section One.A.8 if they cause or contribute to emissions of toxic gases, vapors, or fumes into the sewer atmosphere at levels in excess of applicable exposure levels. The presence of volatile chemical compounds at concentrations above the screening levels can result in the generation of toxic gases or vapors in the sewer atmosphere. Such conditions pose a serious threat to the health and safety of MSD personnel and to other users of the sewer system. If several compounds are present at elevated levels, the potential for the generation of toxic gases or vapors increases due to possible additive and/or synergistic effects.

REQUIRED ACTION/RESPONSE:

1. Submit a report of corrective actions, to ensure compliance with MSD limitations for TTO & methylene chloride. In the report:

    a. Indicate which corrective actions are initiated and which are still to come
    b. Include plans for additional sampling to verify a return to compliance

2. Submit all additional sampling results to MSD. Sample collection must occur as follows:

    a. Sample at the identified sampling points
    b. Collect Grab samples for methylene chloride
    c. For "potential violations of discharge limitations" only, you need only analyze for the individual toxic organic chemical compounds that were above the gas/vapor toxic screening level.
    d. Take samples at times representative of normal operations

3. Refer to the enclosure for additional information on:

    a. Potential enforcement actions should noncompliance continue
    b. The meaning of the asterisks that appear in the Value Found column above
    c. Percentages applicable to Significant Noncompliance, when planning for additional sampling

4. Submit your response no later than **November 18, 2019**.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

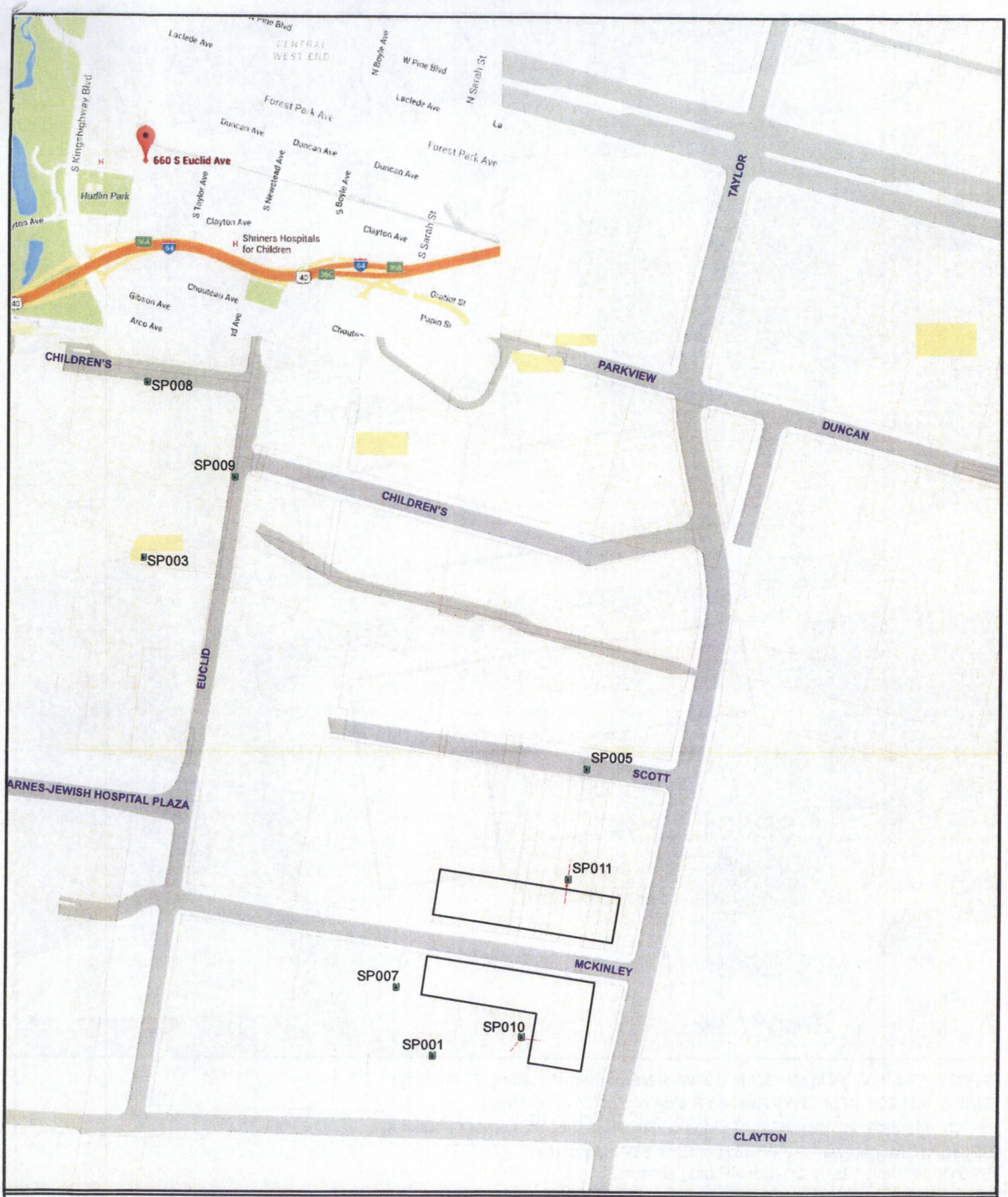
Jason Gill
Environmental Engineering Associate

Enclosures: SNC enclosure, SP maps

ec: Doug Mendoza
Carly Reidt

File: WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000]

MSD-DEC INDUSTRY SAMPLING MAP

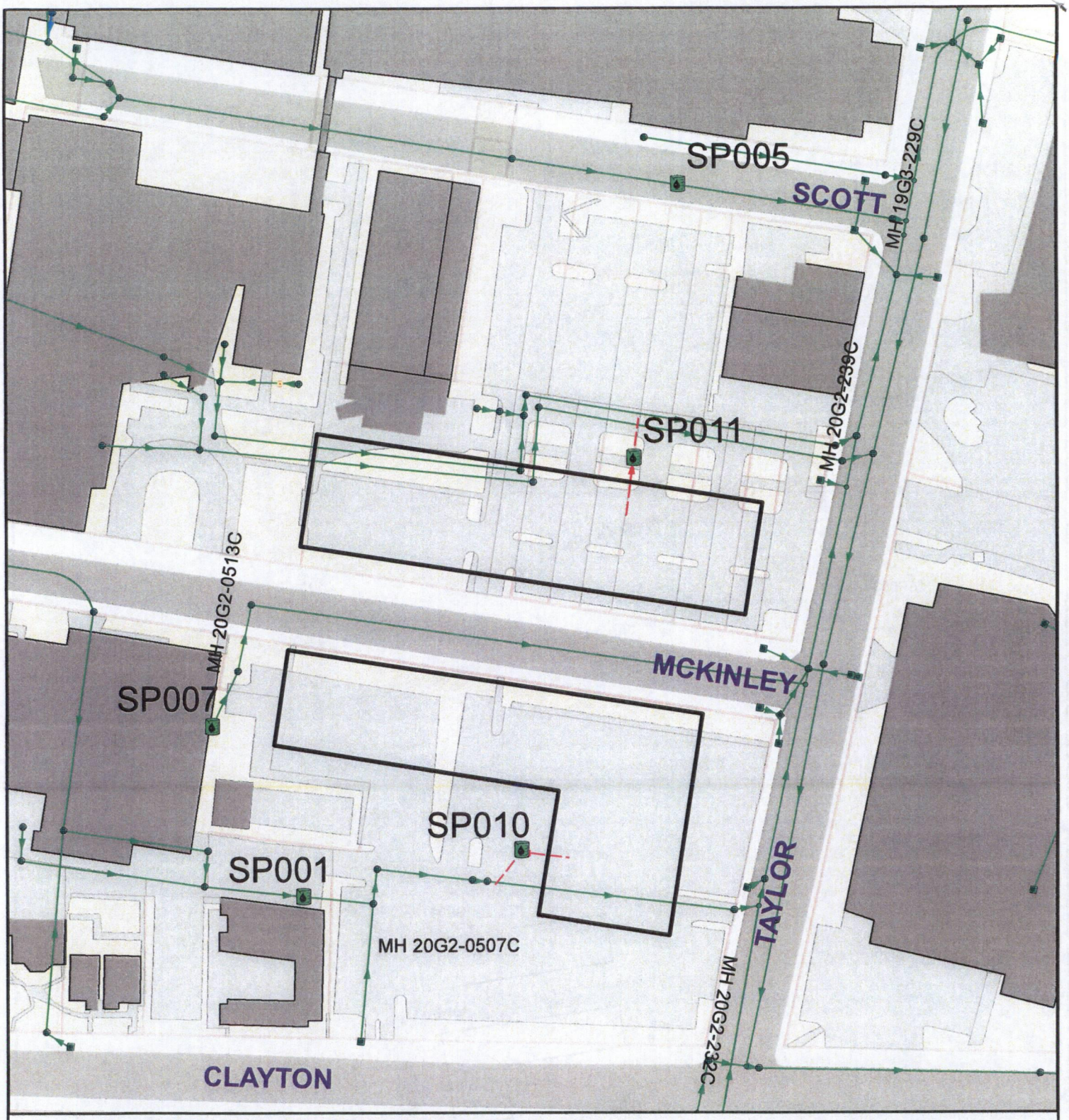


Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

Premise Address: 660 S. Euclid Drawn By: MSK

Zip: 63110 Date: 9/29/15

MSD-DEC INDUSTRY SAMPLING MAP



SP001: Flow from W in MH 30' N, 10' W of NE corner of building 27 (in alley)
SP005: MH 200' W of Taylor Ave. on S side of Scott Ave. in street
SP007: Manhole in sidewalk E of Bldg 63; 111' N, 2' E of SE corner of building
SP010: 6" trapped vent, 10'W, 36'N of EHS SW bldg corner
SP011: 12" vent 125'W, 30'N of NE bldg corner

Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

Premise Address: 660 S. Euclid Drawn By: MSK

Zip: 63110 Date: 9/29/15

SIGNIFICANT NONCOMPLIANCE ENCLOSURE

Federal regulations require the Metropolitan St. Louis Sewer District to track the compliance status of all industrial users with the terms of federal pretreatment regulation 40 CFR 403, MSD Ordinance 12559, and the user's industrial wastewater discharge permit. MSD must identify those users who are in significant noncompliance, as defined in the ordinance. We do this on a semi-annual basis.

MSD's Enforcement Response Plan requires MSD to:

- Make an annual publication in the St. Louis Post-Dispatch of all users in SNC
- Initiate additional enforcement action, if necessary to secure timely and effective compliance

The plan is an integral part of MSD's pretreatment program, and is approved by Missouri Department of Natural Resources.

Asterisks appearing next to the "Value Found" results in the accompanying notice:

none This is the first violation within the **July 1 through December 31** review period.

* This is at least the second violation within the **July 1 through December 31** review period.

** The violation equals or exceeds the limit multiplied by a "technical review criteria" factor. The TRC for most pollutants is 1.2. For oil & grease, the TRC is 1.4.

*** Both of the conditions above exist.

SNC is calculated separately for each pollutant at each sample point for each limit type. Your facility will be in SNC if any of the following conditions apply:

1. 66% or more of results within this six-month period exceed the limit by any amount (chronic)
2. 33% or more of results within this six-month period equal or exceed the limit multiplied by the TRC

Example scenarios:

Date	Sample Point	Pollutant	Discharge Limit	Limit Type	Value Found
August 23	901	Zinc (T)	2.61 mg/L	DM	2.92 mg/L
August 23	901	Zinc (T)	1.48 mg/L	MA	2.92 mg/L **

As of Dec. 31:
Zinc at sample point 901 – DM = 100% chronic – **SNC**
Zinc at sample point 901 – DM = 0% TRC – NOT SNC
Zinc at sample point 901 – MA = 100% chronic – **SNC**
Zinc at sample point 901 – MA = 100% TRC – **SNC**

Date	Sample Point	Pollutant	Discharge Limit	Limit Type	Value Found
August 23	901	Zinc (T)	2.61 mg/L	DM	2.92 mg/L
August 23	901	Zinc (T)	1.48 mg/L	MA	2.92 mg/L **
October 14	901	Zinc (T)	2.61 mg/L	DM	1.65 mg/L (not a violation)
October 14	901	Zinc (T)	1.48 mg/L	MA	1.65 mg/L *

As of Dec. 31:
Zinc at sample point 901 – DM = 50% chronic – NOT SNC
Zinc at sample point 901 – DM = 0% TRC – NOT SNC
Zinc at sample point 901 – MA = 50% chronic – NOT SNC
Zinc at sample point 901 – MA = 50% TRC – **SNC**

As soon as possible, you must correct the problem that caused the violations identified in the accompanying notice.

After you correct the problem, MSD strongly advises you to collect and analyze additional samples for the problem pollutants within the current six-month review period. This period ends on December 31. Multiple samples may be necessary to avoid SNC.

Under federal regulations, you must submit the results of all analyses you perform to MSD. MSD will use the results, along with the results of all MSD samples, to determine whether we must list your facility as in SNC.

PFAS Chemicals Questionnaire

In accordance with Sewer Use Ordinance 15048, the Metropolitan St. Louis Sewer District's Division of Environmental Compliance is requiring the completion of the questionnaire below on the use of per- and poly-fluoroalkyl substances (PFAS) by industrial users. Please note that your answers will be used solely for informational purposes in anticipation of potential future regulatory requirements. This questionnaire must be completed and certified by the proper Authorized Signatory for your facility, as described on Page 2.

1. **FACILITY INFORMATION:**

Name: Washington University School of Medicine 10243 3000

Street: 660 S. Euclid Campus Box 8229

City: St. Louis **State:** MO **Zip:** 63110

2. **QUESTIONNAIRE:**

A. Do you produce any products, byproducts, wastes, or other materials that you know to contain or that you would reasonably suspect to contain any PFAS chemicals? If so, please describe in detail the amounts and occurrences of such materials.

No

B. Do you purchase, otherwise obtain, or use any raw materials, commercial products, or other substances or materials that contain or that you would reasonably suspect to contain any PFAS chemicals? If so, please describe in detail the amounts and occurrences of such materials.

Yes, see attached list. These chemicals are used in laboroatories for the puprose of research. Any waste generated will be shipped off site to be disposed of by our chemical waste vendor.

C. Do you have, have any access to, or are you aware of, any information or data on the occurrence, concentration, or amount of any PFAS chemicals or constituents in water, air, solid waste, or other discharges, emissions, or waste streams from or associated with your facility? If so, please describe.

No

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DIVISION OF ENVIRONMENTAL COMPLIANCE

D. Identify the nature, source, and location of any data of which you are aware, but which is not under your possession or under your control, relating to the occurrence, concentration, or amount of PFAS chemicals or constituents identified as being present at your facility.

None

E. In addition to completing the above questions, please provide any additional information, such as lab data sheets and chain of custody forms, or other documentation, to support your responses.

3. **CERTIFICATION:**

As required by Ordinance 15048, you must sign and complete the information below.

I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations

Full Name (printed): Livi Ieringhausen Title: Environmental Compliance Manager

Signature: Date: 10/7/2019

Signatory requirements: A president, secretary, treasurer or vice president in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or the manager of one or more manufacturing, production or operation facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Return completed questionnaire to:

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

Liquids

Gallons	CAS_NUM	Chemical_description	Location	Building Code
0.003963	375-22-4	Heptafluorobutyric acid	0002:02608	0002
0.001321	375-22-4	Heptafluorbutyric acid	0004:09105	0004
0.0160634	375-22-4	heptaflrobutyric acid 99%	0004:10401	0004
0.001321	2706-90-3	Perfluoropentanoic acid 97%	0041:04123	0041

Solids

Pounds	CAS_NUM	Chemical_description	Location	Building Code
0.0110229	335-67-1	Perfluorooctanoic acid 96%	0012:00251	0012
0.0551146	335-67-1	Perfluorooctanoic acid	0020:05518	0020
0.0110229	335-67-1	Perfluorooctanoic acid 96%	0041:000000	0041
0.0110229	335-67-1	Pentadecafluorooctanoic acid	0057:00815A	0057
0.0110229	335-67-1	Perfluorooctanoic acid, 95%	0099:00145	0099

Building Name	Campus	PI
Cancer Research Building	MEDS	Janetka, James
BJC Institute of Health (BRB1)	MEDS	Bateman, Randall
BJC Institute of Health (BRB1)	MEDS	Ory, Daniel
4515 McKinley Research Building	MEDS	Gordon, Jeffrey

Building Name	Campus	PI
McDonnell Medical Sciences Building	MEDS	Li, Weikai
Clinical Sciences Research Building (CSRB)	MEDS	Evers, Alex
4515 McKinley Research Building	MEDS	Achilefu, Samuel
Southwest Tower	MEDS	Turk, John
CORTEX ONE	OFFM	Lanza, Gregory

September 26, 2019

WASHINGTON UNIVERSITY MEDICAL SCHOOL
Attn: Livi Isringhausen
660 S. Euclid Ave., Campus Box 8229
St. Louis, MO 63110

Re: Request for Information, PFAS Chemicals
For premise at: 660 S. Euclid Avenue, St. Louis, MO 63110

Dear Livi Isringhausen:

You may have recently heard news or other reports regarding per- and poly-fluoroalkyl substances (PFAS) and their impact on the environment or human health. PFAS are a group of manmade chemicals used in both industrial and everyday products. Some common examples of industries and consumer products that utilize PFAS include:

- Fire-fighting: Aqueous film-forming foams (AFFF)
- Household Goods: Non-stick cookware, cleaning products, waxes & polishes, paints
  September 19, 2019
- Paper & Packaging: Cardboard, fast food packaging
- Metal Plating
- Textiles: Waterproof outerwear, carpets & upholstery

This group also includes the more highly studied and highly publicized PFOA, PFOS, and GenX chemicals. Currently the US Environmental Protection Agency has issued a health advisory for PFOA and PFOS in drinking water. While there are no regulatory requirements for wastewater treatment at this time, the EPA has been directed to investigate these chemicals for possible development of such regulations.

The Metropolitan St. Louis Sewer District's Division of Environmental Compliance is requesting information from industrial users on the possible use, production, and discharge of per- and poly-fluoroalkyl substances (PFAS) to evaluate the potential impact of these chemicals on the MSD system. In accordance with Sewer Use Ordinance 15048, your facility is required to complete and submit the enclosed questionnaire on the use of PFAS at your facility.

This letter is to provide to you the questionnaire to be completed and submitted to MSD. This completed questionnaire is due no later than December 2, 2019. Please retain a copy for your files. Submit the completed questionnaire to the following address:

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

Please note that your answers on the questionnaire are solely for informational purposes in anticipation of potential future regulatory requirements. At this time MSD is not requiring industrial users to monitor for PFAS, or make adjustments to their facility operations. For more information on PFAS, please visit the US EPA's informational webpage at: https://www.epa.gov/pfas.

We appreciate your cooperation and support in helping us to comply with the federal regulations. If you have any questions or need assistance in completing the questionnaire, please contact me at 314.436.8762.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Carly Reidt

Carly Reidt
Associate Engineer

Enclosures: PFAS Questionnaire

ec: Doug Mendoza
Jason Gill

PFAS Chemicals Questionnaire

In accordance with Sewer Use Ordinance 15048, the Metropolitan St. Louis Sewer District's Division of Environmental Compliance is requiring the completion of the questionnaire below on the use of per- and poly-fluoroalkyl substances (PFAS) by industrial users. Please note that your answers will be used solely for informational purposes in anticipation of potential future regulatory requirements. This questionnaire must be completed and certified by the proper Authorized Signatory for your facility, as described on Page 2.

1. FACILITY INFORMATION:

Name: _____

Street: _____

City: _____ **State:** _____ **Zip:** _____

2. QUESTIONNAIRE:

A. Do you produce any products, byproducts, wastes, or other materials that you know to contain or that you would reasonably suspect to contain any PFAS chemicals? If so, please describe in detail the amounts and occurrences of such materials.

_____

_____

_____

_____

B. Do you purchase, otherwise obtain, or use any raw materials, commercial products, or other substances or materials that contain or that you would reasonably suspect to contain any PFAS chemicals? If so, please describe in detail the amounts and occurrences of such materials.

_____

_____

_____

_____

C. Do you have, have any access to, or are you aware of, any information or data on the occurrence, concentration, or amount of any PFAS chemicals or constituents in water, air, solid waste, or other discharges, emissions, or waste streams from or associated with your facility? If so, please describe.

_____

_____

_____

_____

D. Identify the nature, source, and location of any data of which you are aware, but which is not under your possession or under your control, relating to the occurrence, concentration, or amount of PFAS chemicals or constituents identified as being present at your facility.

_____

_____

_____

_____

E. In addition to completing the above questions, please provide any additional information, such as lab data sheets and chain of custody forms, or other documentation, to support your responses.

3. CERTIFICATION:

As required by Ordinance 15048, you must sign and complete the information below.

I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations

Full Name (printed): _____ Title: _____

Signature: _____ Date: _____

Signatory requirements: A president, secretary, treasurer or vice president in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or the manager of one or more manufacturing, production or operation facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Return completed questionnaire to:

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

List of Substances

Analyte	Acronym	Chemical Abstract Services Registry Number (CASRN)
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluorodecanoic acid	PFDA	335-76-2
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluorononanoic acid	PFNA	375-95-1
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorotetradecanoic acid	PFTA	376-06-7
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorobutanoic acid	PFBA	375-22-4
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorooctanesulfonamide	PFOSA	754-91-6
Fluorotelomer sulphonic acid 8:2	FtS 8:2	39108-34-4
Fluorotelomer sulphonic acid 6:2	FtS 6:2	27619-97-2
Fluorotelomer sulphonic acid 4:2	FtS 4:2	757124-72-4

WASHINGTON UNIVERSITY
MEDICAL SCHOOL
1024353000

Carly Reidt

From: Isringhausen, Livi <isringhausenm@wustl.edu>
Sent: Thursday, August 15, 2019 8:29 AM
To: Carly Reidt
Subject: Monitoring Report
Attachments: Self monitoring Report (3rd Quarter) 2019.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Carly- Here is our monitoring report for the 3rd Quarter. Let me know if you have any questions.

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

* FLOWS AT SP010 = 131,850 GPD *
SP011 = 131,850 GPD
per email from Livi on 8/26/19

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: **IDENTIFYING INFORMATION**

Company Name: Washington University School of Medicine
Permit No: 51122162-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2019 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: **ANALYTICAL RESULTS OF SELF MONITORING**

MSD Sample Point Reference Number		001		003		005		
Dates on Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
Times at Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow						Units
Flow	***	E	28,250	E	55,500	E	450,000	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	G	see attatched	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched	mg/L
		001		003		005		
		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	0	see attatched	mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L

Toluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched		see attatched		see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched		see attatched		see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844		see attatched		see attatched		see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L

You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 5112262-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2018 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		006		007		008		009		
Dates on Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
Times at Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
PARAMETER		Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	LIMIT	E	24,000	E	8,900	E	131,850	E	131,850	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
		006		007		008		009		
		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L

Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Toluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

August 5, 2019
Lab No. 19E-1353
Invoice No. 259992

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/23/19, 9:33 A.M.
WASTEWATER COMPOSITE, SP001, 07/23/19, 9:33 A.M. – 3:15 P.M.

UNITS: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.53	----	150.1	07/23/19
Temperature, °C (G)	26.6	----	170.1	07/23/19
Biological Oxygen Demand (C)	33	5	5210 B	07/24/19
Chemical Oxygen Demand (C)	84	10	5220 D	07/29/19
Total Suspended Solids (C)	136	5	160.2	08/01/19
Oil & Grease (G)	7	5	1664	07/24/19
Total Cyanide (G)	ND	0.005	335.4	07/26/19
Cadmium (C)	ND	0.01	200.7	07/26/19
Chromium (C)	ND	0.01	200.7	07/26/19
Copper (C)	0.02	0.01	200.7	07/26/19
Lead (C)	ND	0.01	200.7	07/26/19
Nickel (C)	ND	0.01	200.7	07/26/19
Selenium (C)	0.06	0.02	200.7	07/26/19
Silver (C)	ND	0.02	200.7	07/26/19
Thallium (C)	ND	0.02	200.7	07/26/19
Zinc (C)	0.18	0.05	200.7	07/26/19
Mercury (C)	ND	0.005	200.8	07/26/19

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/23/19, 9:33 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP001	MQL	ANALYTE	SP001	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	ND	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	92.9% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	97.5% rec.	83.9-115%
Surr: Dibromofluoromethane	102.9% rec.	84.9-113%
Surr: Toluene-d8	91.7% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/25/19
Dilution Factor: 1

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Attention: Livi Isringhausen

August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/23/19, 9:33 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP001	MQL	ANALYTE	SP001	MQL
1,2,4-Trichlorobenzene	ND	0.006	Benzidine	ND	0.040
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.008
2,4,6-Trichlorophenol	ND	0.008	Bis(2-chloroethoxy)methane	ND	0.016
2,4-Dichlorophenol	ND	0.008	Bis(2-chloroethyl)ether	ND	0.017
2,4-Dimethylphenol	ND	0.008	Bis(2-chloroisopropyl)ether	ND	0.017
2,4-Dinitrophenol	ND	0.126	Diethyl phthalate	ND	0.006
2,4-Dinitrotoluene	ND	0.017	Hexachlorobenzene	ND	0.006
2,6-Dinitrotoluene	ND	0.006	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.005
2-Nitrophenol	ND	0.011	Isophorone	ND	0.007
3,3-Dichlorobenzidine	ND	0.050	Naphthalene	ND	0.005
4,6-Dinitro-2-methylphenol	ND	0.072	Nitrobenzene	ND	0.006
4-Chloro-3-methylphenol	ND	0.009	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.007	Pentachlorophenol	ND	0.011
Acenaphthene	ND	0.006	Phenanthrene	ND	0.016
Acenaphthylene	ND	0.010	Phenol	ND	0.004
Anthracene	ND	0.006	Pyrene	ND	0.006
Anzobenzene	ND	0.010			

Surr: 2,4,6-Tribromophenol	50.3%rec.	28.4-122%
Surr: 2-Fluorobiphenyl	53.7% rec.	36.3-102%
Surr: 2-Fluorophenol	28.3% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	50.8% rec.	15-314%
Surr: phenol-d5	22.9% rec.	8-424%
Surr: p-Terphenyl-d14	44.0% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 07/26/19
Dilution Factor: 1

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/23/19, 9:33 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP001	MQL
Aldrin	ND	0.024
Chlordane	ND	0.168
Dieldrin	ND	0.012
Gamma-BHC (Lindane)	ND	0.024
Heptachlor epoxide	ND	0.498
Surr: Decachlorobiphenyl 36.2% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 69.9% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/26/19
Dilution Factor: 1

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Attention: Livi Isringhausen

August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/24/19, 8:30 A.M.
WASTEWATER COMPOSITE, SP003, 07/24/19, 8:30 A.M. – 2:30 P.M.

UNITS: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.95	----	150.1	07/24/19
Temperature, °C (G)	26.2	----	170.1	07/24/19
Biological Oxygen Demand (C)	76	5	5210 B	07/24/19
Chemical Oxygen Demand (C)	86	10	5220 D	07/29/19
Total Suspended Solids (C)	110	5	160.2	08/01/19
Oil & Grease (G)	ND	5	1664	07/25/19
Total Cyanide (G)	ND	0.005	335.4	07/26/19
Cadmium (C)	ND	0.01	200.7	07/26/19
Chromium (C)	ND	0.01	200.7	07/26/19
Copper (C)	0.01	0.01	200.7	07/26/19
Lead (C)	0.01	0.01	200.7	07/26/19
Nickel (C)	ND	0.01	200.7	07/26/19
Selenium (C)	0.02	0.02	200.7	07/26/19
Silver (C)	ND	0.02	200.7	07/26/19
Thallium (C)	ND	0.02	200.7	07/26/19
Zinc (C)	ND	0.05	200.7	07/26/19
Mercury (C)	ND	0.005	200.8	07/26/19

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/24/19, 8:30 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.005	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	92.8% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	99.6% rec.	83.9-115%
Surr: Dibromofluoromethane	104.2% rec.	84.9-113%
Surr: Toluene-d8	89.7% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/25/19
Dilution Factor::1

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/24/19, 8:30 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,2,4-Trichlorobenzene	ND	0.006	Benzidine	ND	0.040
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.008
2,4,6-Trichlorophenol	ND	0.008	Bis(2-chloroethoxy)methane	ND	0.016
2,4-Dichlorophenol	ND	0.008	Bis(2-chloroethyl)ether	ND	0.017
2,4-Dimethylphenol	ND	0.005	Bis(2-chloroisopropyl)ether	ND	0.017
2,4-Dinitrophenol	ND	0.126	Diethyl phthalate	ND	0.006
2,4-Dinitrotoluene	ND	0.017	Hexachlorobenzene	ND	0.006
2,6-Dinitrotoluene	ND	0.006	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.005
2-Nitrophenol	ND	0.011	Isophorone	ND	0.007
3,3-Dichlorobenzidine	ND	0.050	Naphthalene	ND	0.005
4,6-Dinitro-2-methylphenol	ND	0.072	Nitrobenzene	ND	0.006
4-Chloro-3-methylphenol	ND	0.009	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.007	Pentachlorophenol	ND	0.011
Acenaphthene	ND	0.006	Phenanthrene	ND	0.016
Acenaphthylene	ND	0.010	Phenol	ND	0.004
Anthracene	ND	0.006	Pyrene	ND	0.006
Anzobenzene	ND	0.010			

Surr: 2,4,6-Tribromophenol	69.7% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	53.8% rec.	36.3-102%
Surr: 2-Fluorophenol	27.3% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	44.0% rec.	15-314%
Surr: phenol-d5	21.7% rec.	8-424%
Surr: p-Terphenyl-d14	57.2% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625.1
Date of Analysis: 07/26/19
Dilution Factor: 1

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/24/19, 8:30 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP003	MQL
Aldrin	ND	0.024
Chlordane	ND	0.168
Dieldrin	ND	0.012
Gamma-BHC (Lindane)	ND	0.024
Heptachlor epoxide	ND	0.498
Surr: Decachlorobiphenyl 43.7% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 61.0% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/26/19
Dilution Factor: 1

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Attention: Livi Isringhausen

August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/23/19, 8:41 A.M.
WASTEWATER COMPOSITE, SP005, 07/23/19, 8:41 A.M. – 2:41 P.M.

UNITS: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.04	----	150.1	07/23/19
Temperature, °C (G)	26.9	----	170.1	07/23/19
Biological Oxygen Demand (C)	163	5	5210 B	07/24/19
Chemical Oxygen Demand (C)	264	10	5220 D	07/29/19
Total Suspended Solids (C)	72	5	160.2	08/01/19
Oil & Grease (G)	ND	5	1664	07/25/19
Total Cyanide (G)	<0.005	0.005	335.4	07/30/19
Cadmium (C)	ND	0.01	200.7	07/26/19
Chromium (C)	ND	0.01	200.7	07/26/19
Copper (C)	0.02	0.01	200.7	07/26/19
Lead (C)	ND	0.01	200.7	07/26/19
Nickel (C)	ND	0.01	200.7	07/26/19
Selenium (C)	0.04	0.02	200.7	07/26/19
Silver (C)	ND	0.02	200.7	07/26/19
Thallium (C)	ND	0.02	200.7	07/26/19
Zinc (C)	ND	0.05	200.7	07/26/19
Mercury (C)	ND	0.005	200.8	07/26/19

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/23/19, 8:41 A.M.

UNITS: mg/L

V OLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0077	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	93.3% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	97.0% rec.	83.9-115%
Surr: Dibromofluoromethane	102.1% rec.	84.9-113%
Surr: Toluene-d8	89.3% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/25/19
Dilution Factor: 1

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/23/19, 8:41 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,2,4-Trichlorobenzene	ND	0.006	Benzidine	ND	0.040
1,2-Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.008
2,4,6-Trichlorophenol	ND	0.008	Bis(2-chloroethoxy)methane	ND	0.016
2,4-Dichlorophenol	ND	0.008	Bis(2-chloroethyl)ether	ND	0.017
2,4-Dimethylphenol	ND	0.005	Bis(2-chloroisopropyl)ether	ND	0.017
2,4-Dinitrophenol	ND	0.126	Diethyl phthalate	ND	0.006
2,4-Dinitrotoluene	ND	0.017	Hexachlorobenzene	ND	0.006
2,6-Dinitrotoluene	ND	0.006	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.005
2-Nitrophenol	ND	0.011	Isophorone	ND	0.007
3,3-Dichlorobenzidine	ND	0.050	Naphthalene	ND	0.005
4,6-Dinitro-2-methylphenol	ND	0.072	Nitrobenzene	ND	0.006
4-Chloro-3-methylphenol	ND	0.009	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.007	Pentachlorophenol	ND	0.011
Acenaphthene	ND	0.006	Phenanthrene	ND	0.016
Acenaphthylene	ND	0.010	Phenol	0.021	0.004
Anthracene	ND	0.006	Pyrene	ND	0.006
Anzobenzene	ND	0.010			

Surr: 2,4,6-Tribromophenol	61.7% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	57.0% rec.	36.3-102%
Surr: 2-Fluorophenol	27.3% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	46.3% rec.	15-314%
Surr: phenol-d5	23.0% rec.	8-424%
Surr: p-Terphenyl-d14	55.4% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625.1
Date of Analysis: 07/26/19
Dilution Factor: 1

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/23/19, 8:41 A.M.

UNIST: µg/L (ppb)

PESTICIDES

ANALYTE	SP005	MQL
Aldrin	ND	0.024
Chlordane	ND	0.168
Dieldrin	ND	0.012
Gamma-BHC (Lindane)	ND	0.024
Heptachlor epoxide	ND	0.498
Surr: Decachlorobiphenyl 37.1% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 66.8% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/26/19
Dilution Factor: 1

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/23/19, 9:19 A.M.
WASTEWATER COMPOSITE, SP007, 07/23/19, 9:19 A.M. – 3:19 P.M.

UNITS: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.01	----	150.1	07/23/19
Temperature, °C (G)	32.7	----	170.1	07/23/19
Biological Oxygen Demand (C)	309	10	5210 B	07/24/19
Chemical Oxygen Demand (C)	426	10	5220 D	07/29/19
Total Suspended Solids (C)	311	5	160.2	08/01/19
Oil & Grease (G)	17	5	1664	07/25/19
Total Cyanide (G)	ND	0.005	335.4	07/26/19
Cadmium (C)	ND	0.01	200.7	07/26/19
Chromium (C)	ND	0.01	200.7	07/26/19
Copper (C)	0.06	0.01	200.7	07/26/19
Lead (C)	0.01	0.01	200.7	07/26/19
Nickel (C)	0.01	0.01	200.7	07/26/19
Selenium (C)	0.04	0.02	200.7	07/26/19
Silver (C)	ND	0.02	200.7	07/26/19
Thallium (C)	ND	0.02	200.7	07/26/19
Zinc (C)	0.07	0.05	200.7	07/26/19
Mercury (C)	ND	0.005	200.8	07/26/19

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/23/19, 9:19 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0046	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	92.7% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	96.2% rec.	83.9-115%
Surr: Dibromofluoromethane	103.0% rec.	84.9-113%
Surr: Toluene-d8	89.7% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/25/19
Dilution Factor: 1

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/23/19, 9:19 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,2,4-Trichlorobenzene	ND	0.006	Benzidine	ND	0.040
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.008
2,4,6-Trichlorophenol	ND	0.008	Bis(2-chloroethoxy)methane	ND	0.016
2,4-Dichlorophenol	ND	0.008	Bis(2-chloroethyl)ether	ND	0.017
2,4-Dimethylphenol	ND	0.005	Bis(2-chloroisopropyl)ether	ND	0.017
2,4-Dinitrophenol	ND	0.126	Diethyl phthalate	ND	0.006
2,4-Dinitrotoluene	ND	0.017	Hexachlorobenzene	ND	0.006
2,6-Dinitrotoluene	ND	0.006	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.005
2-Nitrophenol	ND	0.011	Isophorone	ND	0.007
3,3-Dichlorobenzidine	ND	0.050	Naphthalene	ND	0.005
4,6-Dinitro-2-methylphenol	ND	0.072	Nitrobenzene	ND	0.006
4-Chloro-3-methylphenol	ND	0.009	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.007	Pentachlorophenol	ND	0.011
Acenaphthene	ND	0.006	Phenanthrene	ND	0.016
Acenaphthylene	ND	0.010	Phenol	0.007	0.004
Anthracene	ND	0.006	Pyrene	ND	0.006
Anzobenzene	ND	0.010			

Surr: 2,4,6-Tribromophenol	64.7% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	61.1% rec.	36.3-102%
Surr: 2-Fluorophenol	35.5% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	52.9% rec.	15-314%
Surr: phenol-d5	27.1% rec.	8-424%
Surr: p-Terphenyl-d14	51.4% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625.1
Date of Analysis: 07/26/19
Dilution Factor: 1

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/23/19, 9:19 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP007	MQL
Aldrin	ND	0.120
Chlordane	ND	0.840
Dieldrin	ND	0.060
Gamma-BHC (Lindane)	ND	0.120
Heptachlor epoxide	ND	2.49
Surr: Decachlorobiphenyl 26.2% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 304.1% rec. (S) 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample composition

Test Method: EPA 600/608.3
Date of Analysis: 07/26/19
Dilution Factor: 5

(S): Surrogate recovery is outside control limits due to matrix interference

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/24/19, 9:03 A.M.
WASTEWATER COMPOSITE, SP008, 07/24/19, 9:03 A.M. – 2:48 P.M.

UNITS: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.80	----	150.1	07/26/19
Temperature, °C (G)	29.5	----	170.1	07/26/19
Biological Oxygen Demand (C)	140	5	5210 B	07/25/19
Chemical Oxygen Demand (C)	188	10	5220 D	07/29/19
Total Suspended Solids (C)	117	5	160.2	08/01/19
Oil & Grease (G)	14	5	1664	07/25/19
Total Cyanide (G)	0.010	0.005	335.4	07/26/19
Cadmium (C)	ND	0.01	200.7	07/26/19
Chromium (C)	ND	0.01	200.7	07/26/19
Copper (C)	0.05	0.01	200.7	07/26/19
Lead (C)	ND	0.01	200.7	07/26/19
Nickel (C)	ND	0.01	200.7	07/26/19
Selenium (C)	0.03	0.02	200.7	07/26/19
Silver (C)	ND	0.02	200.7	07/26/19
Thallium (C)	ND	0.02	200.7	07/26/19
Zinc (C)	ND	0.05	200.7	07/26/19
Mercury (C)	ND	0.005	200.8	07/26/19

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/24/19, 9:03 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0041	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	94.4% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	97.4% rec.	83.9-115%
Surr: Dibromofluoromethane	102.2% rec.	84.9-113%
Surr: Toluene-d8	90.5% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/25/19
Dilution Factor: 1

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/24/19, 9:03 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,2,4-Trichlorobenzene	ND	0.011	Benzidine	ND	0.080
1,2- Diphenylhydrazine	ND	0.020	Benzo(a)pyrene	ND	0.015
2,4,6-Trichlorophenol	ND	0.016	Bis(2-chloroethoxy)methane	ND	0.032
2,4-Dichlorophenol	ND	0.016	Bis(2-chloroethyl)ether	ND	0.034
2,4-Dimethylphenol	ND	0.016	Bis(2-chloroisopropyl)ether	ND	0.034
2,4-Dinitrophenol	ND	0.252	Diethyl phthalate	ND	0.011
2,4-Dinitrotoluene	ND	0.034	Hexachlorobenzene	ND	0.011
2,6-Dinitrotoluene	ND	0.011	Hexachlorocyclopentadiene	ND	0.040
2-Chlorophenol	ND	0.020	Hexachloroethane	ND	0.010
2-Nitrophenol	ND	0.022	Isophorone	ND	0.013
3,3-Dichlorobenzidine	ND	0.099	Naphthalene	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.144	Nitrobenzene	ND	0.011
4-Chloro-3-methylphenol	ND	0.018	N-Nitrosodimethylamine	ND	0.040
4-Nitrophenol	ND	0.014	Pentachlorophenol	ND	0.022
Acenaphthene	ND	0.011	Phenanthrene	ND	0.032
Acenaphthylene	ND	0.021	Phenol	ND	0.009
Anthracene	ND	0.011	Pyrene	ND	0.011
Anzobenzene	ND	0.020			

Surr: 2,4,6-Tribromophenol	76.0% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	60.6% rec.	36.3-102%
Surr: 2-Fluorophenol	34.9% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	51.8% rec.	15-314%
Surr: phenol-d5	27.8% rec.	8-424%
Surr: p-Terphenyl-d14	60.6% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 07/26/19
Dilution Factor: 2

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/24/19, 9:03 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP008	MQL
Aldrin	ND	0.240
Chlordane	ND	1.68
Dieldrin	ND	0.120
Gamma-BHC (Lindane)	ND	0.240
Heptachlor epoxide	ND	4.98
Surr: Decachlorobiphenyl 54.0% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 82.1% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608.3
Date of Analysis: 07/26/19
Dilution Factor: 10

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Attention: Livi Isringhausen

August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/24/19, 8:53 A.M.
WASTEWATER COMPOSITE, SP009, 07/24/19, 8:53 A.M. – 2:53 P.M.

UNITS: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.19	----	150.1	07/24/19
Temperature, °C (G)	25.4	----	170.1	07/24/19
Biological Oxygen Demand (C)	337	5	5210 B	07/25/19
Chemical Oxygen Demand (C)	387	10	5220 D	07/29/19
Total Suspended Solids (C)	245	10	160.2	08/01/19
Oil & Grease (G)	6	5	1664	07/25/19
Total Cyanide (G)	ND	0.005	335.4	07/26/19
Cadmium (C)	ND	0.01	200.7	07/26/19
Chromium (C)	ND	0.01	200.7	07/26/19
Copper (C)	0.03	0.01	200.7	07/26/19
Lead (C)	ND	0.01	200.7	07/26/19
Nickel (C)	ND	0.01	200.7	07/26/19
Selenium (C)	0.03	0.02	200.7	07/26/19
Silver (C)	ND	0.02	200.7	07/26/19
Thallium (C)	ND	0.02	200.7	07/26/19
Zinc (C)	0.06	0.05	200.7	07/26/19
Mercury (C)	ND	0.005	200.8	07/26/19

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/24/19, 8:53 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0022	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	0.0007	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	93.2 % rec.	79.6-118%
Surr: 4-Bromofluorobenzene	95.2 % rec.	83.9-115%
Surr: Dibromofluoromethane	102.7% rec.	84.9-113%
Surr: Toluene-d8	90.0 % rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/25/19
Dilution Factor: 1

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/24/19, 8:53 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,2,4-Trichlorobenzene	ND	0.011	Benzidine	ND	0.080
1,2-Diphenylhydrazine	ND	0.020	Benzo(a)pyrene	ND	0.015
2,4,6-Trichlorophenol	ND	0.016	Bis(2-chloroethoxy)methane	ND	0.032
2,4-Dichlorophenol	ND	0.016	Bis(2-chloroethyl)ether	ND	0.034
2,4-Dimethylphenol	ND	0.016	Bis(2-chloroisopropyl)ether	ND	0.034
2,4-Dinitrophenol	ND	0.252	Diethyl phthalate	ND	0.011
2,4-Dinitrotoluene	ND	0.034	Hexachlorobenzene	ND	0.011
2,6-Dinitrotoluene	ND	0.011	Hexachlorocyclopentadiene	ND	0.040
2-Chlorophenol	ND	0.020	Hexachloroethane	ND	0.010
2-Nitrophenol	ND	0.022	Isophorone	ND	0.013
3,3-Dichlorobenzidine	ND	0.099	Naphthalene	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.144	Nitrobenzene	ND	0.011
4-Chloro-3-methylphenol	ND	0.018	N-Nitrosodimethylamine	ND	0.040
4-Nitrophenol	ND	0.014	Pentachlorophenol	ND	0.022
Acenaphthene	ND	0.011	Phenanthrene	ND	0.032
Acenaphthylene	ND	0.021	Phenol	ND	0.009
Anthracene	ND	0.011	Pyrene	ND	0.011
Anzobenzene	ND	0.020			

Surr: 2,4,6-Tribromophenol	71.2% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	72.5% rec,	36.3-102%
Surr: 2-Fluorophenol	41.3% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	61.7% rec.	15-314%
Surr: phenol-d5	35.1% rec.	8-424%
Surr: p-Terphenyl-d14	67.3% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample composition

Test Method: EPA 600/625.1
Date of Analysis: 07/26/19
Dilution Factor: 2

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/24/19, 8:53 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP009	MQL
Aldrin	ND	0.240
Chlordane	ND	1.68
Dieldrin	ND	0.120
Gamma-BHC (Lindane)	ND	0.240
Heptachlor epoxide	ND	4.98
Surr: Decachlorobiphenyl 35.4% rec 5.54-150% Surr: Tetrachloro-m-xylene 201.7% rec. (S) 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608.3
Date of Analysis: 07/26/19
Dilution Factor: 10

(S): Surrogate recovery outside control limits due to matrix interference.

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/23/19, 9:00 A.M.
WASTEWATER COMPOSITE, SP010, 07/23/19, 9:00 A.M. – 3:00 P.M.

UNITS: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.38	----	150.1	07/23/19
Temperature, °C (G)	21.7	----	170.1	07/23/19
Biological Oxygen Demand (C)	67	5	5210 B	07/24/19
Chemical Oxygen Demand (C)	138	10	5220 D	07/29/19
Total Suspended Solids (C)	176	5	160.2	08/01/19
Oil & Grease (G)	ND	5	1664	07/25/19
Total Cyanide (G)	ND	0.005	335.4	07/26/19
Cadmium (C)	ND	0.01	200.7	07/26/19
Chromium (C)	ND	0.01	200.7	07/26/19
Copper (C)	0.02	0.01	200.7	07/26/19
Lead (C)	0.01	0.01	200.7	07/26/19
Nickel (C)	ND	0.01	200.7	07/26/19
Selenium (C)	0.11	0.02	200.7	07/26/19
Silver (C)	ND	0.02	200.7	07/26/19
Thallium (C)	ND	0.02	200.7	07/26/19
Zinc (C)	0.10	0.05	200.7	07/26/19
Mercury (C)	ND	0.005	200.8	07/26/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/23/19, 9:00 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0032	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	94.2% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	97.4% rec.	83.9-115%
Surr: Dibromofluoromethane	103.2% rec.	84.9-113%
Surr: Toluene-d8	91.4% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/25/19
Dilution Factor:1

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August 5, 2019
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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/23/19, 9:00 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,2,4-Trichlorobenzene	ND	0.005	Benzidine	ND	0.038
1,2-Diphenylhydrazine	ND	0.009	Benzo(a)pyrene	ND	0.007
2,4,6-Trichlorophenol	ND	0.008	Bis(2-chloroethoxy)methane	ND	0.015
2,4-Dichlorophenol	ND	0.008	Bis(2-chloroethyl)ether	ND	0.016
2,4-Dimethylphenol	ND	0.008	Bis(2-chloroisopropyl)ether	ND	0.016
2,4-Dinitrophenol	ND	0.119	Diethyl phthalate	ND	0.005
2,4-Dinitrotoluene	ND	0.016	Hexachlorobenzene	ND	0.005
2,6-Dinitrotoluene	ND	0.005	Hexachlorocyclopentadiene	ND	0.019
2-Chlorophenol	ND	0.009	Hexachloroethane	ND	0.005
2-Nitrophenol	ND	0.010	Isophorone	ND	0.006
3,3-Dichlorobenzidine	ND	0.047	Naphthalene	ND	0.005
4,6-Dinitro-2-methylphenol	ND	0.068	Nitrobenzene	ND	0.005
4-Chloro-3-methylphenol	ND	0.009	N-Nitrosodimethylamine	ND	0.019
4-Nitrophenol	ND	0.007	Pentachlorophenol	ND	0.010
Acenaphthene	ND	0.005	Phenanthrene	ND	0.015
Acenaphthylene	ND	0.010	Phenol	ND	0.004
Anthracene	ND	0.005	Pyrene	ND	0.005
Anzobenzene	ND	0.009			

Surr: 2,4,6-Tribromophenol	77.0% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	61.3%rec.	36.3-102%
Surr: 2-Fluorophenol	36.3% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	49.9% rec.	15-314%
Surr: phenol-d5	25.0% rec.	8-424%
Surr: p-Terphenyl-d14	69.2% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625.1
Date of Analysis: 07/26/19
Dilution Factor: 1

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/23/19, 9:00 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP010	MQL
Aldrin	ND	0.013
Chlordane	ND	0.088
Dieldrin	ND	0.006
Gamma-BHC	ND	0.013
Heptachlor epoxide	ND	0.262
Surr: Decachlorobiphenyl 59.2% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 100.8% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/26/19
Dilution Factor: 1

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/24/19, 9:25 A.M.
WASTEWATER COMPOSITE, SP011, 07/24/19, 9:25 A.M. – 3:25 P.M.

UNITS: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.03	----	150.1	07/26/19
Temperature, °C (G)	24.5	----	170.1	07/26/19
Biological Oxygen Demand (C)	144	20	5210 B	07/25/19
Chemical Oxygen Demand (C)	227	10	5220 D	07/29/19
Total Suspended Solids (C)	184	5	160.2	08/01/19
Oil & Grease (G)	27	5	1664	07/25/19
Total Cyanide (G)	ND	0.005	335.4	07/26/19
Cadmium (C)	ND	0.01	200.7	07/26/19
Chromium (C)	ND	0.01	200.7	07/26/19
Copper (C)	0.04	0.01	200.7	07/26/19
Lead (C)	ND	0.01	200.7	07/26/19
Nickel (C)	0.01	0.01	200.7	07/26/19
Selenium (C)	0.09	0.02	200.7	07/26/19
Silver (C)	ND	0.02	200.7	07/26/19
Thallium (C)	ND	0.02	200.7	07/26/19
Zinc (C)	0.05	0.05	200.7	07/26/19
Mercury (C)	ND	0.005	200.8	07/26/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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August 5, 2019
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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/24/19, 9:25 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP011	MQL	ANALYTE	SP011	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	ND	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	94.6% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	97.6% rec.	83.9-115%
Surr: Dibromofluoromethane	104.7% rec.	84.9-113%
Surr: Toluene-d8	89.8% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/25/19
Dilution Factor: 1

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August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/24/19, 9:25 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP011	MQL	ANALYTE	SP011	MQL
1,2,4-Trichlorobenzene	ND	0.057	Benzidine	ND	0.400
1,2- Diphenylhydrazine	ND	0.100	Benzo(a)pyrene	ND	0.075
2,4,6-Trichlorophenol	ND	0.081	Bis(2-chloroethoxy)methane	ND	0.159
2,4-Dichlorophenol	ND	0.081	Bis(2-chloroethyl)ether	ND	0.171
2,4-Dimethylphenol	ND	0.081	Bis(2-chloroisopropyl)ether	ND	0.171
2,4-Dinitrophenol	ND	1.26	Diethyl phthalate	ND	0.057
2,4-Dinitrotoluene	ND	0.171	Hexachlorobenzene	ND	0.057
2,6-Dinitrotoluene	ND	0.057	Hexachlorocyclopentadiene	ND	0.200
2-Chlorophenol	ND	0.099	Hexachloroethane	ND	0.048
2-Nitrophenol	ND	0.108	Isophorone	ND	0.066
3,3-Dichlorobenzidine	ND	0.495	Naphthalene	ND	0.048
4,6-Dinitro-2-methylphenol	ND	0.720	Nitrobenzene	ND	0.057
4-Chloro-3-methylphenol	ND	0.090	N-Nitrosodimethylamine	ND	0.200
4-Nitrophenol	ND	0.072	Pentachlorophenol	ND	0.108
Acenaphthene	ND	0.057	Phenanthrene	ND	0.162
Acenaphthylene	ND	0.105	Phenol	ND	0.045
Anthracene	ND	0.057	Pyrene	ND	0.051
Anzobenzene	ND	0.100			

Surr: 2,4,6-Tribromophenol	54.3% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	60.6% rec.	36.3-102%
Surr: 2-Fluorophenol	30.2% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	55.0% rec.	15-314%
Surr: phenol-d5	24.5% rec.	8-424%
Surr: p-Terphenyl-d14	53.6% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 07/27/19
Dilution Factor: 10

MEMBER ACIL

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

August 5, 2019
Lab No. 19E-1353

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/24/19, 9:25 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP011	MQL
Aldrin	ND	0.240
Chlordane	ND	1.68
Dieldrin	ND	0.120
Gamma-BHC	ND	0.240
Heptachlor epoxide	ND	4.98
Surr: Decachlorobiphenyl 37.1% rec.	5.54-150%	
Surr: Tetrachloro-m-xylene 46.0% rec.	13-129%	

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608.3
Date of Analysis: 07/26/19
Dilution Factor: 10

SR/jlm

Steve Root, Manager
Environmental Testing

MEMBER ACIL

AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST. NOT OFFICIAL WITHOUT THE RAISED SEAL OF ST. LOUIS TESTING LABORATORIES, INC. SEE REVERSE FOR CONDITIONS.

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 8/15/2019

Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

SR
5/21/19

May 21, 2019

DATA INTO IPACS

Mr. Scott Rehmer
Assistant Engineer
Metropolitan Sewer District
Division of Environmental Compliance
10 East Grand Ave.
St. Louis, MO 63147-2913

WASH. UNIV. MED. SCHOOL

RE: Notice of Violation 4/8/2019 - Wastewater Discharge Permit NO. 1024353000 for premise at 660 S. Euclid, St. Louis, MO 63110

Dear Mr. Rehmer:

A sampling report verifying that sample point 003 has returned to compliance is attached.

If you should need any additional information please feel free to contact me at 314-362-6735.

Sincerely,

Livi Isringhausen
Environmental Compliance Manager

RECEIVED
MAY 21 2019
DIVISION OF ENVIRONMENTAL COMPLIANCE

Washington University in St. Louis, Campus Box 8229, 660 South Euclid, St. Louis, MO 63110
(314) 362-6735, Fax (314) 362-1095, isringhausenm@wusm.wustl.edu, http://ehs.wustl.edu/

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 13, 2019
Lab No. 19E-0796
Invoice No. 256585
Page 1 of 1

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER COMPOSITE, SP003, 05/06/19, 08:52- 14:52

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
Silver (C)	<0.05	0.05	200.7	5/10/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

Steve Root, Manager
Environmental Testing

SR/mj

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

MEMBER ACIL

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SEE REVERSE FOR CONDITIONS.

SR

Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

May 13, 2019

Mr. Scott Rehmer
Assistant Engineer
Metropolitan Sewer District
Division of Environmental Compliance
10 East Grand Ave.
St. Louis, MO 63147-2913

WASH. U. MED. SCHOOL

RE: Notice of Violation 4/8/2019 - Wastewater Discharge Permit NO. 1024353000 for premise at 660 S. Euclid, St. Louis, MO 63110

Dear Mr. Rehmer:

A sampling report verifying that sample point 003 has returned to compliance is attached.

If you should need any additional information please feel free to contact me at 314-362-6735.

Sincerely,

Livi Isringhausen
Environmental Compliance Manager

SMDE INTO IPACS. SR 5/16/19

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Washington University in St. Louis, Campus Box 8229, 660 South Euclid, St. Louis, MO 63110
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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 10, 2019
Lab No. 19E-0774
Invoice No. 256531
Page 1 of 1

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER COMPOSITE, SP003, 05/01/19, 08:32- 14:32

UNITS: mg/L

1-HR

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
Silver (C)	<0.05	0.05	200.7	5/8/19

MQL: Minimum Quantitative Limit

(C)-Composite

SR/mj

Steve Root, Manager
Environmental Testing
4/24/19
Ag <0.05

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MEMBER ACIL

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Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

May 1, 2019

Mr. Scott Rehmer
Assistant Engineer
Metropolitan Sewer District
Division of Environmental Compliance
10 East Grand Ave.
St. Louis, MO 63147-2913

RE: Notice of Violation 4/8/2019 - Wastewater Discharge Permit NO: 1024353000 for premise at 660 S. Euclid, St. Louis, MO 63110

Dear Mr. Rehmer:

With regard to the Notice of Violation sent April 8, 2018, the following is Washington University School of Medicine's (WUSM's) Report of Corrective Actions to ensure compliance with Metropolitan Sewer District (MSD) reporting requirements for the violation of discharge limitations for silver at Sample Point 003. WUSM has determined that the source of the silver was the result of a malfunctioning film processor in a dark room on the 7th floor of Wohl Hospital Building. After attempts to repair the issue, the machine was removed on 4/25/2019. WUSM's Environmental Health &Safety removed the silver and all other hazardous wastes. The silver and hazardous waste are currently packaged and stored for disposal as hazardous waste. The material will be shipped to our hazardous waste disposal vendor on May 19, 2019.

A report of one of the samples verifying a return to compliance is attached. The others will be sent under separate cover by May 13, 2019.

If you should need any additional information please feel free to contact me at 314-362-6735.

Sincerely,

Livi Isringhausen
Environmental Compliance Manager

Washington University in St. Louis, Campus Box 8229, 660 South Euclid, St. Louis, MO 63110
(314) 362-6735, Fax (314) 362-1095, isringhausenm@wusm.wustl.edu, http://ehs.wustl.edu/

Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

May 1, 2019

The SMR data is included in the e-mail sent on 05-06-2019. SR

Mr. Scott Rehmer
Assistant Engineer
Metropolitan Sewer District
Division of Environmental Compliance
10 East Grand Ave.
St. Louis, MO 63147-2913

RE: Notice of Violation 4/8/2019 - Wastewater Discharge Permit NO. 1024353000 for premise at 660 S. Euclid, St. Louis, MO 63110

Dear Mr. Rehmer:

With regard to the Notice of Violation sent April 8, 2018, the following is Washington University School of Medicine's (WUSM's) Report of Corrective Actions to ensure compliance with Metropolitan Sewer District (MSD) reporting requirements for the violation of discharge limitations for silver at Sample Point 003. WUSM has determined that the source of the silver was the result of a malfunctioning film processor in a dark room on the 7th floor of Wohl Hospital Building. After attempts to repair the issue, the machine was removed on 4/25/2019. WUSM's Environmental Health &Safety removed the silver and all other hazardous wastes. The silver and hazardous waste are currently packaged and stored for disposal as hazardous waste. The material will be shipped to our hazardous waste disposal vendor on May 19, 2019.

A report of one of the samples verifying a return to compliance is attached. The others will be sent under separate cover by May 13, 2019.

If you should need any additional information please feel free to contact me at 314-362-6735.

Sincerely,

Livi Isringhausen
Environmental Compliance Manager

RECEIVED
MAY 06 2019
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Washington University in St. Louis, Campus Box 8229, 660 South Euclid, St. Louis, MO 63110
(314) 362-6735, Fax (314) 362-1095, isringhausenm@wusm.wustl.edu, http://ehs.wustl.edu/

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

May 2, 2019
Lab No. 19E-0722

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 4/24/19, 08:24
WASTEWATER COMPOSITE, SP003, 4/24/19, 08:24- 14:24

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.94	—	150.1	04/23/19
Temperature, °C (G)	20.5	—	170.1	04/23/19
Biological Oxygen Demand (C)	86	5	5210 B	04/25/19
Chemical Oxygen Demand (C)	132	10	5220 D	04/30/19
Total Suspended Solids (C)	34	5	160.2	04/29/19
Oil & Grease (G)	< 5	5	1664	04/25/19
Silver (C) ✓	< 0.05 ✓	0.05	200.7	04/26/19
Total Phenol (G)	< 0.005	0.005	420.4	04/25/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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ENVIRONMENTAL COMPLIANCE

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SEE REVERSE FOR CONDITIONS.

Washington University Medical School 1024353000

CR

Carly Reidt

From:	Scott Rehmer
Sent:	Monday, May 06, 2019 10:25 AM
To:	Isringhausen, Livi (isringhausenm@wustl.edu); Carly Reidt
Subject:	FW: WUMS - Q2 - Self Monitoring Report
Attachments:	Self monitoring Report (2nd) 2019.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Hi Livi. Thanks for submitting the quarterly report. For future reporting, please send to Carly Reidt (e-mail above); she is our new permit engineer. Her phone number is 314-436-8762. Thank you!

From: Isringhausen, Livi [mailto:isringhausenm@wustl.edu]
Sent: Monday, May 06, 2019 10:21 AM
To: Scott Rehmer
Subject: Self Monitoring Report

Good Morning! See our Second Quarter Report.

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St. Louis
Environmental Health & Safety

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2019 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2019 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5.	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION **All permittees must sign and complete the information below:** I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Print or type name of signing official: Livi Isringhausen Title: Envirnmental Compliance Manager Telephone: 314-362-6735 Signature Date: 5/6/2019

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 2, 2019
Lab No. 19E-0722
Invoice No. 256179

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 4/23/19, 9:23
WASTEWATER COMPOSITE, SP001, 4/23/19 09:23 - 15:08

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.95	----	150.1	04/23/19
Temperature, °C (G) 22.5	225	----	170.1	04/23/19
Biological Oxygen Demand (C)	90	5	5210 B	04/25/19
Chemical Oxygen Demand (C)	205	10	5220 D	04/30/19
Total Suspended Solids (C)	106	5	160.2	04/29/19
Oil & Grease (G)	6	5	1664	04/25/19
Silver (C)	< 0.05	0.05	200.7	04/26/19
Total Phenol (G)	0.012	0.005	420.4	04/25/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

May 2, 2019
Lab No. 19E-0722

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 4/24/19, 08:24
WASTEWATER COMPOSITE, SP003, 4/24/19, 08:24- 14:24

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.94	----	150.1	04/23/19
Temperature, °C (G)	20.5	----	170.1	04/23/19
Biological Oxygen Demand (C)	86	5	5210 B	04/25/19
Chemical Oxygen Demand (C)	132	10	5220 D	04/30/19
Total Suspended Solids (C)	34	5	160.2	04/29/19
Oil & Grease (G)	< 5	5	1664	04/25/19
Silver (C)	< 0.05	0.05	200.7	04/26/19
Total Phenol (G)	< 0.005	0.005	420.4	04/25/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

May 2, 2019
Lab No. 19E-0722

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 4/23/19, 08:49
WASTEWATER COMPOSITE, SP005, 4/23/19, 08:49 - 14:49

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.29	----	150.1	04/23/19
Temperature, °C (G)	21.4	----	170.1	04/23/19
Biological Oxygen Demand (C)	83	5	5210 B	04/25/19
Chemical Oxygen Demand (C)	154	10	5220 D	04/30/19
Total Suspended Solids (C)	94	5	160.2	04/29/19
Oil & Grease (G)	10	5	1664	04/25/19
Silver (C)	< 0.05	0.05	200.7	04/26/19
Total Phenol (G)	4.03	0.125	420.4	04/25/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

May 2, 2019
Lab No. 19E-0722

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 4/24/19, 09:14
WASTEWATER COMPOSITE, SP007, 4/24/19, 09:14 - 15:14

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.99	----	150.1	04/24/19
Temperature, °C (G)	27.8	----	170.1	04/24/19
Biological Oxygen Demand (C)	310	5	5210 B	04/25/19
Chemical Oxygen Demand (C)	681	10	5220 D	04/30/19
Total Suspended Solids (C)	248	5	160.2	04/29/19
Oil & Grease (G)	7	5	1664	04/25/19
Silver (C)	< 0.05	0.05	200.7	04/26/19
Total Phenol (G)	0.015	0.005	420.4	04/25/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

May 2, 2019
Lab No. 19E-0722

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 4/24/19, 08:55
WASTEWATER COMPOSITE, SP008, 4/24/19, 08:55 - 14:38

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.78	----	150.1	04/24/19
Temperature, °C (G)	26.3	----	170.1	04/24/19
Biological Oxygen Demand (C)	104	5	5210 B	04/25/19
Chemical Oxygen Demand (C)	302	10	5220 D	04/30/19
Total Suspended Solids (C)	77	10	160.2	04/29/19
Oil & Grease (G)	9	5	1664	04/25/19
Silver (C)	< 0.05	0.05	200.7	04/26/19
Total Phenol (G)	0.009	0.005	420.4	04/25/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

May 2, 2019
Lab No. 19E-0722

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 4/24/19, 08:45
WASTEWATER COMPOSITE, 4/24/19, 08:45 - 14:45

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	6.54	----	150.1	04/24/19
Temperature, °C (G)	22.6	----	170.1	04/24/19
Biological Oxygen Demand (C)	313	25	5210 B	04/25/19
Chemical Oxygen Demand (C)	764	10	5220 D	04/30/19
Total Suspended Solids (C)	294	15	160.2	04/29/19
Oil & Grease (G)	75	5	1664	04/25/19
Silver (C)	< 0.05	0.05	200.7	04/26/19
Total Phenol (G)	0.030	0.005	420.4	04/25/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

May 2, 2019
Lab No. 19E-0722

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 4/23/19, 09:00
WASTEWATER COMPOSITE, SP010, 1/29/19, 09:00 - 15:00

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.73	----	150.1	04/23/19
Temperature, °C (G)	20.6	----	170.1	04/23/19
Biological Oxygen Demand (C)	199	25	5210 B	04/25/19
Chemical Oxygen Demand (C)	339	10	5220 D	04/30/19
Total Suspended Solids (C)	420	5	160.2	04/29/19
Oil & Grease (G)	10	5	1664	04/25/19
Silver (C)	< 0.05	0.05	200.7	04/26/19
Total Phenol (G)	0.045	0.005	420.4	04/25/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

May 2, 2019
Lab No. 19E-0722

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 4/24/19, 09:08
WASTEWATER COMPOSITE, SP011, 4/24/19, 09:08 - 15:08

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.37	----	150.1	04/24/19
Temperature, °C (G)	21.9	----	170.1	04/24/19
Biological Oxygen Demand (C)	102	1250	5210 B	04/25/19
Chemical Oxygen Demand (C)	279	250	5220 D	04/30/19
Total Suspended Solids (C)	312	10	160.2	04/29/19
Oil & Grease (G)	10	5	1664	04/25/19
Silver (C)	< 0.05	0.05	200.7	04/26/19
Total Phenol (G)	0.035	0.005	420.4	04/25/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/pmc

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

April 8, 2019

Livi Isringhausen
Environmental Compliance Manager
WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid Avenue, Campus Box 8229
St. Louis, MO 63110

RE: NOTICE OF VIOLATIONS – WASTEWATER DISCHARGE PERMIT NO. 1024353000
For premise at: 660 South Euclid Avenue, 63110

Dear Ms. Isringhausen:

We have reviewed your self-monitoring for the first quarter 2019, required under the permit referenced above. Unfortunately, we have identified the following violations:

VIOLATION OF DISCHARGE LIMITATIONS:

DATE	TIME	SAMPLE POINT	SAMPLE TYPE	POLLUTANT	DISCHARGE LIMIT	LIMIT TYPE	VALUE FOUND
01/30/19	1427	003	24-hr-Comp	Silver (T)	0.5 mg/L	DA	1.72 mg/L **

SP003 = Flow from S in Manhole N of Bldg. 14, in drive, 6' S of oxygen tanks
Comp = Composite sample
mg/L = milligrams per liter
T = Total substance
DA = Daily Average
See the enclosure for an explanation of any asterisks appearing in the Value Found column.

VIOLATION OF PERMIT TERMS/CONDITIONS:

- Permit Standard Condition I.A.10 – requires you to notify MSD within one business day of becoming aware of any discharge violation.
  - Our records show that MSD received no such notification
  - Our experience shows that analytical results generally become available within one to four weeks of sampling. Upon your receipt of those results, comparison with the permit discharge limits should enable immediate identification and prompt reporting of any violations.

REQUIRED ACTION/RESPONSE:

1. Submit a report of corrective actions, to ensure compliance with MSD limitations for silver. In the report:

   a. Indicate which corrective actions are initiated and which are still to come
   b. Include plans for additional sampling to verify a return to compliance

2. Submit a report of corrective actions, to ensure compliance with MSD reporting requirements. In the report:

   a. Include actions to ensure that you will report any future self-monitoring discharge violations, within one business day of your becoming aware of them.

3. Submit all additional sampling results to MSD. Sample collection must occur as follows:

    a. Sample at the identified sampling point
    b. Collect composite samples for silver
    c. Take samples at times representative of normal operations

2. Refer to the enclosure for additional information on:

    a. Potential enforcement actions should noncompliance continue
    b. The meaning of the asterisks that appear in the Value Found column above
    c. Percentages applicable to Significant Noncompliance, when planning for additional sampling

Submit your corrective action response to this NOV no later than **May 13, 2019**.

Thank you for helping us to comply with state and federal regulations. If you have any questions, please contact me at 314.436.8756.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Scott M. Rehmer
Assistant Engineer

Enclosure: SNC enclosure, Sample Point Map

cc: Doug Mendoza
Carly Reidt
Jason Gill

SIGNIFICANT NONCOMPLIANCE ENCLOSURE

Federal regulations require the Metropolitan St. Louis Sewer District to track the compliance status of all industrial users with the terms of federal pretreatment regulation 40 CFR 403, MSD Ordinance 12559, and the user's industrial wastewater discharge permit. MSD must identify those users who are in significant noncompliance, as defined in the ordinance. We do this on a semi-annual basis.

MSD's Enforcement Response Plan requires MSD to:

- Make an annual publication in the St. Louis Post-Dispatch of all users in SNC
- Initiate additional enforcement action, if necessary to secure timely and effective compliance

The plan is an integral part of MSD's pretreatment program, and is approved by Missouri Department of Natural Resources.

Asterisks appearing next to the "Value Found" results in the accompanying notice:

none This is the first violation within the **January 1 through June 30** review period.

* This is at least the second violation within the **January 1 through June 30** review period.

** The violation equals or exceeds the limit multiplied by a "technical review criteria" factor. The TRC for most pollutants is 1.2. For oil & grease, the TRC is 1.4.

*** Both of the conditions above exist.

SNC is calculated separately for each pollutant at each sample point for each limit type. Your facility will be in SNC if any of the following conditions apply:

1. 66% or more of results within this six-month period exceed the limit by any amount (chronic)
2. 33% or more of results within this six-month period equal or exceed the limit multiplied by the TRC

Example scenarios:

Date	Sample Point	Pollutant	Discharge Limit	Limit Type	Value Found
March 23	901	Zinc (T)	2.61 mg/L	DM	2.92 mg/L
March 23	901	Zinc (T)	1.48 mg/L	MA	2.92 mg/L **

As of June 30:
Zinc at sample point 901 – DM = 100% chronic – **SNC**
Zinc at sample point 901 – DM = 0% TRC – NOT SNC
Zinc at sample point 901 – MA = 100% chronic – **SNC**
Zinc at sample point 901 – MA = 100% TRC – **SNC**

Date	Sample Point	Pollutant	Discharge Limit	Limit Type	Value Found
March 23	901	Zinc (T)	2.61 mg/L	DM	2.92 mg/L
March 23	901	Zinc (T)	1.48 mg/L	MA	2.92 mg/L **
June 14	901	Zinc (T)	2.61 mg/L	DM	1.65 mg/L (not a violation)
June 14	901	Zinc (T)	1.48 mg/L	MA	1.65 mg/L *

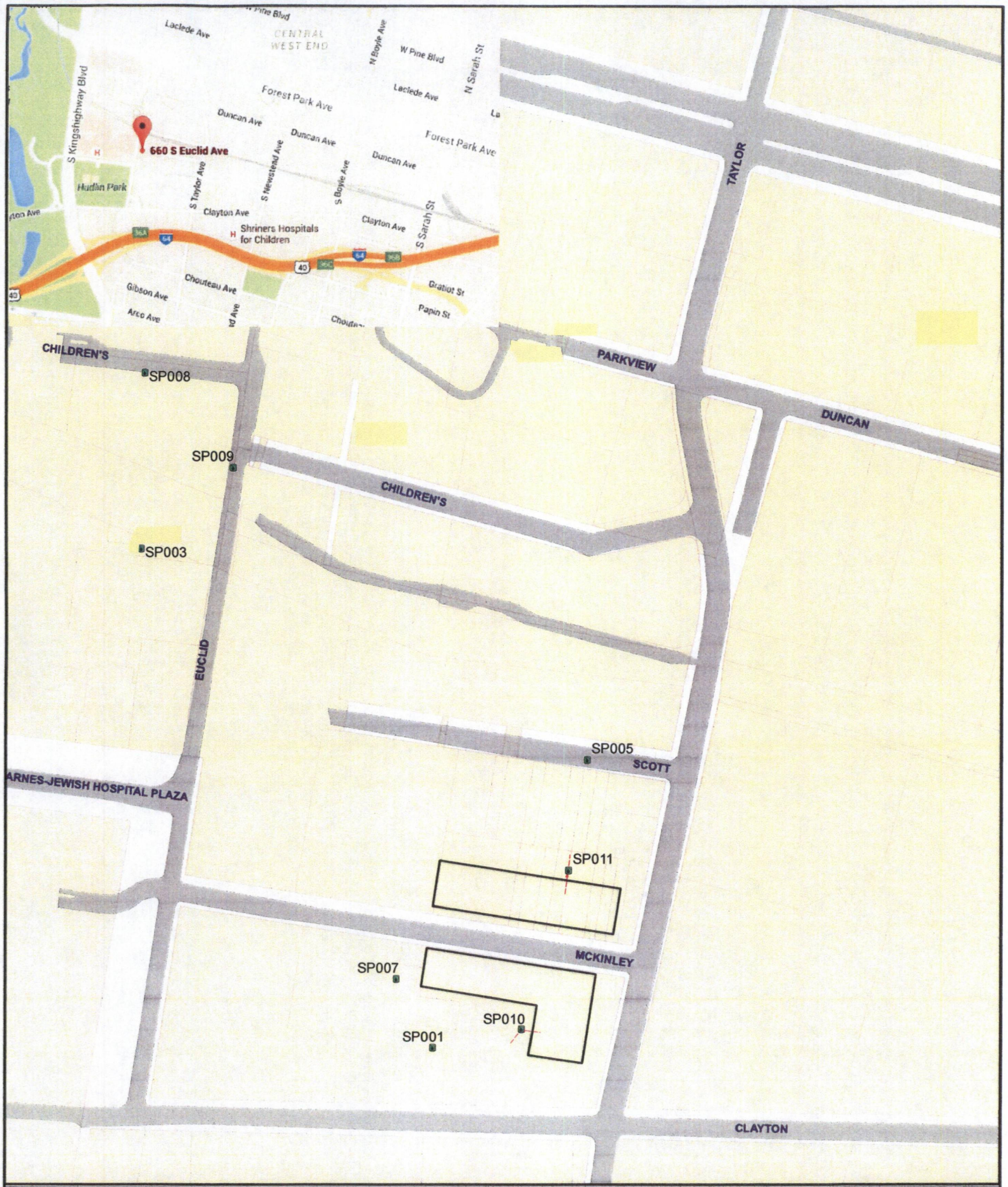
As of June 30:
Zinc at sample point 901 – DM = 50% chronic – NOT SNC
Zinc at sample point 901 – DM = 0% TRC – NOT SNC
Zinc at sample point 901 – MA = 50% chronic – NOT SNC
Zinc at sample point 901 – MA = 50% TRC – **SNC**

As soon as possible, you must correct the problem that caused the violations identified in the accompanying notice.

After you correct the problem, MSD strongly advises you to collect and analyze additional samples for the problem pollutants within the current six-month review period. This period ends on June 30. Multiple samples may be necessary to avoid SNC.

Under federal regulations, you must submit the results of all analyses you perform to MSD. MSD will use the results, along with the results of all MSD samples, to determine whether we must list your facility as in SNC.

MSD-DEC INDUSTRY SAMPLING MAP



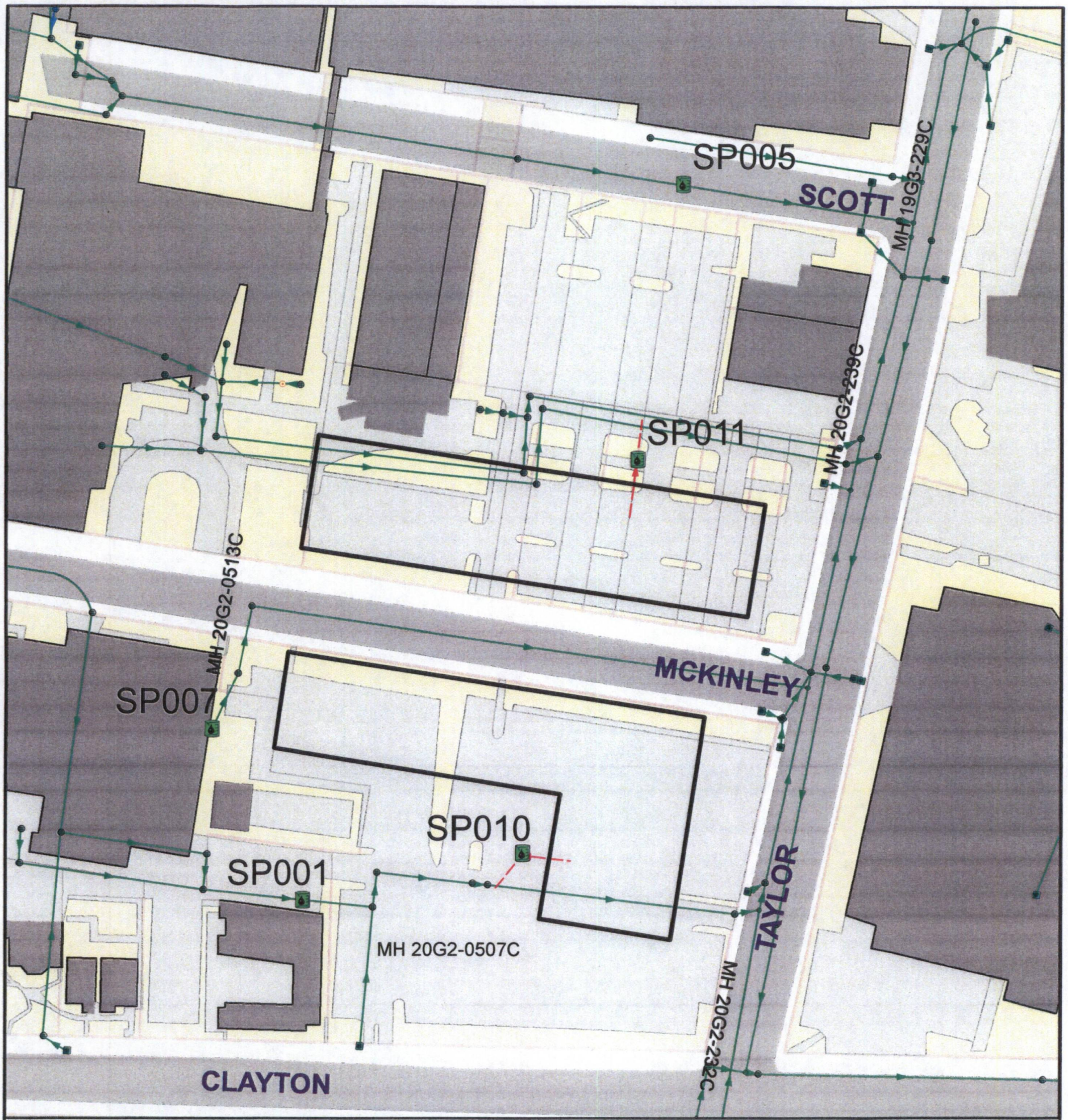
Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

Premise Address: 660 S. Euclid Drawn By: MSK

Zip: 63110 Date: 9/29/15

Page 1 of 3

MSD-DEC INDUSTRY SAMPLING MAP



SP001: Flow from W in MH 30' N, 10' W of NE corner of building 27 (in alley)
SP005: MH 200' W of Taylor Ave. on S side of Scott Ave. in street
SP007: Manhole in sidewalk E of Bldg 63; 111' N, 2' E of SE corner of building
SP010: 6" trapped vent, 10'W, 36'N of EHS SW bldg corner
SP011: 12" vent 125'W, 30'N of NE bldg corner

Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

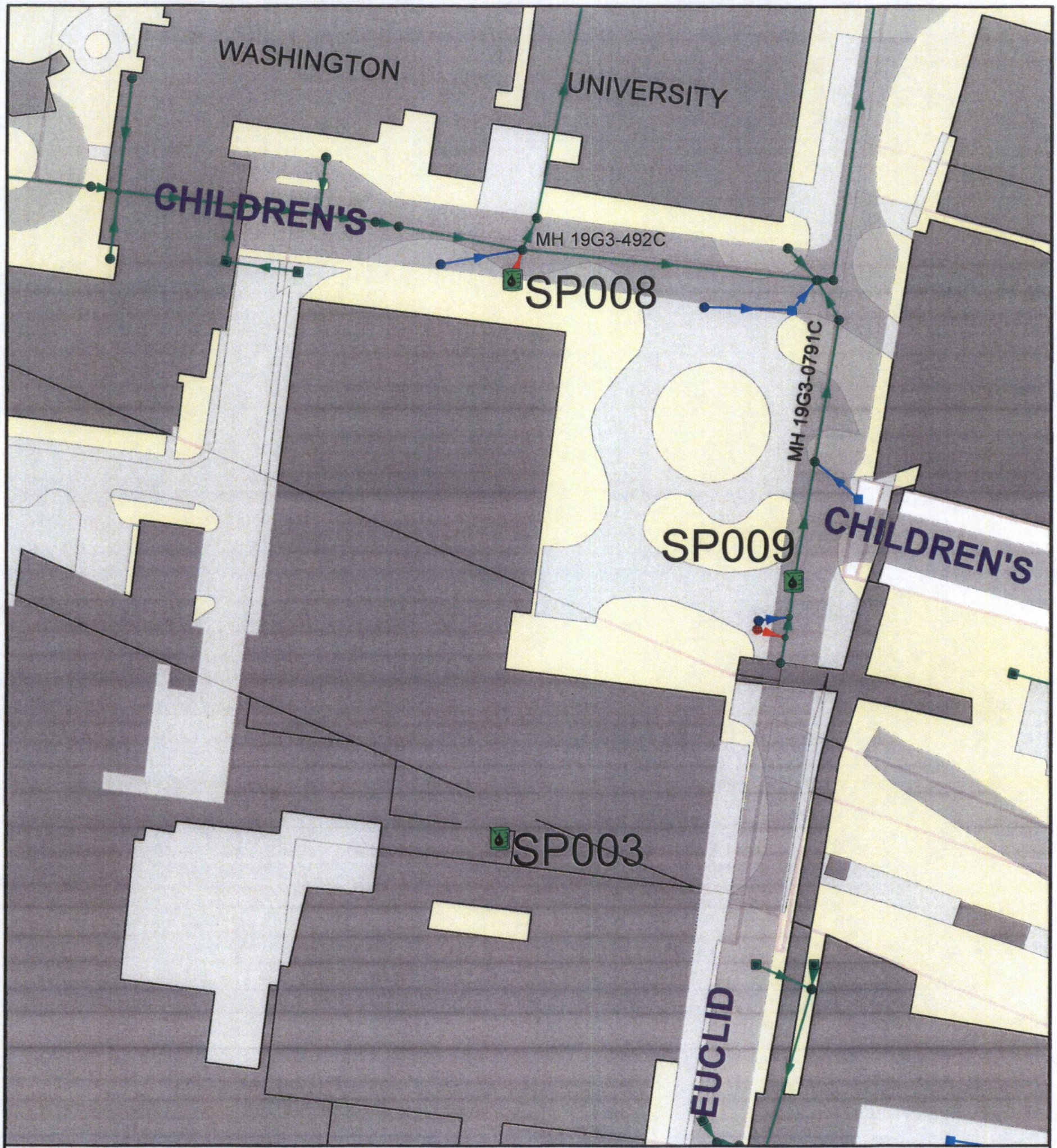
Premise Address: 660 S. Euclid

Drawn By: MSK

Zip: 63110

Date: 9/29/15

MSD-DEC INDUSTRY SAMPLING MAP



SP003: Flow from S in MH N of building 14 in drive, 6' S of O2 tanks
SP008: MH in plaza 27' W, 27' N of NE bldg corner
SP009: MH in E plaza 36' N, 27' E of S NE bldg

Company Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL MSD Account No: 1024353000

Premise Address: 660 S. Euclid Drawn By: MSK

Zip: 63110 Date: 9/29/15

SR
4/5

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2019 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories Q1
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

RECEIVED
FEB 26 2019
DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2019 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

MSD 044868

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

February 7, 2019
Lab No. 19E-0158
Invoice No. 252682
Page 1 of 8

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 1/29/19, 9:15
WASTEWATER COMPOSITE, SP001, 1/29/19 09:15 - 14:58

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.82	----	150.1	01/29/19
Temperature, °C (G)	14.1	----	170.1	01/29/19
Biological Oxygen Demand (C)	118	5	5210 B	01/30/19
Chemical Oxygen Demand (C)	163	10	5220 D	02/05/19
Total Suspended Solids (C)	39	5	160.2	02/01/19
Oil & Grease (G)	8	5	1664	02/04/16
Silver (C)	< 0.05	0.05	200.7	02/06/19
Total Phenol (G)	0.030	0.005	420.4	02/06/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

February 7, 2019
Lab No. 19E-0158

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 1/30/19, 08:27
WASTEWATER COMPOSITE, SP003, 1/30/19, 08:27- 14:27

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.11	----	150.1	01/30/19
Temperature, °C (G)	12.0	----	170.1	01/30/19
Biological Oxygen Demand (C)	78	5	5210 B	01/30/19
Chemical Oxygen Demand (C)	172	10	5220 D	02/05/19
Total Suspended Solids (C)	40	5	160.2	02/01/19
Oil & Grease (G)	7	5	1664	02/04/16
Silver (C) (<0.5)	1.72	0.05	200.7	02/06/19
Total Phenol (G)	0.010	0.005	420.4	02/06/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

February 7, 2019
Lab No. 19E-0158

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 1/29/19, 08:40
WASTEWATER COMPOSITE, SP005, 1/29/19, 08:40 - 14:40

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	10.75	---	150.1	01/29/19
Temperature, °C (G)	20.8	---	170.1	01/29/19
Biological Oxygen Demand (C)	127	5	5210 B	01/30/19
Chemical Oxygen Demand (C)	229	10	5220 D	02/05/19
Total Suspended Solids (C)	129	5	160.2	02/01/19
Oil & Grease (G)	7	5	1664	02/04/16
Silver (C)	<0.05	0.05	200.7	02/06/19
Total Phenol (G)	0.108	0.005	420.4	02/06/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

February 7, 2019
Lab No. 19E-0158

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 1/29/19, 09:06
WASTEWATER COMPOSITE, SP007, 1/29/19, 09:06 - 15:06

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.00	----	150.1	01/29/19
Temperature, °C (G)	11.8	----	170.1	01/29/19
Biological Oxygen Demand (C)	65	5	5210 B	01/30/19
Chemical Oxygen Demand (C)	216	10	5220 D	02/05/19
Total Suspended Solids (C)	19	5	160.2	02/01/19
Oil & Grease (G)	5	5	1664	02/04/16
Silver (C)	< 0.05	0.05	200.7	02/06/19
Total Phenol (G)	0.132	0.005	420.4	02/06/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

February 7, 2019
Lab No. 19E-0158

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 1/30/19, 08:50
WASTEWATER COMPOSITE, SP008, 1/30/19, 08:50 - 14:50

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.39	----	150.1	01/30/19
Temperature, °C (G)	10.5	----	170.1	01/30/19
Biological Oxygen Demand (C)	255	5	5210 B	01/30/19
Chemical Oxygen Demand (C)	606	10	5220 D	02/05/19
Total Suspended Solids (C)	213	10	160.2	02/01/19
Oil & Grease (G)	5	5	1664	02/04/16
Silver (C)	< 0.05	0.05	200.7	02/06/19
Total Phenol (G)	0.018	0.005	420.4	02/06/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

MEMBER ACIL

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Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

February 7, 2019
Lab No. 19E-0158

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 1/30/19, 08:44
WASTEWATER COMPOSITE, 1/30/19, 08:44 - 14:44

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.14	----	150.1	01/30/19
Temperature, °C (G)	13.7	----	170.1	01/30/19
Biological Oxygen Demand (C)	775	25	5210 B	01/30/19
Chemical Oxygen Demand (C)	1170	100	5220 D	02/05/19
Total Suspended Solids (C)	425	15	160.2	02/01/19
Oil & Grease (G)	28	5	1664	02/04/16
Silver (C)	< 0.05	0.05	200.7	02/06/19
Total Phenol (G)	0.071	0.005	420.4	02/06/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

February 7, 2019
Lab No. 19E-0158

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 1/29/19, 08:42
WASTEWATER COMPOSITE, SP010, 1/29/19, 08:42 - 14:42

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.44	----	150.1	01/29/19
Temperature, °C (G)	14.4	----	170.1	01/29/19
Biological Oxygen Demand (C)	460	25	5210 B	01/30/19
Chemical Oxygen Demand (C)	893	10	5220 D	02/05/19
Total Suspended Solids (C)	78	5	160.2	02/01/19
Oil & Grease (G)	< 5	5	1664	02/04/16
Silver (C)	< 0.05	0.05	200.7	02/06/19
Total Phenol (G)	0.012	0.005	420.4	02/06/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

February 7, 2019
Lab No. 19E-158

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 1/30/19, 09:15
WASTEWATER COMPOSITE, SP011, 1/30/19, 09:15 - 15:15

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.86	----	150.1	01/30/19
Temperature, °C (G)	10.8	----	170.1	01/30/19
Biological Oxygen Demand (C)	3250	1250	5210 B	01/30/19
Chemical Oxygen Demand (C)	5525	250	5220 D	02/05/19
Total Suspended Solids (C)	1768	10	160.2	02/01/19
Oil & Grease (G)	10	5	1664	02/04/16
Silver (C)	< 0.05	0.05	200.7	02/06/19
Total Phenol (G)	0.052	0.005	420.4	02/06/19

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

Steve Root, Manager
Environmental Testing

SR/ck

MEMBER ACIL

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SEE REVERSE FOR CONDITIONS.

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 2/8/2019

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ENVIRONMENTAL COMP.

Metropolitan Saint Louis Sewer District
2350 Market Street
Saint Louis, Missouri 63103-2555

WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid Ave.
St. Louis, MO 63110

Attn: Livi Isringhausen
Environmental Compliance Manager

INDUSTRIAL WASTEWATER DISCHARGE PERMIT NUMBER 1024353000

ANNUAL PERMIT FEE NOTICE

For permits in effect as of 10/01/2018.

Fee will be included on the next regular monthly bill from the Metropolitan St. Louis Sewer District.

Explanation of Charges

Fee for Pretreatment Program Discharge Permit covering the period October 1, 2018 through September 30, 2019 issued in accordance with the Metropolitan St. Louis District Ordinance #14853 for the location at **660 S. Euclid Ave.**
As a reminder, the permit fees below reflect new fees that were adopted last year. This was the first fee increase since 1992.

Base charge @ $180.00 per permit			$180.00
Volume charge @$0.86 per average daily Ccf	567.98	Ccfs	$488.46
Sample Point Charge @$120.00 per sample point	8	points	$960.00
		Total Fee Due:	**$1,628.46**

For inquiries about the Annual Permit Fee, please call 314-436-8710. For inquiries about payment of the fee, which will appear on your upcoming monthly bill, please call 1-866-281-5737.

THIS IS NOT A BILL
DO NOT PAY NOW

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL FACILITY INSPECTION REPORT

Company: Washington University Medical School — Account #: 1024353000
Premise Address: 660 S. Euclid — Zip Code: 63110
MSD Classes: SIU ☒ Non-Significant CIU ☐ CIU ☐ Surcharge ☐ Non-Toxic Process Water/Wastes ☐
Toxics-Bearing Waste ☒ No Process Discharge ☐ Multi-User ☐ Special Handling/Billing ☐
Company Representative: Livi Isringhausen
Title: Environmental Compliance Manager — Phone#: 314-362-6735
Inspector: Jason Gill
Others Present: None
Inspection Date: **11/30/18** Time: From 8:40 AM To 10:50 AM (Last Insp. 11/21/17)

NOTE: ALL ITEMS ARE TO BE COMPLETED BASED ON EVENTS SINCE LAST INSPECTION. ANSWERS ARE BASED ON INFORMATION OBTAINED OR PROVIDED BY COMPANY DURING INSPECTION, AS WELL AS INFORMATION IN FILE.

***** DATABASE ALSO UPDATED WITH APPROPRIATE CHANGES - see attached database reports *****

1. A. ARE THERE ADDITIONAL ACCOUNT NUMBERS? Yes☒ No☐
   List them, note any changes: 10243532-00, 10243533-00, 10373777-00, 10481063-00, 10524528-01, 10553440-00, 10555626-00
   B. Were any changes (including to the primary or changes only to suffixes) for acct no's with RFs? NA☐ Yes☐ No☒
   C. If yes to B, was Cost Recovery Unit informed of the change(s)? NA☒ Yes☐ No☐
   D. Did all acct no's have water usage in PT database? Yes☒ No☐
   E. If no to D, explain: _____

2. DOES COMPANY HAVE WATER/WASTEWATER SOURCES OTHER THAN FROM INCOMING WATER METERS? Yes☐ No☒
   If yes: A. Are volumes reported to MSD? Yes☐ No☐
   If no: Write company and require submittal of volumes, method of measurement & calibration, etc.
   If yes: B. Are volumes read with meters ☐ or other methods ☐?
   If other methods: C. Describe: _____
   [See "Special Handling" question for review of company's records]

3. PROCESSES & CLEANUP/WASHDOWN:

	Cont/ Batch?	Water/Liquids Used?	DISCHARGE Frequency (or how else disposed?)	Sample pt.
Medical university with research and testing labs	Cont	Yes	Daily	001,003,005,007,008,009,011
Housing and care of research mice and other animals	Cont	Yes	Daily	003,005,007,008,009
Kitchen services	Batch	Yes	Daily	005, 008, 012
Hazardous materials clean-up	Batch	Yes	Daily	010
	(None)	N/A		
	(None)	N/A		

4. DOES COMPANY HAVE ANY STORM WATER DISCHARGES TO THE SEPARATE SANITARY SEWER? Yes☐ No☒
   (Including: slotted MH/vent covers, uncovered or unbermed outside wash pads, etc.)
   If yes: A. Describe: _____
   (Write company and have discharge properly mitigated and/or rerouted to storm.)

5. PRETREATMENT (other than grease traps) - describe:

	Sample pt.
pH neutralization	001, 003, 005, 007, 008, 009, 010, 011
Silver recovery	001, 003, 005, 008, 009, 011

6. DOES COMPANY HAVE ANY GREASE TRAPS? Yes☒ No☐

If yes:
- A. List sample points: 005, 008 & 012
- B. What is the frequency for cleaning & maintenance? Annually
- C. Were cleaning & maintenance logs reviewed for to verify frequency? (must be done) Yes☒ No☐
- D. If No to C: Explain: _____
- E. Has company been in SNC in the past two years for food-based oil & grease violations? Yes☐ No☒
- F. If Yes to E: Is frequency for cleaning & maintenance at least once/quarter? NA☒ Yes☐ No☐
- G If No to F, require company to begin cleaning at least once/quarter. Was this done? NA☒ Yes☐ No☐
- H. Are any additives used in traps? Yes☐ No☒
- I. If yes to H, was company warned MSD will bill them for blockages they cause? NA☒ Yes☐ No☐
- J. Was company informed that MSD performs separate grease trap inspections? Yes☒ No☐

7. HAS COMPANY CONSTRUCTED NEW BLDGS/ADDITIONS WITH SEWERS SINCE LAST INSPECTION? Yes☐ No☒

If yes:
- A. Ask company: Did they notify MSD's Plan Review group? Unknown☐ Yes☐ No☐
- B. If no or unknown, has inspector notified Plan Review group? Yes☐ No☐
- C. Comments: _____

8. HAS COMPANY BEGUN DISCHARGING ANY NEW POLLUTANTS SINCE THE LAST INSPECTION? Yes☐ No☒

If yes:
- A. List pollutants & process: _____
- B. Will MSD STP exceed existing NPDES discharge limit(s)? Yes☐ No☐
- C. Will MSD STP's discharge exceed 0.1 mg/l for any new pollutant? Yes☐ No☐
  (MSD must notify MDNR if B or C is yes and discharge will continue [40CFR122.42(b)].)
- D. Comments: _____

9. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS THAT ARE "NOT APPLICABLE"? Yes☐ No☒
(including those that are 'No PSES' and 'General Stds Only')

If yes:
- A. List regulation & describe operations (including any discharge):
  _____
- B. Explain why it is N/A: _____

10. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS SUBJECT TO DISCHARGE LIMITS? Yes☐ No☒

If yes:
- A. List regulation & describe operations (including any discharge):
  _____
- B. Is maximum daily categorical discharge ≤ 100 GPD? (includes batch discharges) Yes☐ No☐

If yes to B:
- C. Batch ☐ or Continuous ☐? Volume verified how? _____
- D. Does company ever discharge untreated, concentrated categorical wastewater? Yes☐ No☐
- E. Was company in SNC during any part of the previous **24** months? Yes☐ No☐
- F. Date of last NSCIU Certification Statement: _____ or not currently NSCIU ☐
  (If no to B, yes to D or E, or Cert. Statement not submitted as required, company is not eligible to be an NSCIU)

11. HAS COMPANY CERTIFIED TO THE ABSENCE OF SPECIFIC CATEGORICAL POLLUTANTS? Yes☐ No☒
(New certification also is required for each permit renewal)

If yes:
- A. Certification date: _____
- B. Pollutants accepted by MSD as absent: _____
- C Were any requested "absent" pollutants rejected by MSD? Yes☐ No☐
- If yes to C: D. List them and explain why: _____
- E. Were all the accepted pollutants non-detect in all monitoring since certification was approved? Yes☐ No☐
  (If compared to intake water levels, explain details below)
- If no to E: F. Explain: _____
  - G. Does Wastewater Discharge Permit need to be updated to remove detected pollutants? Yes☐ No☐
- H. Comments: _____

12. DOES CATEGORICAL WASTEWATER COMBINE WITH NON-CATEGORICAL WW PRIOR TO SAMPLING? Yes☐ No☒

If yes:
- A. At which points? _____
- B. Current applied factor: _____ Is it correct? Yes☐ No☐
- C. If no, list correct factor/explain? _____

13. IS ANY WASTEWATER SUBJECT TO PRODUCTION ☐ OR MASS ☐ BASED STANDARDS? Yes☐ No☒

If yes:
- A. At which points? _____
- B. Since calculation of the current limits, has the long term avg production rate or discharge volume changed by 20% or more? Yes☐ No☐
- C. If yes to B, explain: _____

14. ARE ANY RADIOACTIVE MATERIALS HANDLED (other than solely from sealed sources)? Yes☒ No☐

If yes:
- A. Describe operations & disposal: Radioactive materials are used as part of research activities and educational purposes. All radioactive materials are collected and transported to the EHS building for storage/disposal. Some liquid materials are allowed to decay on site in a segregated room prior to being discharged to the sewer system.
- B. Does company have an NRC license? Yes☒ No☐
  - C. If No, explain why not: _____
- D. If non-exempt & disposed to sewer, does company submit quarterly reports to MSD? NA☐ Yes☒ No☐
  (If No to B, write company & require quarterly reports of discharge to sewer – or have permit revised as needed)
- E. Amount discharged in most recent four complete calendar quarters: 9.6534 MCI
- F. Is company in compliance with requirements of sewer use ordinance prohibition? Yes☒ No☐
  - G. If No, explain why not: _____

15. DOES COMPANY GENERATE WASTES/WASTEWATER BY GENETIC ENGINEERING RESEARCH? Yes☐ No☒

If yes:
- A. Does company render wastes/wastewater innocuous? Yes☐ No☐
- B. If yes, describe how: _____
- C. Does company have MSD authorization for disposal to sewer? NA☐ Yes☐ No☐
- D. Most recent authorization date: _____

16. DOES PROCESS or P&E WASHDOWN WATER USE APPEAR EXCESSIVE? Yes☐ No☒
(IS COMPANY USING DILUTION TO MEET DISCHARGE LIMITATIONS?)
- A. Explain how use was verified & any needed changes:
  There have been no major changes in overall water consumption since last years inspection. The primary process water uses/discharges to the sewer include research lab activities, animal care and cage washing, kitchen services. Sanitary from a large number of employees and students and HVAC systems are also large water uses. No excessive usage was observed during the walkthrough.

17. BASED ON OBSERVATIONS DURING INSPECTION, DOES COMPANY APPEAR TO HAVE SOME WATER THAT IS NOT DISCHARGED TO SEWER? Yes☒ No☐

If yes:
- A. Describe: Evaporative loss from HVAC systems and lawn irrigation.
- B. What is the approximate daily volume that is not discharged? 48451
- C. Was "Return Factor Program" brochure given to company? Yes☒ No☐
  (regardless of whether some water is not discharged to sewer)

18. INCOMING & OUTGOING WATER/WASTEWATER VOLUME

A. What is the TOTAL avg daily INCOMING water volume (from water meters + unmetered sources)? 350276

B. What is the TOTAL avg daily volume DISCHARGED to sewer (from all sample point flow streams)? 434478

C. Difference: 84202

D. Does difference agree with amt not discharged from above question (within 20% of incoming amt)? Yes☒ No☐

If no to D: E. Explain: _____

19. HAS COMPANY BEEN GRANTED A VARIANCE FROM DISCHARGE LIMITATIONS CONTAINED IN THE SEWER USE ORDINANCE? Yes☐ No☒

If yes: A. Pollutant(s) and variance limit: _____

B. Latest approval date: _____

C. Is the approved variance more than 5 years old? Yes☐ No☐

(If yes to C, a new variance must be requested – write company)

20. HAVE ANY NUMERICAL LIMITATIONS BEEN APPLIED TO COMPANY, IN ADDITION TO THOSE ALREADY CONTAINED IN THE SEWER USE ORDINANCE? Yes☐ No☒

If yes: A. Pollutant(s) and discharge limit: _____

B. Date originally applied: _____, or as part of variance above? ☐

21. HAS COMPANY EXCEEDED ORDINANCE DISCHARGE LIMITS SINCE LAST INSPECTION OR WITHIN THE LAST 12 MONTHS (if last insp <12 months ago)? Yes☐ No☒

If yes: A.

Pollutant	When	Sample Points	Is problem resolved? Y/N	Describe
			N/A	
			N/A	
			N/A	
			N/A	
			N/A	

B. Comments: _____

22. HAS COMPANY EXCEEDED CATEGORICAL PRETREATMENT LIMITS SINCE THE LAST INSPECTION OR WITHIN LAST 12 MONTHS (if last insp <12 months ago)? NA☒ Yes☐ No☐

If yes: A.

Pollutant	When	Sample Points	Is problem resolved? Y/N	Describe
			N/A	
			N/A	
			N/A	
			N/A	
			N/A	

B. Comments: _____

23. HAVE THERE BEEN ANY PROBLEM DISCHARGES SINCE LAST INSPECTION? Yes☐ No☒

If yes: A. Upsets? ☐ Bypasses of pretreatment facilities? ☐

Spills? ☐ Slug discharges? ☐ Other? _____

B. Explain any marked: _____

24. COULD SPILLS OR LEAKS OF ANY PROCESS TANKS, OR STORAGE TANKS, OR STORED WASTES, OR STORED CHEMICALS EASILY REACH SANITARY SEWERS OR STORM DRAINS? Yes☐ No☒

If yes: A. What needs to be done?

_____

If no: B. How are they controlled?

In the buildings that have research laboratories, lab reagents including solvents are kept under the fume hoods or in designated cabinets. Small spill kits that have neutralizers and absorbents are located in each lab area. In the SRF Building, cage cleaning chemicals including acid and caustic totes are stored on top of a secondary containment sump system. An ample amount of spill control materials are stockpiled in the EHS building. This building is also where hazardous and radioactive wastes are processed - these rooms have containment sumps in the floor, and barrels are stored on containment pallets. They have a 24-hr. emergency

25. DOES COMPANY HAVE ANY WASTEWATER DISCHARGES TO STORM SEWERS OR TO GROUND? Yes☐ No☒

If yes: A. Describe: _____

B. Is discharge covered by an NPDES Permit? Yes☐ No☐

If no to B: Write company & require that discharge be ceased, rerouted to sanitary sewer or elsewhere internally, or company obtain an NPDES permit.

26. DOES COMPANY HAVE ANY NPDES PERMITS? Yes☐ No☒ Or NO EXPOSURE CERTIFICATIONS? Yes☐ No☒

If yes for NPDES: A. Receiving stream:_____

B. Does it have a MDNR general permit for stormwater discharges from industrial activities? Yes☐ No☐

If yes to B: Permit #: MO-R_____

C. Does it have a MDNR general permit for wastewater discharges? Yes☐ No☐

If yes to C: Permit #: MO-G_____ Permitted activity:_____

D. Does it have a MDNR site specific permit for wastewater discharges? Yes☐ No☐

If yes to D: Permit #: MO0_____

Outfall	Description	Vol (GPD)	Components

E. Comments: _____

27. BASED ON OBSERVATIONS DURING INSPECTION, ARE THERE ANY AREAS WHERE COMPANY ACTIVITIES APPEAR TO IMPAIR STORMWATER RUNOFF? Yes☐ No☒

If yes: A. Describe: _____

B. What needs to be done? _____

C. Was "Illicit Stormwater Discharges" brochure given to company? Yes☒ No☐
(regardless of whether there are any problem areas)

28. DOES COMPANY HAVE ANY WRITTEN SLUG DISCHARGE CONTROL (INCLUDES SPILLS) PLANS [40CFR403.8(f)(2)(vi)]? Yes☒ No☐

If yes: A.

	Title (actual title, NOT "SPCCP")	Last Update
1.	Contingency Plan	3/1/16
2.	Spill Prevention Control and Countermeasures Plan	1/25/18

B. Were Plans reviewed for completeness, especially regarding batch discharges/slugs and Q.19/20/21? Yes☒ No☐
(must be done)

C. Are updates needed to existing Plans? (If yes, write company & require) Yes☐ No☒

D. Are any Plans needed (either in addition to those listed in Part A, or if there currently are no written control plans)? (If yes, write company & require) Yes☐ No☒

E. Explain why/why not for C or D: The plan is an official "SPCCP" that contains essential spill control procedures, proper storage of raw materials and wastes and emergency contact information. The plan was updated earlier this year.

29. DOES COMPANY HAVE ANY MAINTENANCE SHOP PARTS WASHERS? Yes☐ No☒

If yes: A. Parts washer solvent name: _____

B. Priority pollutants (or "none"): _____

C. How is spent solvent disposed? _____

(These solvents are not included in database's priority pollutants list, nor monitored for unless conditions show potential discharges)

30. ARE ANY ORGANICS OR SOLVENTS USED (OTHER THAN IN PARTS WASHERS)? Yes☒ No☐

If yes: A.

Solvent name/ components	Used for?	413/433/469 Process?	How disposed?	Priority Pollutant?
Numerous solvents in various laboratories (refer to pollutants list on IDR)	Lab reagents	Yes☐ No☒	Hauled off site	Yes☒ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐

31. DOES COMPANY HAVE A 413/433/469-REGULATORY "SOLVENT MANAGEMENT PLAN"? Yes☐ No☒

(Applies if co. has 413/433/469 processes, whether or not solvents used)

If yes: A. Is it part of a Spill/Slug Control Plan listed above? Yes[1.☐ 2.☐] No☐

B. If no to A, date of last update for SMP: _____

C. Is there a copy of the Spill/Slug Plan or SMP in the files? Yes☐ No☐

D. Does SMP address all 413/433/469 solvents? (or verify "none" ☐) Yes☐ No☐

(If no to C or D, write company and require submittal and/or update)

32. ARE EMERGENCY NOTIFICATION PROCEDURES POSTED THAT INCLUDE MSD CONTACTS? Yes☒ No☐

A. Was company provided notification cards & told to post where emergency response personnel can locate them? Yes☒ No☐

(Must post if company generates process wastewater or stores chemicals of concern)

33. IS COMPANY REQUIRED TO SELF-MONITOR ANY OF THEIR DISCHARGES? Yes☒ No☐

If yes: A. Is requirement contained in permit ☒ or other document ☐.

B. If other document, date & description: _____

C. How frequently is sampling required? Quarterly

D. How frequently are reports required? Quarterly

E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐

F. If no, explain: _____

34. DOES COMPANY SELF-MONITOR ITS WASTEWATER DISCHARGE? Yes☒ No☐

If yes: A. Does sample collection time period match co's production shifts? Yes☒ No☐

B. Are representative grab/comp samples collected? Yes☒ No☐

C. Are EPA-approved 40 CFR 136 wastewater test methods used? Yes☒ No☐

D. Does company measure pH and/or temperature itself? Yes☐ No☒

If yes: E. Have the company show equipment and procedure (meters, calibration stds, etc.). Is measurement performed properly? Yes☐ No☐

F. If no to A,B,C, or E, _____ explain needed changes:

35. DOES COMPANY CONTINUOUSLY MONITOR AT SAMPLE POINT AND KEEP A PERMANENT RECORD FOR: pH ☐, TEMP ☐, LEL ☐? Yes☐ No☒

If yes: A. At which SPs? _____

B. Are discharge limits in PT database "alert only"? (If not, change to that & make note: _____) Yes☐ No☐

C. Does company submit quarterly summaries? Yes☐ No☐

D. If no, explain: _____

36. DOES MSD SPLIT SAMPLES WITH THE COMPANY? Yes☐ No☒

If yes:
- A. Is company having the samples analyzed Yes☐ No☐
- B. How does company insure proper preservation, holding times & analytical methods? _____
- C. Has company submitted results of all split sample analyses since the last insp? Yes☐ No☐
- D. Have results been submitted within 28 days of the collection's calendar quarter? Yes☐ No☐
- E. If no to C, or D, explain: _____
- F. Does company still want to split samples? Yes☐ No☐
- G. Comments: _____

37. IS COMPANY REQUIRED TO REGULARLY SUBMIT ANY REPORTS OTHER THAN SELF-MONITORING REPORTS? Yes☒ No☐

If yes:
- A. Is requirement contained in permit ☒ or other document ☐.
- B. If other document, date & description: _____
- C. What is required to be reported? Radioactive Material Discharge
- D. How frequently are reports required? Quarterly
- E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐
- F. If no, explain: _____

38. IS COMPANY UNDER ANY ENVIRONMENTAL ENFORCEMENT ORDERS OR REQUIREMENTS TO SUBMIT COMPLIANCE SCHEDULE REPORTS? Yes☐ No☒

If yes:
- A. Type and date: _____
- B. Have the reports & actions been on-time & complete? Yes☐ No☐
- C. If no, explain: _____

39. ASK COMPANY: IS COMPANY IN COMPLIANCE W/APPLICABLE NESHAP REGULATIONS FOR WW DISCHARGES? Yes☒ No☐
[To see if 40CFR63 applies to MSD plant, per §§63.1580(b) & 63.1582(a). Some MDNR-issued Title V air permits for specific processes allow pre-approved WW discharge. City/County-issued air permits are not NESHAP permits.]

If no:
- A. Describe: _____
- B. Was MDNR Air Pollution Control informed? (must be done) Yes☐ No☐

40. DOES COMPANY RETAIN ALL WASTEWATER RECORDS FOR AT LEAST 5 YEARS? Yes☒ No☐

If no:
- A. How long does company retain records? _____
- B. Was company told to retain for at least 5 years, per ordinance? Yes☐ No☐
- C. Where are they kept? EHS building files at 4522 McKinley Ave.

41. IS COMPANY CLASSIFIED AS A SIGNIFICANT INDUSTRIAL USER (SIU)? Yes☒ No☐

If yes:
- A. Check & explain applicable criteria:
  - ☐ Process subject to categorical stds under 40 CFR 403.6. Which cat. stds? _____
  - ☒ Process discharge => 25,000 GPD Total process volume: 106,050 GPD
  - ☐ Process discharge => 5% of TP ADW hydraulic capacity TP ADW hydraulic capacity: _____. Percent: _____
  - ☐ Process discharge => 5% of TP ADW organic capacity Which organic pollutant? _____ TP ADW organic capacity: _____. Percent: _____
  - ☐ Reasonable potential for adverse effect on operations Why? _____
  - ☐ Reasonable potential for violating PT std or req't Which ones & why? _____
- B. Does company own its bldg (is it listed as the owner in E-CIS)? Yes☒ No☐

If no:
- C. What is Bldg owner name (use DBA if avail.)? _____ (check E-CIS CAPS Customer Info)
- D: What is Bldg owner mailing address? _____ (check E-CIS CAPS Customer Info)

42. IS COMPANY CLASSIFIED AS "Multi-User"? Yes☐ No☒

If yes:
- A. Is company's discharge segregated from other tenants' discharge? Yes☐ No☐
- B. If no to A, does the company own the bldg/receive the MSD bills? Yes☐ No☐
- C. If yes to B, was company informed it is responsible for total discharge, or else must provide segregated sample points? Yes☐ No☐
- D. If no to B, are any Process/P&E Wash-type wastes discharged? Yes☐ No☐
- E. If yes to D, are the wastes completely innocuous? Yes☐ No☐
  (And explain why/why not: _____)
- F. If yes to D, and no to E, company must accept responsibility or provide segregated SP.
  Acceptance letter date: _____ Or write company with requirement ☐
- G. If no to D or yes to E, are limits "alert only" on PT database? Yes☐ No☐
- H. Comments: _____

43. IS COMPANY CLASSIFIED AS "Special Handling/Billing"? Yes☐ No☒

If yes:
- A. Why? _____
- B. Are any changes needed to reasons/details? Yes☐ No☐
- C. If yes, explain: _____
- D. Were company records reviewed <u>& verified</u> for special handling/billing reports? NA☐ Yes☐ No☐
  [Including comparison with meters/measuring methods for billing reports]

44. DO MSD CLASSIFICATIONS NEED TO BE REVISED? Yes☐ No☒

If yes:
- A. Indicate correct classifications:
  SIU ☐ Non-Significant CIU ☐ CIU ☐ Surcharge ☐ Non-Toxic Process Water/Wastes ☐
  Toxics-Bearing Waste ☐ No Process Discharge ☐ Multi-User ☐ Special Handling/Billing ☐
- B. Explain changes: _____

45. SAMPLE POINTS

						Auto-sampler ready?	DJ (y/n)
SP #	001	Fed.Reg.	N/A	Components:	Sanitary, P&E wash, process waste, RO reject, lab waste, CT blowdown, storm water	N/A	N/A
SP #	003	Fed.Reg.	N/A	Components:	Sanitary, P&E wash, process waste, CT blowdown, storm water, lab waste	N/A	N/A
SP #	005	Fed.Reg.	N/A	Components:	Sanitary, RO reject, boiler blowdown, P&E wash, process waste, lab waste, kitchen waste, CT blowdown, storm water	N/A	N/A
SP #	007	Fed.Reg.	N/A	Components:	Sanitary, lab waste, P&E wash, CT blowdown, storm water	N/A	N/A
SP #	008	Fed.Reg.	N/A	Components:	Sanitary, process waste, lab waste, P&E wash, RO reject, CT blowdown, storm water, kitchen waste	N/A	N/A
SP #	009	Fed.Reg.	N/A	Components:	Sanitary, process waste, lab waste, P&E R/O reject., CT blowdown, storm water	Yes	No
SP #	010	Fed.Reg.	N/A	Components:	Sanitary, P&E wash	Yes	No
SP #	011	Fed.Reg.	N/A	Components:	Sanitary, process waste, lab waste, P&E wash, R/O reject., storm water	Yes	No

46. ARE ANY SAMPLE POINTS TRAPPED VENTS? Yes☒ No☐

If yes:
- A. List SPs: <u>010</u>
- B. Was co. informed that T-vents are preferred, and told why? Yes☒ No☐

47. ARE DISCHARGES AT ANY SPs SMALL/IRREGULAR ENOUGH TO ALLOW GRAB SAMPLES? Yes☐ No☒

If yes:
- A. List SPs and reasons: _____

48. ARE THERE ANY UNSAMPLED DISCHARGES? (list each lateral separately) Yes☒ No☐

Dummy SP #	012	Components:	Sanitary
Dummy SP #		Components:	

If yes: A. Was company informed that SPs may be required in the future if the discharges change? Yes☒ No☐
B. Are all unsampled discharges very low flow and/or innocuous? Yes☒ No☐
C. If No to B, explain:_____
(Must also write company and require installation of SP)

49. DO ANY SAMPLE POINTS (including Unsampled/Dummy SPs) RECEIVE STORMWATER? Yes☒ No☐
If yes: A. List Sample Points: 001, 003, 005, 007, 008, 009, 011

50. WERE ALL SAMPLE POINTS (except Dummy SPs) OPENED & INSPECTED? No SPs☐ Yes☒ No☐
A. If any SPs cannot be located or opened, explain: _____
B. If any SP descript's need to be changed, explain: _____
C. Is it possible to use an auto-sampler to collect samples (regardless of volume or batches)? Yes☒ No☐
Update PT database indicator as needed.
D. Was ANY grease or other problem/debris observed in any SP? Yes☐ No☒
E. If yes to D, list SPs & describe: _____
F. If yes to D, was company directed to take corrective actions? Yes☐ No☐

51. REVIEW THE SAMPLE POINT MAP! Last map revision date: 9/29/15
A. Is the map correct and accurate in all its details? Yes☒ No☐
B If no, what changes are needed: _____

52. DO INSTRUCTIONS FOR "Contact Prior to Sampling" or FIELD VISIT "Special Instructions" NEED REVISION? Yes☐ No☒
If yes: A. List needed changes: _____

53. IS COMPANY LOCATED WITHIN AN MSD HAZARDOUS AREA BOUNDARY? Yes☐ No☒
If yes: A. Has it been marked as such in the PT database? Yes☐ No☐

USE THIS SPACE FOR ANY OTHER COMMENTS/OBSERVATIONS PERTINENT TO YOUR INSPECTION OF THIS SITE.
There have not been any changes to the number or location of grease traps. The current trap locations are: SP005: 1. Main kitchen at McDonnell Science (Bldg 12); 2. Farrell Learning & Teaching Center (FLTC, Bldg 98); SP008: 3. "Farmstead" (formerly Starbucks, Bldg 16); 4. EPNEC (Bldg 11); 5. SP012: MCC Kaldi's Coffee (Bldg 29).

Industrial Data Report

Facility Name:	WASHINGTON UNIVERSITY MEDICAL SCHOOL		
Facility Identifier:	1024353000	Facility Type:	Industrial User
Physical Location:	660 S Euclid AVENUE Saint Louis, MO 63110	Mailing Address:	660 S. Euclid Ave., Campus Box 8229 Saint Louis, MO 63110
MSD Base Map Page / Section:	19 / G3	Facility ID:	842

GENERAL INFORMATION

MSD Sewer Accounts

Account Number	Status
~~1024308900~~	~~Active~~ SR
1024353000	Active
1024353200	Active
1024353300	Active
1037377700	Active
~~1045375900~~	~~Active~~ SR
1048106300	Active
~~1049273800~~	~~Active~~ SR
1052452801	Active
1055344000	Active
1055562600	Active

Contact Information

First Name:	Last Name:	Title:	Contact Type:	Responsibilities:	Email:	Business Phone:	Cell Phone:
Ms. Livi	Isringhausen	Environmental Compliance Manager	Facility	Authorized Signatory, Billing Contact, Field Contact - Primary, Office Contact - Primary	isringhausenm@wustl.edu	314-362-6735	618-410-6140
Mr. Ted	Reising	Environmental Professional IV	Facility	Field Contact 2nd Alt	reisingt@wusm.wustl.edu	314-362-1095	314-277-0423
Ms. Linda	Vishino	Environmental Compliance Officer	Facility	Authorized Signatory, Field Contact 1st Alt		314-935-7864	

Inspection

Template:	Industrial Facility Inspection	Start Date:	11/30/2018 08:40 AM
Inspection Type:	Facility Inspection	End Date:	11/30/2018 10:50 AM

Industrial Data Report

Facility Groups

Group Name	Group Category	Group Description
RF	Facility Classification	Return Factor Facility
SIU	Facility Classification	Significant Industrial User
TOX	Facility Classification	Toxics-Bearing Process Water or Wastes
rf_>1000	Return Factor Criteria	Return Factor(s) total >= $1,000/year
rf_Site	Return Factor Criteria	Return Factor(s) requiring site visits due to metering or >= $1,000/year
*VOL>25K	SIU Criteria	Process Discharge => 25,000 GPD

Permit Information

Permit No.:	1024353000 - 2	Permit Type:	Pretreatment
Effective Date:	1/1/2018 12:00:00AM	Expiration Date:	12/31/2022 12:00:00AM
Issued Date:	1/1/2018 12:00:00AM	Permit Status:	Issued

Industrial Data Report

Work Requirement

Task Template	Start Date	End Date	No. of Time	Frequency	Sample Location
Industrial Facility Inspection	06/01/2004	06/30/2050	1	Once/year	
Radiation Discharge	10/01/2005	12/31/2022	1	Once/3 mo	
BOD & TSS (T04); COD (T04); Field - pH & Temperature (G00); Metals - Ag (T04); Phenolic Organics - Acids (G00); Semi-Volatiles (Base/Neutrals, Acids) (T04); Total Phenols (single test) (G00); Vol Orgs-not incl Acr & 2-chloro (group poll only) (G00)	01/01/2018	12/31/2022	1	Once/year	001
BOD & TSS (T04); COD (T04); Field - pH & Temperature (G00); Metals - Ag (T04); Phenolic Organics - Acids (G00); Semi-Volatiles (Base/Neutrals, Acids) (T04); Total Phenols (single test) (G00); Vol Orgs-not incl Acr & 2-chloro (group poll only) (G00)	01/01/2018	12/31/2022	1	Once/year	003
BOD & TSS (T04); COD (T04); Field - pH & Temperature (G00); Metals - Ag (T04); Oil & Grease (G00); Phenolic Organics - Acids (G00); Semi-Volatiles (Base/Neutrals, Acids) (T04); Total Phenols (single test) (G00); Vol Orgs-not incl Acr & 2-chloro (group poll only) (G00)	01/01/2018	12/31/2022	1	Once/year	005
BOD & TSS (T04); COD (T04); Field - pH & Temperature (G00); Metals - Ag (T04); Oil & Grease (G00); Phenolic Organics - Acids (G00); Semi-Volatiles (Base/Neutrals, Acids) (T04); Total Phenols (single test) (G00); Vol Orgs-not incl Acr & 2-chloro (group poll only) (G00)	01/01/2018	12/31/2022	1	Once/year	007
BOD & TSS (T04); COD (T04); Field - pH & Temperature (G00); Metals - Cr, Cu, Pb, Ni, Ag, Zn (T04); Oil & Grease (G00); Phenolic Organics - Acids (G00); Semi-Volatiles (Base/Neutrals, Acids) (T04); Total Phenols (single test) (G00); Vol Orgs-not incl Acr & 2-chloro (group poll only) (G00)	01/01/2018	12/31/2022	1	Once/year	008
BOD & TSS (T04); COD (T04); Field - pH & Temperature (G00); Metals - Cr, Cu, Pb, Ni, Ag, Zn (T04); Oil & Grease (G00); Phenolic Organics - Acids (G00); Semi-Volatiles (Base/Neutrals, Acids) (T04); Total Phenols (single test) (G00); Vol Orgs-not incl Acr & 2-chloro (group poll only) (G00)	01/01/2018	12/31/2022	1	Once/year	009

Industrial Data Report

BOD & TSS (T04); COD (T04); Field - pH & Temperature (G00); Metals - Ag (T04); Oil & Grease (G00); Phenolic Organics - Acids (G00); Semi-Volatiles (Base/Neutrals, Acids) (T04); Total Phenols (single test) (G00); Vol Orgs-not incl Acr & 2-chloro (group poll only) (G00)	01/01/2018	12/31/2022	1	Once/year	010
BOD & TSS (T04); COD (T04); Field - pH & Temperature (G00); Metals - Cr, Cu, Pb, Ni, Ag, Zn (T04); Oil & Grease (G00); Phenolic Organics - Acids (G00); Semi-Volatiles (Base/Neutrals, Acids) (T04); Total Phenols (single test) (G00); Vol Orgs-not incl Acr & 2-chloro (group poll only) (G00)	01/01/2018	12/31/2022	1	Once/year	011

PRODUCTION/SERVICES INFORMATION

Operation Description: Research and teaching facility

Shift Information

Shift	Start Time	End Time	Average No. of Employees
1	09:00 AM	05:00 PM	8,500
2	06:00 PM	02:00 AM	600

SIC

SIC Code	SIC Name	SIC Description
0279	0279	Animal specialties
8221	8221	Colleges and universities
8733	8733	Noncommercial Research Organizations

Raw Material List

Laboratory chemicals & reagents

CHEMICAL INVENTORY INFORMATION

Industrial Data Report

Full Disclosure of Chemicals

Substance Name	Presence Ind	Categorically Related?
(cis & trans) 1,3-Dichloropropene	Known Absent	
1,1,1-Trichloroethane	Known Present	
1,1,2,2-Tetrachloroethane	Known Present	
1,1,2-Trichloroethane	Known Present	
1,1-Dichloroethane	Known Absent	
1,1-Dichloroethene	Known Absent	
1,2,4-Trichlorobenzene	Known Absent	
1,2-Dichlorobenzene	Known Present	
1,2-Dichloroethane	Known Present	
1,2-Dichloropropane	Known Absent	
1,2-Diphenylhydrazine	Suspected Absent	
1,3-Dichlorobenzene	Known Absent	
1,4-Dichlorobenzene	Suspected Absent	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	Known Present	
2,4,6-Trichlorophenol	Known Absent	
2,4-Dichlorophenol	Known Present	
2,4-Dimethylphenol	Known Absent	
2,4-Dinitrophenol	Suspected Absent	
2,4-Dinitrotoluene	Suspected Present	
2,6-Dinitrotoluene	Known Absent	
2-Chloroethyl vinyl ether	Known Absent	
2-Chloronaphthalene	Known Absent	
2-Chlorophenol	Known Absent	
2-Nitrophenol	Known Present	
3,3-Dichlorobenzidine	Known Absent	
4,4'-DDD	Known Absent	
4,4'-DDE	Known Absent	
4,4'-DDT	Known Absent	
4,6-Dinitro-2-Methylphenol	Known Absent	
4-Bromophenyl phenyl ether	Known Absent	
4-Chloro-3-Methylphenol	Known Absent	
4-Chlorophenyl phenyl ether	Known Absent	
4-Nitrophenol	Known Present	
Acenaphthene	Known Present	
Acenaphthylene	Known Absent	
Acrolein	Known Present	
Acrylonitrile	Known Present	

Industrial Data Report

Aldrin	Known Absent
Alpha-BHC	Known Absent
Anthracene	Known Present
Antimony (Total)	Suspected Present
Arsenic (Total)	Suspected Present
Asbestos (Fibrous)	Known Present
Benzene	Known Present
Benzidine	Known Present
Benzo (A) Anthracene	Known Absent
Benzo (A) Pyrene	Known Present
Benzo (B) Fluoranthene	Known Absent
Benzo (G,H,I) Perylene	Known Absent
Benzo (K) Fluoranthene	Known Absent
Beryllium (Total)	Suspected Present
Beta-BHC	Known Absent
Bis (2-Chloroethoxy) Methane	Known Absent
Bis (2-Chloroethyl) Ether	Known Absent
Bis (2-Chloroisopropyl) Ether	Known Absent
Bis (2-EthylHexyl) Phthalate	Known Absent
Bromodichloromethane	Known Absent
Bromoform	Known Present
Bromomethane	Known Absent
Butylbenzyl Phthalate	Known Absent
Cadmium (Total)	Known Present
Carbon Tetrachloride	Known Present
Chlordane	Known Absent
Chlorobenzene	Known Present
Chloroethane	Known Absent
Chloroform	Known Present
Chloromethane	Known Absent
Chromium (Total)	Known Present
Chrysene	Known Absent
Copper (Total)	Known Present
Cyanide (Total)	Known Present
Delta-BHC	Known Absent
Di-n-butyl Phthalate	Known Present
Di-n-octyl Phthalate	Known Present
Dibenzo (A,H) Anthracene	Known Absent
Dibromochloromethane	Known Absent

Industrial Data Report

Dieldrin	Known Present
Diethyl Phthalate	Known Absent
Dimethyl Phthalate	Known Absent
Endosulfan I	Known Absent
Endosulfan II	Known Absent
Endosulfan Sulfate	Known Absent
Endrin	Known Absent
Endrin Aldehyde	Known Absent
Ethylbenzene	Known Present
Fluoranthene	Known Absent
Fluorene	Known Absent
Gamma-BHC	Known Present
Heptachlor	Known Absent
Heptachlor Epoxide	Suspected Absent
Hexachlorobenzene	Known Absent
Hexachlorobutadiene	Known Absent
Hexachlorocyclopentadiene	Known Present
Hexachloroethane	Known Present
Indeno (1,2,3-cd) pyrene	Known Absent
Isophorone	Suspected Absent
Lead (Total)	Known Present
Mercury (Total)	Known Present
Methylene Chloride	Known Present
N-Nitrosodi-n-Propylamine	Known Absent
N-Nitrosodimethylamine	Known Absent
N-Nitrosodiphenylamine	Known Absent
Naphthalene	Known Present
Nickel (Total)	Known Present
Nitrobenzene	Known Present
PCB - 1016	Suspected Absent
PCB - 1221	Suspected Absent
PCB - 1232	Suspected Absent
PCB - 1242	Suspected Absent
PCB - 1248	Suspected Absent
PCB - 1254	Suspected Absent
PCB - 1260	Suspected Absent
Pentachlorophenol	Known Present
Phenanthrene	Known Present
Phenol	Known Present

Industrial Data Report

Pyrene	Suspected Present
Selenium (Total)	Known Present
Silver (Total)	Known Present
Tetrachloroethene	Known Present
Thallium (Total)	Known Present
Toluene	Known Present
Toxaphene	Known Absent
Trans-1,2-Dichloroethene	Known Absent
Trichloroethene	Known Present
Vinyl Chloride	Known Absent
Zinc (Total)	Known Present

Process List

Process Name	Process Description	Seasonal?	Status	Process Detail
Non-Sewered: Off-Site Disposal			A	Equipment Oils and/or Grease, Infectious Waste, Kitchen/Food Service Grease, Other, Radioactive Waste, Solvents/Thinners
Non-Sewered: On-Site Storage			A	Equipment Oils and/or Grease, Infectious Waste, Kitchen/Food Service Grease, Other, Radioactive Waste, Solvents/Thinners
Product/Service	Medical school		A	
Product/Service	Research animal care & housing		A	
Product/Service	Research institution		A	

Control Plans

Name	Type	Approval Date	Status
001591	MDNR - Hazardous Waste Program	01/04/1997	Approved
24-00167-11	Nuclear Regulatory Commission	01/03/1997	Approved
MOT300010857	EPA - Hazardous Waste Program	01/05/1997	Approved
Slug Discharge/Spill Control Plan (start 7/1/2004)	Slug Discharge/Spill Control Plan	07/01/2004	Approved

PROCESS FLOW DETAILS

Industrial Data Report

Process Flow Details

Flow Stream Name	Flow Direction	Flow Type	Status
1024308900	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
05/04/2018	08/24/2018	Total Volume	183.0000 CCF
02/14/2018	05/03/2018	Total Volume	160.0000 CCF
11/07/2017	02/13/2018	Total Volume	198.0000 CCF

Average Daily Volume: 2.55 CCF

1024353000	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
05/23/2018	08/15/2018	Total Volume	11744.0000 CCF
02/17/2018	05/22/2018	Total Volume	10065.0000 CCF
11/15/2017	02/16/2018	Total Volume	8925.0000 CCF

Average Daily Volume: 145.27 CCF

1024353200	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
05/23/2018	10/19/2018	Total Volume	26688.0000 CCF
03/16/2018	05/22/2018	Total Volume	12320.0000 CCF
12/08/2017	03/15/2018	Total Volume	15055.0000 CCF

Average Daily Volume: 219.42 CCF

1024353300	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
06/20/2018	08/13/2018	Total Volume	529.0000 CCF
03/15/2018	06/19/2018	Total Volume	511.0000 CCF
12/16/2017	03/14/2018	Total Volume	508.0000 CCF

Average Daily Volume: 8.57 CCF

1037377700	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
05/03/2018	08/14/2018	Total Volume	9438.0000 CCF
02/03/2018	05/02/2018	Total Volume	6571.0000 CCF

Industrial Data Report

11/04/2017	02/02/2018	Total Volume	3710.0000 CCF

Average Daily Volume: 82.79 CCF

1045375900	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
06/26/2018	09/24/2018	Total Volume	909.0000 CCF
03/27/2018	06/25/2018	Total Volume	627.0000 CCF
12/27/2017	03/26/2018	Total Volume	164.0000 CCF

Average Daily Volume: 6.88 CCF

1048106300	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
05/03/2018	08/13/2018	Total Volume	26506.0000 CCF
02/03/2018	05/02/2018	Total Volume	15638.0000 CCF
11/04/2017	02/02/2018	Total Volume	14251.0000 CCF

Average Daily Volume: 250.52 CCF

1049273800	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
10/10/2018	11/09/2018	Total Volume	694.0000 CCF
09/12/2018	10/09/2018	Total Volume	618.0000 CCF
08/10/2018	09/11/2018	Total Volume	743.0000 CCF
07/12/2018	08/09/2018	Total Volume	607.0000 CCF
06/12/2018	07/11/2018	Total Volume	624.0000 CCF
05/10/2018	06/11/2018	Total Volume	727.0000 CCF
04/11/2018	05/09/2018	Total Volume	689.0000 CCF
03/10/2018	04/10/2018	Total Volume	729.0000 CCF
02/10/2018	03/09/2018	Total Volume	650.0000 CCF
01/11/2018	02/09/2018	Total Volume	659.0000 CCF
12/12/2017	01/10/2018	Total Volume	597.0000 CCF

Average Daily Volume: 23.90 CCF

1052452801	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
06/20/2018	10/15/2018	Total Volume	2866.0000 CCF
03/16/2018	06/19/2018	Total Volume	911.0000 CCF

Industrial Data Report

12/07/2017	03/15/2018	Total Volume	1152.0000 CCF

Average Daily Volume: 19.49 CCF

1055344000	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
06/20/2018	08/13/2018	Total Volume	16.0000 CCF
02/03/2018	06/19/2018	Total Volume	41.0000 CCF
11/04/2017	02/02/2018	Total Volume	28.0000 CCF

Average Daily Volume: 0.40 CCF

1055562600	Incoming	Water Supply	A

Flow Data List

Start Date	End Date	Reading Type	Flow Value
05/04/2018	08/16/2018	Total Volume	1279.0000 CCF
03/14/2018	05/03/2018	Total Volume	980.0000 CCF
11/07/2017	03/13/2018	Total Volume	754.0000 CCF

Average Daily Volume: 13.36 CCF

Total Average Daily Volume: 773.14 CCF

Facility Flow Methodology

Name	Formula	Flow Start Date	Return Factor
ImportedRF1024308900	(@1024308900) / @1024308900	07/08/2017	0.83
ImportedRF1024353000	(@1024353000 - @COOLING_TOWER) / @1024353000	09/08/2010	0.9
ImportedRF1024353200	(@1024353200 - @COOLING_TOWER) / @1024353200	09/09/2010	0.68
ImportedRF1037377700	(@1037377700 - @COOLING_TOWER) / @1037377700	09/09/2010	0.77
ImportedRF1045375900	(@1045375900 - @IRRIGATION) / @1045375900	04/02/2015	0.24
ImportedRF1048106300	(@1048106300 - @COOLING_TOWER) / @1048106300	02/14/2018	0.66
ImportedRF1049273800	(@1049273800 - @LAUNDRY) / @1049273800	08/04/2010	0.95
ImportedRF1052452801	(@1052452801 - @COOLING_TOWER) / @1052452801	02/14/2018	0.49

PRETREATMENT INFORMATION

Industrial Data Report

Pretreatment System(s)

Pretreatment Type:	Primary Purpose:	Effective Date:	Sample Location
Grease Trap		06/16/1999	005
Grease Trap		07/26/2016	008
Grease Trap		11/21/2017	012
Metallic Replacement		09/02/1998	001
Metallic Replacement		09/02/1998	003
Metallic Replacement		07/17/2007	005
Metallic Replacement		07/13/2012	008
Metallic Replacement		07/13/2012	009
Metallic Replacement		09/15/2015	011
pH Adjustment/Neutralization		09/02/1998	001
pH Adjustment/Neutralization		09/02/1998	003
pH Adjustment/Neutralization		07/17/2007	005
pH Adjustment/Neutralization		07/17/2007	007
pH Adjustment/Neutralization		07/13/2012	008
pH Adjustment/Neutralization		07/13/2012	009
pH Adjustment/Neutralization		09/15/2015	010
pH Adjustment/Neutralization		01/10/2017	011

SAMPLE LOCATION INFORMATION

Sample Locations

Location Name	Location Type	Sample Location Description	Status	Flow Stream Name (Fed Regulation)
001	SP - Ordinance Only	Flow from W in MH 30' N, 10' W of NE corner of building 27 (in alley)	A	Cooling Tower Blowdown (), Laboratory Waste (), Plant & Equipment Washdown (), Process Waste (), Regeneration/Reject Water (), Sanitary (), Storm Water ()
003	SP - Ordinance Only	Flow from S in MH N of building 14 in drive, 6' S of O2 tanks	A	Cooling Tower Blowdown (), Laboratory Waste (), Plant & Equipment Washdown (), Process Waste (), Sanitary (), Storm Water ()

Industrial Data Report

005	SP - Ordinance Only	MH 200' W of Taylor Ave. on S side of Scott Ave. in street	A	Boiler Blowdown (), Cooling Tower Blowdown (), Kitchen Waste (), Laboratory Waste (), Plant & Equipment Washdown (), Process Waste (), Regeneration/Reject Water (), Sanitary (), Storm Water ()
007	SP - Ordinance Only	Manhole in sidewalk E of Bldg 63; 111' N, 2' E of SE corner of building	A	Cooling Tower Blowdown (), Laboratory Waste (), Plant & Equipment Washdown (), Process Waste (), Sanitary (), Storm Water ()
008	SP - Ordinance Only	MH in plaza 27' W, 27' N of NE bldg corner	A	Cooling Tower Blowdown (), Kitchen Waste (), Laboratory Waste (), Plant & Equipment Washdown (), Process Waste (), Regeneration/Reject Water (), Sanitary (), Storm Water ()
009	SP - Ordinance Only	MH in E plaza 36' N, 27' E of S NE bldg	A	Cooling Tower Blowdown (), Laboratory Waste (), Plant & Equipment Washdown (), Process Waste (), Regeneration/Reject Water (), Sanitary (), Storm Water ()
010	SP - Ordinance Only	6" trapped vent, 10'W, 36'N of EHS SW bldg corner	A	Plant & Equipment Washdown (), Sanitary ()
011	SP - Ordinance Only	12" vent 125'W, 30'N of NE bldg corner	A	Cooling Tower Blowdown (), Laboratory Waste (), Plant & Equipment Washdown (), Process Waste (), Regeneration/Reject Water (), Sanitary (), Storm Water ()
012	SP - Dummy Point	No sample point available	A	Sanitary ()
L-01	LAT - Sanitary Or San+Storm (Combined)	Lateral from buildings located S of McKinley Av & E of Euclid Av	A	
L-010	LAT - Sanitary Or San+Storm (Combined)	Line exiting N side of MCC building (4950 Childrens's Pl.) to main on Children's Pl.	A	Plant & Equipment Washdown (), Sanitary ()

Industrial Data Report

L-02	LAT - Sanitary Or San+Storm (Combined)	Lateral from buildings N&S of Scott Av & E of Euclid	A
L-03	LAT - Sanitary Or San+Storm (Combined)	Lateral N from Building 14 W of Euclid Av to courtyard	A
L-04	LAT - Sanitary Or San+Storm (Combined)	8" lateral E from Building 80 at Taylor and Parkview to an unnamed street	A
L-05	LAT - Sanitary Or San+Storm (Combined)	Multiple lines from Bldg 63 N to McKinley	A
L-06	LAT - Sanitary Or San+Storm (Combined)	Line exiting N side of Bldg 4 (425 S. Euclid) to main on Children's Pl.	A
L-07	LAT - Sanitary Or San+Storm (Combined)	Line exiting E side of Bldg 4 (425 S. Euclid) to main on Euclid	A
L-08	LAT - Sanitary Or San+Storm (Combined)	Line exiting W side of EHS Bldg to main on Taylor	A
L-09	LAT - Sanitary Or San+Storm (Combined)	Line exiting N side of 4515 McKinley to main in parking lot	A

Industrial Data Report

Sample Locations Flow Data by Sample Location and Flow Stream

Sample Location: 001 Auto-Sampler Ready? Y

Flow Stream Name	Flow Direction	Flow Type	Flow Discharge Type
Cooling Tower Blowdown	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	1716 GPD

Laboratory Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	915 GPD

Plant & Equipment Washdo	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	247 GPD

Process Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	354 GPD

Regeneration/Reject Water	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	1857 GPD

Sanitary	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	2744 GPD

Storm Water	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	0 GPD

Industrial Data Report

Sample Location: 003 Auto-Sampler Ready? Y

Flow Stream Name	Flow Direction	Flow Type	Flow Discharge Type
Cooling Tower Blowdown	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	3231 GPD

Laboratory Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	12291 GPD

Plant & Equipment Washdo	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	1150 GPD

Process Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	288 GPD

Sanitary	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	16878 GPD

Storm Water	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 005 Auto-Sampler Ready? Y

Flow Stream Name	Flow Direction	Flow Type	Flow Discharge Type
Boiler Blowdown	Outgoing	Dilution	Batch

Industrial Data Report

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	17449 GPD

Cooling Tower Blowdown	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	38728 GPD

Kitchen Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	4037 GPD

Laboratory Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	41089 GPD

Plant & Equipment Washdo	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	878 GPD

Process Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	370 GPD

Regeneration/Reject Water	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	14412 GPD

Sanitary	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	33188 GPD

Industrial Data Report

Storm Water	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 007 Auto-Sampler Ready? Y

Flow Stream Name	Flow Direction	Flow Type	Flow Discharge Type
Cooling Tower Blowdown	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	218 GPD

Laboratory Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	5451 GPD

Plant & Equipment Washdo	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	3939 GPD

Sanitary	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	2770 GPD

Storm Water	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 008 Auto-Sampler Ready? Y

Flow Stream Name	Flow Direction	Flow Type	Flow Discharge Type
Cooling Tower Blowdown	Outgoing	Dilution	Batch

Industrial Data Report

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	16394 GPD

Kitchen Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	01/10/2017	12/31/2022	Average	1000 GPD

Laboratory Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	8742 GPD

Plant & Equipment Washdo\	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	2361 GPD

Process Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	3385 GPD

Regeneration/Reject Water	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	17746 GPD

Sanitary	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	26225 GPD

Storm Water	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	0 GPD

Industrial Data Report

Sample Location: 009 Auto-Sampler Ready? Y

Flow Stream Name	Flow Direction	Flow Type	Flow Discharge Type
Cooling Tower Blowdown	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	16394 GPD

Laboratory Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	8741 GPD

Plant & Equipment Washdo	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	2360 GPD

Process Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	3384 GPD

Regeneration/Reject Water	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	17746 GPD

Sanitary	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	26225 GPD

Storm Water	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	0 GPD

Industrial Data Report

Sample Location: 010 Auto-Sampler Ready? Y

Flow Stream Name	Flow Direction	Flow Type	Flow Discharge Type
Sanitary	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	290 GPD

Sample Location: 011 Auto-Sampler Ready? Y

Flow Stream Name	Flow Direction	Flow Type	Flow Discharge Type
Cooling Tower Blowdown	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	6577 GPD

Laboratory Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	3507 GPD

Plant & Equipment Washdo	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	947 GPD

Process Waste	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	1358 GPD

Regeneration/Reject Water	Outgoing	Dilution	Batch

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	7119 GPD

Sanitary	Outgoing	Dilution	Continuous

Industrial Data Report

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	10521 GPD

Storm Water	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 012 Auto-Sampler Ready? N

Flow Stream Name	Flow Direction	Flow Type	Flow Discharge Type
Sanitary	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	11/21/2017	12/31/2022	Average	50000 GPD

Sample Location: L-010 Auto-Sampler Ready? Y

Flow Stream Name	Flow Direction	Flow Type	Flow Discharge Type
Sanitary	Outgoing	Dilution	Continuous

Flow Data

Meter	Start Date	End Date	Reading Type	Flow Value
	06/26/2017	12/31/2022	Average	290 GPD

Industrial Data Report

Sample Locations Flow Data by Meter Reads only

Sample Location: 001 Auto-Sampler Ready? Y

Flow Stream	Meter	Start Date	End Date	Reading Type	Flow Value
Cooling Tower Blowdown		06/26/2017	12/31/2022	Average	1716 GPD
Laboratory Waste		06/26/2017	12/31/2022	Average	915 GPD
Plant & Equipment Washdown		06/26/2017	12/31/2022	Average	247 GPD
Process Waste		06/26/2017	12/31/2022	Average	354 GPD
Regeneration/Reject Water		06/26/2017	12/31/2022	Average	1857 GPD
Sanitary		06/26/2017	12/31/2022	Average	2744 GPD
Storm Water		06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 003 Auto-Sampler Ready? Y

Flow Stream	Meter	Start Date	End Date	Reading Type	Flow Value
Cooling Tower Blowdown		06/26/2017	12/31/2022	Average	3231 GPD
Laboratory Waste		06/26/2017	12/31/2022	Average	12291 GPD
Plant & Equipment Washdown		06/26/2017	12/31/2022	Average	1150 GPD
Process Waste		06/26/2017	12/31/2022	Average	288 GPD
Sanitary		06/26/2017	12/31/2022	Average	16878 GPD
Storm Water		06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 005 Auto-Sampler Ready? Y

Flow Stream	Meter	Start Date	End Date	Reading Type	Flow Value
Boiler Blowdown		06/26/2017	12/31/2022	Average	17449 GPD
Cooling Tower Blowdown		06/26/2017	12/31/2022	Average	38728 GPD
Kitchen Waste		06/26/2017	12/31/2022	Average	4037 GPD
Laboratory Waste		06/26/2017	12/31/2022	Average	41089 GPD
Plant & Equipment Washdown		06/26/2017	12/31/2022	Average	878 GPD
Process Waste		06/26/2017	12/31/2022	Average	370 GPD
Regeneration/Reject Water		06/26/2017	12/31/2022	Average	14412 GPD
Sanitary		06/26/2017	12/31/2022	Average	33188 GPD
Storm Water		06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 007 Auto-Sampler Ready? Y

Flow Stream	Meter	Start Date	End Date	Reading Type	Flow Value
Cooling Tower Blowdown		06/26/2017	12/31/2022	Average	218 GPD
Laboratory Waste		06/26/2017	12/31/2022	Average	5451 GPD

Industrial Data Report

Plant & Equipment Washdown	06/26/2017	12/31/2022	Average	3939 GPD
Sanitary	06/26/2017	12/31/2022	Average	2770 GPD
Storm Water	06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 008 Auto-Sampler Ready? Y

Flow Stream	Meter	Start Date	End Date	Reading Type	Flow Value
Cooling Tower Blowdown		06/26/2017	12/31/2022	Average	16394 GPD
Kitchen Waste		01/10/2017	12/31/2022	Average	1000 GPD
Laboratory Waste		06/26/2017	12/31/2022	Average	8742 GPD
Plant & Equipment Washdown		06/26/2017	12/31/2022	Average	2361 GPD
Process Waste		06/26/2017	12/31/2022	Average	3385 GPD
Regeneration/Reject Water		06/26/2017	12/31/2022	Average	17746 GPD
Sanitary		06/26/2017	12/31/2022	Average	26225 GPD
Storm Water		06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 009 Auto-Sampler Ready? Y

Flow Stream	Meter	Start Date	End Date	Reading Type	Flow Value
Cooling Tower Blowdown		06/26/2017	12/31/2022	Average	16394 GPD
Laboratory Waste		06/26/2017	12/31/2022	Average	8741 GPD
Plant & Equipment Washdown		06/26/2017	12/31/2022	Average	2360 GPD
Process Waste		06/26/2017	12/31/2022	Average	3384 GPD
Regeneration/Reject Water		06/26/2017	12/31/2022	Average	17746 GPD
Sanitary		06/26/2017	12/31/2022	Average	26225 GPD
Storm Water		06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 010 Auto-Sampler Ready? Y

Flow Stream	Meter	Start Date	End Date	Reading Type	Flow Value
Sanitary		06/26/2017	12/31/2022	Average	290 GPD

Sample Location: 011 Auto-Sampler Ready? Y

Flow Stream	Meter	Start Date	End Date	Reading Type	Flow Value
Cooling Tower Blowdown		06/26/2017	12/31/2022	Average	6577 GPD
Laboratory Waste		06/26/2017	12/31/2022	Average	3507 GPD
Plant & Equipment Washdown		06/26/2017	12/31/2022	Average	947 GPD
Process Waste		06/26/2017	12/31/2022	Average	1358 GPD
Regeneration/Reject Water		06/26/2017	12/31/2022	Average	7119 GPD

Industrial Data Report

Sanitary	06/26/2017	12/31/2022	Average	10521 GPD
Storm Water	06/26/2017	12/31/2022	Average	0 GPD

Sample Location: 012 Auto-Sampler Ready? N

Flow Stream	Meter	Start Date	End Date	Reading Type	Flow Value
Sanitary		11/21/2017	12/31/2022	Average	50000 GPD

Sample Location: L-010 Auto-Sampler Ready? Y

Flow Stream	Meter	Start Date	End Date	Reading Type	Flow Value
Sanitary		06/26/2017	12/31/2022	Average	290 GPD

Associated Sample Locations

Location Name	Associated Location Name	Associated Location Status
010	012	A
L-01	001	A
L-010	012	A
L-02	002	I
	005	A
L-03	003	A
L-04	004	I
	006	I
L-05	007	A
L-06	008	A
L-07	009	A
L-08	010	A
L-09	011	A

ADDITIONAL COMMENTS

Facility Comments

Comment Type	Comment
Facility Special Instructions	SP006 is in secured area. Call number on gate for entry.

SR
5-9-19

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2018 (Jan-Mar) (Apr-June) (July-Sept) √ (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

RECEIVED
NOV 13 2018
DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2018 (Jan-Mar) (Apr-June) (July-Sept) √ (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

November 6, 2018
Lab No. 18E-1978
Invoice No. 249402

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 10/23/18, 09:15
WASTEWATER COMPOSITE, SP001, 10/23/18, 09:15 - 15:09

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.01	----	150.1	10/23/18
Temperature, °C (G)	21.9	----	170.1	10/23/18
Biological Oxygen Demand (C)	81	5	5210 B	10/24/18
Chemical Oxygen Demand (C)	163	10	5220 D	10/25/18
Total Suspended Solids (C)	118	5	160.2	10/29/18
Oil & Grease (G)	7	5	1664	10/30/18
Silver (C)	< 0.05	0.05	200.7	10/30/18
Total Phenol (G)	0.039	0.005	420.4	10/26/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

November 6, 2018
Lab No. 18E-1978

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 10/24/18, 08:31
WASTEWATER COMPOSITE, SP003, 10/24/18, 14:31

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.59	----	150.1	10/24/18
Temperature, °C (G)	19.4	----	170.1	10/24/18
Biological Oxygen Demand (C)	109	5	5210 B	10/24/18
Chemical Oxygen Demand (C)	217	10	5220 D	10/25/18
Total Suspended Solids (C)	121	5	160.2	10/29/18
Oil & Grease (G)	< 5	5	1664	10/30/18
Silver (C)	< 0.05	0.05	200.7	10/30/18
Total Phenol (G)	0.008	0.005	420.4	10/26/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

November 6, 2018
Lab No. 18E-1978

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 10/23/18, 08:41
WASTEWATER COMPOSITE, SP005, 10/23/18, 08:41 - 14:41

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.65	----	150.1	10/23/18
Temperature, °C (G)	23.4	----	170.1	10/23/18
Biological Oxygen Demand (C)	133	5	5210 B	10/24/18
Chemical Oxygen Demand (C)	262	10	5220 D	10/25/18
Total Suspended Solids (C)	77	5	160.2	10/29/18
Oil & Grease (G)	17	5	1664	10/30/18
Silver (C)	< 0.05	0.05	200.7	10/30/18
Total Phenol (G)	0.097	0.005	420.4	10/26/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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November 6, 2018
Lab No. 18E-1978

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 10/23/18, 09:06
WASTEWATER COMPOSITE, SP007, 10/23/18, 09:06 - 15:06

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.90	----	150.1	10/23/18
Temperature, °C (G)	23.9	----	170.1	10/23/18
Biological Oxygen Demand (C)	430	25	5210 B	10/24/18
Chemical Oxygen Demand (C)	826	10	5220 D	10/25/18
Total Suspended Solids (C)	310	5	160.2	10/29/18
Oil & Grease (G)	6	5	1664	10/30/18
Silver (C)	<0.05	0.05	200.7	10/30/18
Total Phenol (G)	0.163	0.005	420.4	10/29/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

November 6, 2018
Lab No. 18E-1978

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 10/24/18, 09:01
WASTEWATER COMPOSITE, SP008, 10/24/18, 09:01 - 14:38.

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.56	----	150.1	10/24/18
Temperature, °C (G)	19.7	----	170.1	10/24/18
Biological Oxygen Demand (C)	1150	50	5210 B	10/24/18
Chemical Oxygen Demand (C)	3495	25	5220 D	10/25/18
Total Suspended Solids (C)	878	10	160.2	10/29/18
Oil & Grease (G)	7	5	1664	10/30/18
Silver (C)	< 0.05	0.05	200.7	10/30/18
Total Phenol (G)	0.155	0.005	420.4	10/29/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

November 6, 2018
Lab No. 18E-1978

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 10/24/18, 08:52
WASTEWATER COMPOSITE, 10/24/18, 08:52 - 14:52

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	6.82	----	150.1	10/24/18
Temperature, °C (G)	19.0	----	170.1	10/24/18
Biological Oxygen Demand (C)	660	25	5210 B	10/25/18
Chemical Oxygen Demand (C)	1140	10	5220 D	10/25/18
Total Suspended Solids (C)	400	5	160.2	10/29/18
Oil & Grease (G)	60	5	1664	10/30/18
Silver (C)	< 0.05	0.05	200.7	10/30/18
Total Phenol (G)	0.095	0.005	420.4	10/29/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

November 6, 2018
Lab No. 18E-1978

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 10/23/18, 08:53
WASTEWATER COMPOSITE, SP010, 10/23/18, 08:53 - 14:53

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.75	----	150.1	10/23/18
Temperature, °C (G)	20.3	----	170.1	10/23/18
Biological Oxygen Demand (C)	290	5	5210 B	10/24/18
Chemical Oxygen Demand (C)	660	10	5220 D	10/25/18
Total Suspended Solids (C)	285	5	160.2	10/29/18
Oil & Grease (G)	< 5	5	1664	10/30/18
Silver (C)	< 0.05	0.05	200.7	10/30/18
Total Phenol (G)	0.126	0.005	420.4	10/29/18

MQL: Minimum Quantitative Limit

(C)-Composite
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Attention: Livi Isringhausen

November 6, 2018
Lab No. 18E-1978

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 10/24/18, 09:21
WASTEWATER COMPOSITE, SP011, 10/24/18, 09:21 - 15:21

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.29	----	150.1	10/24/18
Temperature, °C (G)	23.1	----	170.1	10/24/18
Biological Oxygen Demand (C)	395	25	5210 B	10/25/18
Chemical Oxygen Demand (C)	1054	20	5220 D	10/25/18
Total Suspended Solids (C)	423	5	160.2	10/29/18
Oil & Grease (G)	< 5	5	1664	10/30/18
Silver (C)	< 0.05	0.05	200.7	10/30/18
Total Phenol (G)	0.062	0.005	420.4	10/29/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

Steve Root, Manager
Environmental Testing

SR/ck

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 11/12/2018

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

SR

METROPOLITAN SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION 1024353000

Company Name: Washington University Medical School

Permit No:

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2018** ☐ (JAN-MAR) ☒ (APR-JUN) ☐ (JUL-SEP) ☐ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
Br-77	0.0050
C-14	0.0810
H-3	1.1031
I-125	0.0416
I-125V	0.0003
P-32	0.0206
S-35	0.0011
TOTAL ACTIVITY DISCHARGED	**1.2528**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☐ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist Telephone: (314) 362-4968

Signature: Karla Spafford Date: 07/18/2018

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

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METROPOLITAN SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

SR

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No: 1024-3530-00

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2018** [X] (JAN-MAR) [ ] (APR-JUN) [ ] (JUL-SEP) [ ] (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
Br-77	0.0030
H-3	1.2495
I-125	0.0574
I-125V	0.0002
P-32	0.0206
U-Nat	0.0010
TOTAL ACTIVITY DISCHARGED	**1.3317**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

[ ] I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist

Telephone: (314) 362-4968

Signature:

Date: 04/18/2018

RE: radrpt.doc 2/00

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SR
3/15/19

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION Q2

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2018 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2018 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

April 19, 2018
Lab No. 18E-0594
Invoice No. 241556

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 04/09/18, 9:24 A.M.
WASTEWATER COMPOSITE, SP001, 04/09/18, 9:24 A.M – 3:12 P.M.

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.62	----	150.1	04/09/18
Temperature, °C (G)	14.8	----	170.1	04/09/18
Biological Oxygen Demand (C)	53	5	5210 B	04/11/08
Chemical Oxygen Demand (C)	147	10	5220 D	04/10/18
Total Suspended Solids (C)	62	10	160.2	04/12/18
Oil & Grease (G)	< 5	5	1664	04/13/18
Silver (C)	< 0.05	0.05	200.7	04/12/18
Total Phenol (G)	0.007	0.005	420.4	04/12/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

April 19, 2018
Lab No. 18E-0594

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 04/10/18, 9:04 A.M.
WASTEWATER COMPOSITE, SP003, 04/10/18, 9:04 A.M – 3:04 P.M.

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.65	----	150.1	04/10/18
Temperature, °C (G)	14.7	----	170.1	04/10/18
Biological Oxygen Demand (C)	110	5	5210 B	04/11/08
Chemical Oxygen Demand (C)	291	10	5220 D	04/10/18
Total Suspended Solids (C)	90	5	160.2	04/12/18
Oil & Grease (G)	6	5	1664	04/13/18
Silver (C)	< 0.05	0.05	200.7	04/12/18
Total Phenol (G)	< 0.005	0.005	420.4	04/12/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

April 19, 2018
Lab No. 18E-0594

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 04/09/18, 8:43 A.M.
WASTEWATER COMPOSITE, SP005, 04/09/18, 8:43 A.M – 2:43 P.M.

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.37	----	150.1	04/09/18
Temperature, °C (G)	17.8	----	170.1	04/09/18
Biological Oxygen Demand (C)	98	5	5210 B	04/11/08
Chemical Oxygen Demand (C)	349	10	5220 D	04/10/18
Total Suspended Solids (C)	148	5	160.2	04/12/18
Oil & Grease (G)	9	5	1664	04/13/18
Silver (C)	< 0.05	0.05	200.7	04/12/18
Total Phenol (G)	0.085	0.005	420.4	04/12/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

April 19, 2018
Lab No. 18E-0594

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 04/09/18, 9:10 A.M.
WASTEWATER COMPOSITE, SP007, 04/09/18, 9:10 A.M – 3:10 P.M.

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.52	----	150.1	04/09/18
Temperature, °C (G)	20.0	----	170.1	04/09/18
Biological Oxygen Demand (C)	965	25	5210 B	04/11/08
Chemical Oxygen Demand (C)	1450	50	5220 D	04/10/18
Total Suspended Solids (C)	759	5	160.2	04/12/18
Oil & Grease (G)	5	5	1664	04/13/18
Silver (C)	< 0.05	0.05	200.7	04/12/18
Total Phenol (G)	0.012	0.005	420.4	04/12/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

April 19, 2018
Lab No. 18E-0594

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 04/10/18, 9:28 A.M.
WASTEWATER COMPOSITE, SP008, 04/10/18, 9:28 A.M – 2:55 P.M.

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.02	----	150.1	04/10/18
Temperature, °C (G)	16.8	----	170.1	04/10/18
Biological Oxygen Demand (C)	452	25	5210 B	04/11/08
Chemical Oxygen Demand (C)	903	10	5220 D	04/10/18
Total Suspended Solids (C)	453	10	160.2	04/12/18
Oil & Grease (G)	15	5	1664	04/13/18
Silver (C)	< 0.05	0.05	200.7	04/12/18
Total Phenol (G)	0.023	0.005	420.4	04/12/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

April 19, 2018
Lab No. 18E-0594

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 04/10/18, 9:19 A.M.
WASTEWATER COMPOSITE, SP009, 04/10/18, 9:19 A.M – 3:19 P.M.

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	6.36	----	150.1	04/10/18
Temperature, °C (G)	9.3	----	170.1	04/10/18
Biological Oxygen Demand (C)	279	5	5210 B	04/11/08
Chemical Oxygen Demand (C)	472	10	5220 D	04/10/18
Total Suspended Solids (C)	289	10	160.2	04/12/18
Oil & Grease (G)	< 5	5	1664	04/13/18
Silver (C)	< 0.05	0.05	200.7	04/12/18
Total Phenol (G)	0.010	0.005	420.4	04/12/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

April 19, 2018
Lab No. 18E-0594

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 04/09/18, 8:56 A.M.
WASTEWATER COMPOSITE, SP010, 04/09/18, 8:56 A.M – 2:56 P.M.

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.97	----	150.1	04/09/18
Temperature, °C (G)	16.1	----	170.1	04/09/18
Biological Oxygen Demand (C)	532	10	5210 B	04/11/08
Chemical Oxygen Demand (C)	836	10	5220 D	04/10/18
Total Suspended Solids (C)	55	5	160.2	04/12/18
Oil & Grease (G)	5	5	1664	04/13/18
Silver (C)	< 0.05	0.05	200.7	04/12/18
Total Phenol (G)	0.005	0.005	420.4	04/12/18

MQL: Minimum Quantitative Limit

(C)-Composite
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Attention: Livi Isringhausen

April 19, 2018
Lab No. 18E-0594

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 04/10/18, 8:50 A.M.
WASTEWATER COMPOSITE, SP011, 04/10/18, 8:50 A.M – 2:50 P.M.

UNITS: mg/L except as noted

RESULTS:

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.46	----	150.1	04/10/18
Temperature, °C (G)	21.7	----	170.1	04/10/18
Biological Oxygen Demand (C)	776	20	5210 B	04/11/08
Chemical Oxygen Demand (C)	1144	40	5220 D	04/10/18
Total Suspended Solids (C)	585	5	160.2	04/12/18
Oil & Grease (G)	18	5	1664	04/13/18
Silver (C)	< 0.05	0.05	200.7	04/12/18
Total Phenol (G)	0.077	0.005	420.4	04/12/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/ohs

Steve Root, Manager
Environmental Testing

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 4/18/2018

MSD 044937

SR
2.15

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2018 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

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PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2018 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 31, 2018
Lab No. 18E-0098
Invoice No. 238357

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 01/23/18, 8:50 A.M.
WASTEWATER COMPOSITE, SP001, 01/23/18, 8:50 A.M – 2:50 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.66	----	150.1	01/23/18
Temperature, °C (G)	15.0	----	170.1	01/23/18
Biological Oxygen Demand (C)	32	5	5210 B	01/25/18
Chemical Oxygen Demand (C)	192	10	5220 D	01/27/18
Total Suspended Solids (C)	235	10	160.2	01/26/18
Oil & Grease (G)	< 5	5	1664	01/29/18
Silver (C)	< 0.05	0.05	200.7	01/26/18
Total Phenol (G)	0.009	0.005	420.4	01/25/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

January 31, 2018
Lab No. 18E-0098
Invoice No. 238357

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 01/24/18, 9:11 A.M.
WASTEWATER COMPOSITE, SP003, 01/24/18, 9:11 A.M – 3:11 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.70	----	150.1	01/24/18
Temperature, °C (G)	9.0	----	170.1	01/24/18
Biological Oxygen Demand (C)	69	5	5210 B	01/25/18
Chemical Oxygen Demand (C)	194	10	5220 D	01/27/18
Total Suspended Solids (C)	145	5	160.2	01/26/18
Oil & Grease (G)	< 5	5	1664	01/29/18
Silver (C)	< 0.05	0.05	200.7	01/26/18
Total Phenol (G)	0.008	0.005	420.4	01/25/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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January 31, 2018
Lab No. 18E-0098
Invoice No. 238357

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 01/23/18, 8:30 A.M.
WASTEWATER COMPOSITE, SP005, 01/23/18, 8:30 A.M – 2:30 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.10	----	150.1	01/23/18
Temperature, °C (G)	16.3	----	170.1	01/23/18
Biological Oxygen Demand (C)	66	5	5210 B	01/25/18
Chemical Oxygen Demand (C)	253	10	5220 D	01/27/18
Total Suspended Solids (C)	78	5	160.2	01/26/18
Oil & Grease (G)	6	5	1664	01/29/18
Silver (C)	< 0.05	0.05	200.7	01/26/18
Total Phenol (G)	0.196	0.005	420.4	01/25/18

MQL: Minimum Quantitative Limit

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(G)-Grab

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St. Louis, MO 63110

January 31, 2018
Lab No. 18E-0098
Invoice No. 238357

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 01/23/18, 8:45 A.M.
WASTEWATER COMPOSITE, SP007, 01/23/18, 8:45 A.M – 2:45 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.32	----	150.1	01/23/18
Temperature, °C (G)	14.6	----	170.1	01/23/18
Biological Oxygen Demand (C)	388	10	5210 B	01/25/18
Chemical Oxygen Demand (C)	763	10	5220 D	01/27/18
Total Suspended Solids (C)	276	5	160.2	01/26/18
Oil & Grease (G)	9	5	1664	01/29/18
Silver (C)	< 0.05	0.05	200.7	01/26/18
Total Phenol (G)	0.045	0.005	420.4	01/25/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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January 31, 2018
Lab No. 18E-0098
Invoice No. 238357

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 01/24/18, 9:39 A.M.
WASTEWATER COMPOSITE, SP008, 01/24/18, 9:39 A.M – 3:39 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.42	----	150.1	01/24/18
Temperature, °C (G)	14.2	----	170.1	01/24/18
Biological Oxygen Demand (C)	675	25	5210 B	01/25/18
Chemical Oxygen Demand (C)	1175	50	5220 D	01/27/18
Total Suspended Solids (C)	600	10	160.2	01/26/18
Oil & Grease (G)	20	5	1664	01/29/18
Silver (C)	< 0.05	0.05	200.7	01/26/18
Total Phenol (G)	0.069	0.005	420.4	01/25/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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January 31, 2018
Lab No. 18E-0098
Invoice No. 238357

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 01/24/18, 9:30 A.M.
WASTEWATER COMPOSITE, SP009, 01/24/18, 9:30 A.M – 3:30 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.02	----	150.1	01/24/18
Temperature, °C (G)	16.0	----	170.1	01/24/18
Biological Oxygen Demand (C)	654	10	5210 B	01/25/18
Chemical Oxygen Demand (C)	954	20	5220 D	01/27/18
Total Suspended Solids (C)	396	10	160.2	01/26/18
Oil & Grease (G)	35	5	1664	01/29/18
Silver (C)	< 0.05	0.05	200.7	01/26/18
Total Phenol (G)	0.105	0.005	420.4	01/25/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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January 31, 2018
Lab No. 18E-0098
Invoice No. 238357

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 01/23/18, 8:38 A.M.
WASTEWATER COMPOSITE, SP010, 01/23/18, 8:38 A.M – 2:38 P.M.

Units: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.42	----	150.1	01/23/18
Temperature, °C (G)	14.1	----	170.1	01/23/18
Biological Oxygen Demand (C)	138	5	5210 B	01/25/18
Chemical Oxygen Demand (C)	331	10	5220 D	01/27/18
Total Suspended Solids (C)	52	5	160.2	01/26/18
Oil & Grease (G)	22	5	1664	01/29/18
Silver (C)	< 0.05	0.05	200.7	01/26/18
Total Phenol (G)	0.156	0.005	420.4	01/25/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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DIVISION OF ENVIRONMENTAL COMPLIANCE

MEMBER ACIL

AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST. NOT OFFICIAL WITHOUT THE RAISED SEAL OF ST. LOUIS TESTING LABORATORIES, INC. SEE REVERSE FOR CONDITIONS.

Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 31, 2018
Lab No. 18E-0098
Invoice No. 238357

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 01/24/18, 8:55 A.M.
WASTEWATER COMPOSITE, SP011, 01/24/18, 8:55 A.M – 2:55 P.M.

Units: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	6.75	----	150.1	01/24/18
Temperature, °C (G)	13.1	----	170.1	01/24/18
Biological Oxygen Demand (C)	209	5	5210 B	01/25/18
Chemical Oxygen Demand (C)	405	10	5220 D	01/27/18
Total Suspended Solids (C)	167	5	160.2	01/26/18
Oil & Grease (G)	23	5	1664	01/29/18
Silver (C)	< 0.05	0.05	200.7	01/26/18
Total Phenol (G)	0.200	0.005	420.4	01/25/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/ss

Steve Root, Manager
Environmental Testing

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 2/1/2018

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METROPOLITAN SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No: 1024-3530-00

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2017** ☐ (JAN-MAR) ☐ (APR-JUN) ☐ (JUL-SEP) ☒ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
H-3	5.8750
I-125	0.0190
I-125V	0.0166
P-32	0.0593
S-35	0.0000
U-Nat	0.0140
TOTAL ACTIVITY DISCHARGED	**5.9839**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☐ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist Telephone: (314) 362-4968

Signature: Date: 01/16/2018

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

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JAN 17 2018
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Metropolitan Saint Louis Sewer District
2350 Market Street
Saint Louis, Missouri 63103-2555

WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid Ave.
St. Louis, MO 63110

Attn: Livi Isringhausen
Environmental Compliance Manager

INDUSTRIAL WASTEWATER DISCHARGE PERMIT NUMBER 1024353000.

ANNUAL PERMIT FEE NOTICE

For permits in effect as of **10/01/2017**.

Fee will be included in a separate bill from the Metropolitan St. Louis Sewer District.

Explanation of Charges

Fee for Pretreatment Program Discharge Permit covering the period October 1, 2016 through September 30, 2017, issued in accordance with the Metropolitan St. Louis District Ordinance #12413 for the location at **660 S. Euclid Ave**.

Base charge @ $150.00 per permit			$150.00
Volume charge @$0.72 per average daily Ccf	561.77	Ccf(s)	404.47
Sample Point Charge @$100.00 per sample point	8	Point(s)	800.00
		Total Fee Due:	**$1,354.47**

For inquiries about the Annual Permit Fee, please call 314-436-8756. For inquiries about payment of the fee, which will appear on your upcoming monthly bill, please call 1-866-281-5737.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL FACILITY INSPECTION REPORT

Company: Washington University Medical School Account #: 1024353000
Premise Address: 660 S. Euclid Zip Code: 63110
MSD Classes: SIU ☒ Non-Significant CIU ☐ CIU ☐ Surcharge ☐ Non-Toxic Process Water/Wastes ☐
Toxics-Bearing Waste ☒ No Process Discharge ☐ Multi-User ☐ Special Handling/Billing ☐
Company Representative: Livi Isringhousen
Title: Environmental Compliance Manager Phone#: 314-362-6735
Inspector: Jason Gill
Others Present: None
Inspection Date: **11/21/17** Time: From 9:15 AM To 11:45 AM (Last Insp. 1/10/17)

NOTE: ALL ITEMS ARE TO BE COMPLETED BASED ON EVENTS SINCE LAST INSPECTION. ANSWERS ARE BASED ON INFORMATION OBTAINED OR PROVIDED BY COMPANY DURING INSPECTION, AS WELL AS INFORMATION IN FILE.

***** DATABASE ALSO UPDATED WITH APPROPRIATE CHANGES - see attached database reports *****

1. A. ARE THERE ADDITIONAL NON-STORMWATER ACCOUNT NUMBERS? Yes ☒ No ☐
   List them, note any changes: 10243532-00, 10243533-00, 10373777-00, 10481063-00, 10524528-01, 10553440-00. New account number 10555626-00 for the MCC building at 4950 Children's Place has been added as of this inspection.
   B. Were any changes (including to the primary or changes only to suffixes) for acct no's with RFs? NA ☐ Yes ☐ No ☒
   C. If yes to B, was Cost Recovery Unit informed of the change(s)? NA ☒ Yes ☐ No ☐
   D. Did all acct no's have water usage on PIMS? Yes ☐ No ☒
   E. If no to D, explain: New account 10555626-00 - Utility Def Alpha is complete in eCIS+. Water usage should appear in PIMS during the next import.

2. PROCESSES & CLEANUP/WASHDOWN:

	Cont/ Batch?	Water/Liquids Used?	DISCHARGE Frequency (or how else disposed?)	Sample pt.
Medical university with research and testing labs	Cont	Yes	Daily	001,003,005,007,008,009,011
Housing and care of research mice and other animals	Cont	Yes	Daily	003,005,007,008,009
Kitchen services	Batch	Yes	Daily	005, 008
Hazardous materials clean-up	Batch	Yes	Daily	010
	(None)	N/A		
	(None)	N/A		

3. PRETREATMENT (other than grease traps) - describe:

	Sample pt.
pH neutralization	001, 003, 005, 007, 008, 009, 010, 011
Silver recovery	001, 003, 005, 008, 009, 011

4. DOES COMPANY HAVE ANY GREASE TRAPS? Yes☒ No☐

If yes:
- A. List sample points: 005, 008 & 012
- B. What is the frequency for cleaning & maintenance? Annually
- C. Were cleaning & maintenance logs reviewed for to verify frequency? (must be done) Yes☒ No☐
- D. If No to C: Explain: _____
- E. Has company been in SNC in the past two years for food-based oil & grease violations? Yes☐ No☒
- F. If Yes to E: Is frequency for cleaning & maintenance at least once/quarter? NA☒ Yes☐ No☐
- G If No to F, require company to begin cleaning at least once/quarter. Was this done? NA☒ Yes☐ No☐
- H. Are any additives used in traps? Yes☐ No☒
- I. If yes to H, was company warned MSD will bill them for blockages they cause? NA☒ Yes☐ No☐
- J. Was company informed that MSD performs separate grease trap inspections? Yes☒ No☐

5. HAS COMPANY CONSTRUCTED NEW BLDGS/ADDITIONS WITH SEWERS SINCE LAST INSPECTION? Yes☐ No☒

If yes:
- A. Ask company: Did they notify MSD's Plan Review group? Unknown☐ Yes☐ No☐
- B. If no or unknown, has inspector notified Plan Review group? Yes☐ No☐
- C. Comments: _____

6. HAS COMPANY BEGUN DISCHARGING ANY NEW POLLUTANTS SINCE THE LAST INSPECTION? Yes☐ No☒

If yes:
- A. List pollutants & process: _____
- B. Will MSD STP exceed existing NPDES discharge limit(s)? Yes☐ No☐
- C. Will MSD STP's discharge exceed 0.1 mg/l for any new pollutant? Yes☐ No☐
  (MSD must notify MDNR if B or C is yes and discharge will continue [40CFR122.42(b)].)
- D. Comments: _____

7. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS THAT ARE "NOT APPLICABLE"? Yes☐ No☒
(including those that are 'No PSES' and 'General Stds Only')

If yes:
- A. List regulation & describe operations (including any discharge):
  _____
- B. Explain why it is N/A: _____

8. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS SUBJECT TO DISCHARGE LIMITS? Yes☐ No☒

If yes:
- A. List regulation & describe operations (including any discharge):
  _____
- B. Is maximum daily categorical discharge ≤ 100 GPD? (includes batch discharges) Yes☐ No☐

If yes to B:
- C. Batch ☒ or Continuous ☐? Volume verified how? _____
- D. Does company ever discharge untreated, concentrated categorical wastewater? Yes☐ No☐
- E. Was company in SNC during any part of the previous **24** months? Yes☐ No☐
- F. Date of last NSCIU Certification Statement: _____ or not currently NSCIU ☐
  (If no to B, yes to D or E, or Cert. Statement not submitted as required, company is not eligible to be an NSCIU)

9. HAS COMPANY CERTIFIED TO THE ABSENCE OF SPECIFIC CATEGORICAL POLLUTANTS? Yes☐ No☒
(New certification also is required for each permit renewal)

If yes:
- A. Certification date: _____
- B. Pollutants accepted by MSD as absent: _____
- C Were any requested "absent" pollutants rejected by MSD? Yes☐ No☐

If yes to C: D. List them and explain why: _____

- E. Were all the accepted pollutants non-detect in all monitoring since certification was approved? Yes☐ No☐
  (If compared to intake water levels, explain details below)

If no to E: F. Explain: _____
- G. Does Wastewater Discharge Permit need to be updated to remove detected pollutants? Yes☐ No☐
- H. Comments: _____

10. DOES CATEGORICAL WASTEWATER COMBINE WITH NON-CATEGORICAL WW PRIOR TO SAMPLING? Yes☐ No☒

If yes:
- A. At which points? _____
- B. Current applied factor: _____ Is it correct? Yes☐ No☐
- C. If no, list correct factor/explain? _____

11. IS ANY WASTEWATER SUBJECT TO PRODUCTION ☐ OR MASS ☐ BASED STANDARDS? Yes☐ No☒

If yes: A. At which points? _____

B. Since calculation of the current limits, has the long term avg production rate or discharge volume changed by 20% or more? Yes☐ No☐

C. If yes to B, explain: _____

12. ARE ANY RADIOACTIVE MATERIALS HANDLED? Yes☒ No☐

If yes: A. Describe operations & disposal: Radioactive materials are used as part of research activities and educational purposes. All radioactive materials are collected and transported to the EHS building for storage/disposal. Some liquid materials are allowed to decay on site in a segregated room prior to being discharged to the sewer system.

B. If non-exempt & disposed to sewer, does company submit quarterly reports to MSD? NA☐ Yes☒ No☐

(If No to B, write company & require quarterly reports of discharge to sewer – or have permit revised as needed)

C. Amount discharged in most recent four complete calendar quarters: 21.0003 MCI

D. Is company in compliance with requirements of sewer use ordinance prohibition? Yes☒ No☐

13. DOES COMPANY GENERATE WASTES/WASTEWATER BY GENETIC ENGINEERING RESEARCH? Yes☐ No☒

If yes: A. Does company render wastes/wastewater innocuous? Yes☐ No☐

B. If yes, describe how: _____

C. Does company have MSD authorization for disposal to sewer? NA☐ Yes☐ No☐

D. Most recent authorization date: _____

14. DOES PROCESS or P&E WASHDOWN WATER USE APPEAR EXCESSIVE? Yes☐ No☒

(IS COMPANY USING DILUTION TO MEET DISCHARGE LIMITATIONS?)

A. Explain how use was verified & any needed changes:

This large campus uses a significant amount of water for research and laboratory activities. Other sources of moderate water use include R/O systems, kitchen services and general P&E washdown. No excessive water usage was noted during the inspection walkthrough.

15. BASED ON OBSERVATIONS DURING INSPECTION, DOES COMPANY APPEAR TO HAVE SOME WATER THAT IS NOT DISCHARGED TO SEWER? Yes☒ No☐

If yes: A. Describe: Evaporative loss from HVAC systems and some lawn irrigation.

B. Was "Return Factor Program" brochure given to company? Yes☒ No☐

(regardless of whether some water is not discharged to sewer)

16. HAS COMPANY BEEN GRANTED A VARIANCE FROM DISCHARGE LIMITATIONS CONTAINED IN THE SEWER USE ORDINANCE? Yes☐ No☒

If yes: A. Pollutant(s) and variance limit: _____

B. Latest approval date: _____

C. Is the approved variance more than 5 years old? Yes☐ No☐

(If yes to C, a new variance must be requested – write company)

17. HAVE ANY NUMERICAL LIMITATIONS BEEN APPLIED TO COMPANY, IN ADDITION TO THOSE ALREADY CONTAINED IN THE SEWER USE ORDINANCE? Yes☐ No☒

If yes: A. Pollutant(s) and discharge limit: _____

B. Date originally applied: _____, or as part of variance above? ☐

18. HAS COMPANY EXCEEDED ORDINANCE DISCHARGE LIMITS SINCE LAST INSPECTION OR WITHIN THE LAST 12 MONTHS (if last insp <12 months ago)? Yes☐ No☒

If yes: A.

Pollutant	When	Sample Points	Is problem resolved? Y/N	Describe
			N/A	
			N/A	
			N/A	
			N/A	
			N/A	

B. Comments: _____

19. HAS COMPANY EXCEEDED CATEGORICAL PRETREATMENT LIMITS SINCE THE LAST INSPECTION OR WITHIN LAST 12 MONTHS (if last insp <12 months ago)? NA☒ Yes☐ No☐

If yes: A.

Pollutant	When	Sample Points	Is problem resolved? Y/N	Describe
			N/A	
			N/A	
			N/A	
			N/A	
			N/A	

B. Comments: _____

20. HAVE THERE BEEN ANY PROBLEM DISCHARGES SINCE LAST INSPECTION? Yes☐ No☒

If yes: A. Upsets? ☐ Bypasses of pretreatment facilities? ☐
Spills? ☐ Slug discharges? ☐ Other? _____

B. Explain any marked: _____

21. COULD SPILLS OR LEAKS OF ANY PROCESS TANKS, OR STORAGE TANKS, OR STORED WASTES, OR STORED CHEMICALS EASILY REACH SANITARY SEWERS OR STORM DRAINS? Yes☐ No☒

If yes: A. What needs to be done?

_____

If no: B. How are they controlled?

Laboratories with solvents and other potentially hazardous reagents keep them stored in designated cabinets, and each lab has a spill kit with specific spill control items. In the EHS building, general facility spill kits are located here as well as for the building itself. In the hazardous waste storage room, solvent and lab pack drums are stored on containment pallets. Radioactive waste are stored on shelves for decay, and drums to be shipped out are on containment pallets. There are no floor drains in the these waste storage areas.

22. DOES COMPANY HAVE ANY NPDES PERMITS? Yes☐ No☒

If yes: A. Receiving stream:_____

B. Does it have a MDNR general permit for stormwater discharges from industrial activities? Yes☐ No☐

If yes to B: Permit #: MO-R_____

C. Does it have a MDNR general permit for wastewater discharges? Yes☐ No☐

If yes to C: Permit #: MO-G_____ Permitted activity:_____

D. Does it have a MDNR site specific permit for wastewater discharges? Yes☐ No☐

If yes to D: Permit #: MO0_____

Outfall	Description	Vol (GPD)	Components

E. Comments: _____

23. BASED ON OBSERVATIONS DURING INSPECTION, ARE THERE ANY AREAS WHERE COMPANY ACTIVITIES APPEAR TO IMPAIR STORMWATER RUNOFF? Yes☐ No☒

If yes:
- A. Describe: _____
- B. What needs to be done? _____
- C. Was "Illicit Stormwater Discharges" brochure given to company? (regardless of whether there are any problem areas) Yes☒ No☐

24. DOES COMPANY HAVE ANY WRITTEN SLUG DISCHARGE CONTROL (INCLUDES SPILLS) PLANS [40CFR403.8(f)(2)(vi)]? Yes☒ No☐

If yes:
- A.

	Title (actual title, NOT "SPCCP")	Last Update
1.	Contingency Plan	3/1/16
2.	SPCCP	2/13/14

- B. Were Plans reviewed for completeness, especially regarding batch discharges/slugs and Q.19/20/21? (must be done) Yes☒ No☐
- C. Are updates needed to existing Plans? (If yes, write company & require) Yes☐ No☒
- D. Are any Plans needed (either in addition to those listed in Part A, or if there currently are no written control plans)? (If yes, write company & require) Yes☐ No☒
- E. Explain why/why not for C or D: The plans appear to be comprehensive and include spill handling procedures and emergency contact information. The SPCCP is currently being updated.

25. DOES COMPANY HAVE ANY MAINTENANCE SHOP PARTS WASHERS? Yes☐ No☒

If yes:
- A. Parts washer solvent name: _____
- B. Priority pollutants (or "none"): _____
- C. How is spent solvent disposed? _____

(These solvents are not included in database's priority pollutants list, nor monitored for unless conditions show potential discharges)

26. ARE ANY ORGANICS OR SOLVENTS USED (OTHER THAN IN PARTS WASHERS)? Yes☒ No☐

If yes:

A. Solvent name/ components	Used for?	413/433/469 Process?	How disposed?	Priority Pollutant?
Numerous solvents in various laboratories (refer to pollutants list on IDS)	Lab reagents	Yes☐ No☒	Hauled off site	Yes☒ No☒
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐

27. DOES COMPANY HAVE A 413/433/469-REGULATORY "SOLVENT MANAGEMENT PLAN"? Yes☐ No☒
(Applies if co. has 413/433/469 processes, whether or not solvents used)

If yes:
- A. Is it part of a Spill/Slug Control Plan listed above? Yes[1.☐ 2.☐] No☐
- B. If no to A, date of last update for SMP: _____
- C. Is there a copy of the Spill/Slug Plan or SMP in the files? Yes☐ No☐
- D. Does SMP address all 413/433/469 solvents? (or verify "none" ☐) Yes☐ No☐
(If no to C or D, write company and require submittal and/or update)

28. ARE EMERGENCY NOTIFICATION PROCEDURES POSTED THAT INCLUDE MSD CONTACTS? Yes☒ No☐
- A. Was company provided notification cards & told to post where emergency response personnel can locate them? Yes☒ No☐
(Must post if company generates process wastewater or stores chemicals of concern)

29. IS COMPANY REQUIRED TO SELF-MONITOR ANY OF THEIR DISCHARGES? Yes☒ No☐

If yes:
- A. Is requirement contained in permit ☒ or other document ☐.
- B. If other document, date & description: _____
- C. How frequently is sampling required? Quarterly
- D. How frequently are reports required? Quarterly
- E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐
- F. If no, explain: _____

30. DOES COMPANY SELF-MONITOR ITS WASTEWATER DISCHARGE? Yes☒ No☐

If yes:
- A. Does sample collection time period match co's production shifts? Yes☒ No☐
- B. Are representative grab/comp samples collected? Yes☒ No☐
- C. Are EPA-approved 40 CFR 136 wastewater test methods used? Yes☒ No☐
- D. Does company measure pH and/or temperature itself? Yes☐ No☒

If yes: E. Have the company show equipment and procedure (meters, calibration stds, etc.). Is measurement performed properly? Yes☐ No☐

- F. If no to A,B,C, or E, _____ explain needed changes:

31. DOES COMPANY CONTINUOUSLY MONITOR AT SAMPLE POINT AND KEEP A PERMANENT RECORD FOR: pH ☐, TEMP ☐, LEL ☐? Yes☐ No☒

If yes:
- A. At which SPs? _____
- B. Are discharge limits in PIMS "alert only"? (If not, change to that & make note: _____) Yes☐ No☐
- C. Does company submit quarterly summaries? Yes☐ No☐
- D. If no, explain: _____

32. DOES MSD SPLIT SAMPLES WITH THE COMPANY? Yes☐ No☒

If yes:
- A. Is company having the samples analyzed Yes☐ No☐
- B. How does company insure proper preservation, holding times & analytical methods? _____
- C. Has company submitted results of all split sample analyses since the last insp? Yes☐ No☐
- D. Have results been submitted within 28 days of the collection's calendar quarter? Yes☐ No☐
- E. If no to C, or D, explain: _____
- F. Does company still want to split samples? Yes☐ No☐
- G. Comments: _____

33. IS COMPANY REQUIRED TO REGULARLY SUBMIT ANY REPORTS OTHER THAN SELF-MONITORING REPORTS? Yes☒ No☐

If yes:
- A. Is requirement contained in permit ☒ or other document ☐.
- B. If other document, date & description: _____
- C. What is required to be reported? Radioactive Material Discharge
- D. How frequently are reports required? Quarterly
- E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐
- F. If no, explain: _____

34. IS COMPANY UNDER ANY ENVIRONMENTAL ENFORCEMENT ORDERS OR REQUIREMENTS TO SUBMIT COMPLIANCE SCHEDULE REPORTS? Yes☐ No☒

If yes:
- A. Type and date: _____
- B. Have the reports & actions been on-time & complete? Yes☐ No☐
- C. If no, explain: _____

35. ASK COMPANY: IS COMPANY IN COMPLIANCE W/APPLICABLE NESHAP REGULATIONS FOR WW DISCHARGES? Yes☒ No☐
[To see if 40CFR63 applies to MSD plant, per §§63.1580(b) & 63.1582(a). Some MDNR-issued Title V air permits for specific processes allow pre-approved WW discharge. City/County-issued air permits are not NESHAP permits.]

If no:
- A. Describe: _____
- B. Was MDNR Air Pollution Control informed? (must be done) Yes☐ No☐

36. DOES COMPANY RETAIN ALL WASTEWATER RECORDS FOR AT LEAST 5 YEARS? Yes☒ No☐

If no: A. How long does company retain records? _____

B. Was company told to retain for at least 5 years, per ordinance? Yes☐ No☐

C. Where are they kept? EHS building files at 4522 McKinley Ave.

37. IS COMPANY CLASSIFIED AS A SIGNIFICANT INDUSTRIAL USER (SIU)? Yes☒ No☐

If yes: A. Check & explain applicable criteria:

- ☐ Process subject to categorical stds under 40 CFR 403.6. Which cat. stds? _____
- ☒ Process discharge => 25,000 GPD Total process volume: 106,050 GPD
- ☐ Process discharge => 5% of TP ADW hydraulic capacity TP ADW hydraulic capacity: _____. Percent: _____
- ☐ Process discharge => 5% of TP ADW organic capacity Which organic pollutant? _____
  TP ADW organic capacity: _____. Percent: _____
- ☐ Reasonable potential for adverse effect on operations Why? _____
- ☐ Reasonable potential for violating PT std or req't Which ones & why? _____

B. Does company own its bldg (is it listed as the owner in E-CIS)? Yes☒ No☐

If no: C. What is Bldg owner name (use DBA if avail.)? _____
(check E-CIS CAPS Customer Info)

D: What is Bldg owner mailing address? _____
(check E-CIS CAPS Customer Info)

38. DO MSD CLASSIFICATIONS NEED TO BE REVISED? Yes☐ No☒

If yes: A. Indicate correct classifications:

SIU ☐ Non-Significant CIU ☐ CIU ☐ Surcharge ☐ Non-Toxic Process Water/Wastes ☐
Toxics-Bearing Waste ☐ No Process Discharge ☐ Multi-User ☐ Special Handling/Billing ☐

B. Explain changes: _____

39. IS COMPANY CLASSIFIED AS "Multi-User"? Yes☐ No☒

If yes: A. Is company's discharge segregated from other tenants' discharge? Yes☐ No☐

B. If no to A, does the company own the bldg/receive the MSD bills? Yes☐ No☐

C. If yes to B, was company informed it is responsible for total discharge, or else must provide segregated sample points? Yes☐ No☐

D. If no to B, are any Process/P&E Wash-type wastes discharged? Yes☐ No☐

E. If yes to D, are the wastes completely innocuous? Yes☐ No☐
(And explain why/why not: _____)

F. If yes to D, and no to E, company must accept responsibility or provide segregated SP.
Acceptance letter date: _____ Or write company with requirement ☐

G. If no to D or yes to E, are limits "alert only" on PIMS? Yes☐ No☐

H. Comments: _____

40. IS COMPANY CLASSIFIED AS "Special Handling/Billing"? Yes☐ No☒

If yes: A. Why? _____

B. Are any changes needed to reasons/details? Yes☐ No☐

C. If yes, explain: _____

D. Were company records reviewed & verified for special handling/billing reports? NA☐ Yes☐ No☐

41. SAMPLE POINTS

						Auto-sampler ready?	DJ (y/n)
SP #	001	Fed.Reg.	N/A	Components:	Sanitary, P&E wash, process waste, RO reject, lab waste, CT blowdown, storm water	Yes	No
SP #	003	Fed.Reg.	N/A	Components:	Sanitary, P&E wash, process waste, CT blowdown, storm water, lab waste	Yes	No
SP #	005	Fed.Reg.	N/A	Components:	Sanitary, RO reject, boiler blowdown, P&E wash, process waste, lab waste, kitchen waste, CT blowdown, storm water	Yes	No
SP #	007	Fed.Reg.	N/A	Components:	Sanitary, lab waste, P&E wash, CT blowdown, storm water	Yes	No
SP #	008	Fed.Reg.	N/A	Components:	Sanitary, process waste, lab waste, P&E wash, RO reject, CT blowdown, storm water, kitchen waste	Yes	No
SP #	009	Fed.Reg.	N/A	Components:	Sanitary, process waste, lab waste, P&E wash, RO reject, CT blowdown, storm water	Yes	No
SP #	010	Fed.Reg.	N/A	Components:	Sanitary, P&E wash	Yes	No
SP #	011	Fed.Reg.	N/A	Components:	Sanitary, process waste, lab waste, P&E wash, RO reject, CT blowdown, storm water	Yes	No

42. ARE ANY SAMPLE POINTS TRAPPED VENTS? Yes☒ No☐

If yes: A. List SPs: SP010

B. Was co. informed that T-vents are preferred, and told why? Yes☒ No☐

43. ARE DISCHARGES AT ANY SPs SMALL/IRREGULAR ENOUGH TO ALLOW GRAB SAMPLES? Yes☐ No☒

If yes: A. List SPs and reasons: _____

44. ARE THERE ANY UNSAMPLED DISCHARGES? (list each lateral separately) Yes☒ No☐

Dummy SP #	012	Components:	Sanitary
Dummy SP #		Components:	

If yes: A. Was company informed that SPs may be required in the future if the discharges change? Yes☒ No☐

B. Are all unsampled discharges very low flow and/or innocuous? Yes☒ No☐

C. If No to B, explain:_____

(Must also write company and require installation of SP)

45. DO ANY SAMPLE POINTS (including Unsampled/Dummy SPs) RECEIVE STORMWATER? Yes☒ No☐

If yes: A. List Sample Points: 001, 003, 005, 007, 008, 009, 011

46. WERE ALL SAMPLE POINTS (except Dummy SPs) OPENED & INSPECTED? No SPs☐ Yes☒ No☐

A. If any SPs cannot be located or opened, explain: _____

B. If any SP descript's need to be changed, explain: _____

C. Is it possible to use an auto-sampler to collect samples (regardless of volume or batches)? Yes☒ No☐

Update PIMS indicator as needed.

D. Was ANY grease or other problem/debris observed in any SP? Yes☐ No☒

E. If yes to C, list SPs & describe: _____

F. If yes to C, was company directed to take corrective actions? Yes☐ No☐

47. REVIEW THE SAMPLE POINT MAP! Last map revision date: 9/29/15

A. Is the map correct and accurate in all its details? Yes☒ No☐

B If no, what changes are needed: _____

48. DO INSTRUCTIONS FOR "Contact Prior to Sampling" or FIELD VISIT "Special Instructions" NEED REVISION? Yes☐ No☒

If yes: A. List needed changes: _____

USE THIS SPACE FOR ANY OTHER COMMENTS/OBSERVATIONS PERTINENT TO YOUR INSPECTION OF THIS SITE.

The MCC (Mid Campus Center, Building 29) is now complete. As mentioned at the end of the 1/10/17 inspection report, the MCC at 4950 Children's Place is will have an estimated 2,500 employees at full occupancy and will be for administrative offices only with predominantly sanitary discharge. The only change, however, is that a small grease trap was discovered in the new Kaldi's coffee shop during the inspection. This is a very small retail coffee shop that serves only food that is brought in - no cleaning of cooking equipment. No frying takes place, and it is assumed that the trap was installed as a precaution. The volume of discharge is minimal and will be considered a part of the total sanitary discharge from the building. A new lateral has been created (#10) along with Dummy SP012. If conditions of the building's discharge change in the future, a potential sample point manhole may be utilized. MSD billing now has an active account number for 4950 Children's Place - this account has been added to PIMS as a secondary account.

The MCC grease trap for the Kaldi's Coffee shop is the 5th trap at the facility - there were four grease traps as of the 1/10/17 inspection. The trap locations are as follows. SP005: 1. Main kitchen at McDonnell Science (Bldg 12); 2. Farrell Learning & Teaching Center (FLTC, Bldg 98); SP008: 3. "Farmstead" (formerly Starbucks, Bldg 16); 4. EPNEC (Bldg 11). SP012: MCC Kaldi's Coffee (Bldg 29).

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

INDUSTRIAL USER CLASSIFICATIONS

01/12/1999	SIU
06/09/1998	TOX

WUNNENBERG INFO.

Base Map 19G3
Wun:St. Louis City & Co.
Grid: J 20 Page 26

SIU CRITERIA

PR25 Process Disch => 25,000 GPD

GENERAL INFORMATION

Office Mailing Address
660 S. Euclid Ave., Campus Box 8229
St. Louis, MO. 63110

Billing Address
660 S. Euclid Ave.
St Louis, MO. 63110

INSPECTION INFORMATION

Next Due	Insp Rslt	
11/21/2017	RIN	Jason Gill

PERMIT INFORMATION

Issue Date: 01/01/2018
Expire Date: 12/31/2022
Extended Date:
Writer

IUQ INFORMATION

IUQ Recvd Date: 08/19/2002
Reviewer: Fabian Grabski
IUQ Recvd Date: 06/28/2007
Reviewer: James Goodall
IUQ Recvd Date: 07/13/2012
Reviewer: Jason Gill
IUQ Recvd Date: 09/16/2015
Reviewer: Mike Kynion
IUQ Recvd Date: 06/26/2017
Reviewer: Jason Gill

CONTACTS

BILL	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
FLD1	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
	Livi Isringhausen	Environmental Compliance Manager	CELL	(618) 410-6140 Ext.
FLD2	Linda Vishino	Environmental Compliance Officer	OFF	(314) 935-7864 Ext.
FLD3	Ted Reising	Environmental Professional IV	CELL	(314) 277-0423 Ext.
	Ted Reising	Environmental Professional IV	OFF	(314) 362-1095 Ext.
OFF1	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
	Livi Isringhausen	Environmental Compliance Manager	FAX	(314) 362-1095 Ext.

OPERATIONAL INFORMATION

Work Days: 7

				S	M	T	W	T	F	S
1	8,500	09:00AM	8.0	Y	Y	Y	Y	Y	Y	Y
2	600	06:00PM	8.0	Y	Y	Y	Y	Y	Y	Y

Total Emp: 9,100 Hrs: 16.0

OTHER AGENCIES INFORMATION

01/03/1997	Nuclear Regulatory Commission	24-00167-11
01/04/1997	MDNR - Hazardous Waste Program	001591
01/05/1997	EPA - Hazardous Waste Program	MOT300010857
09/28/2005	MSD - Billing Account Number	00377308
09/28/2005	MSD - Billing Account Number	00246496
09/28/2005	MSD - Billing Account Number	00246498
09/28/2005	MSD - Billing Account Number	00246499
07/21/2011	MSD - Billing Account Number	00473620
12/17/2015	MSD - Billing Account Number	01080052
12/17/2015	MSD - Billing Account Number	01080045

NON-SEWERED WASTE

On-Site Storage Y On-Site Disposal N Off-Site Disposal Y

06/26/2017	Equipment Oils and/or		8,000	LBS
06/26/2017	Infectious Waste		400,000	LBS
06/26/2017	Kitchen/Food Service		6,000	LBS
06/26/2017	Radioactive Waste		1,500	LBS
06/26/2017	Solvents/Thinners		40,000	LBS
06/26/2017	Other	Labpacks and reageants	14,000	LBS

COMMENTS

RAW MATERIALS

EFF DATE	MATERIAL_DESCRIPTION	QUANTITY	UNIT
05/07/2004	Laboratory chemicals & reagents		

SIC INFORMATION

SIC	DESCRIPTION
0279	Animal Specialties, NEC
8221	Colleges, Universities & Professional Schools
8733	Noncommercial Research Organizations

Report No. PIMS012A 01/17/2018 6:59:31 am
Data Date & Time: 01/17/2018 6:59:31 am

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

PRODUCTS

EFF DATE	DESCRIPTION	UNIT	AVG_PROD	MAX_PROD
05/07/2004	Medical school			
05/07/2004	Research institution			
05/07/2004	Research animal care & housing			

SEWER ACCOUNTS

Sewer Accounts
1024353000
1024353200
1024353300
1037377700
1048106300
1052452801
1055344000
1055562600

WATER CONSUMPTION AND WASTEWATER DISCHARGE

Start Date = 01/01/2017 End Date = 01/01/2018

Acct. No.			Consumption CCF's	Consumption Gallons		Wdays	Cdays		Discharge Gal/ Wday	Discharge Gal/ Cday
1024353000			**CCF's**	**Gallons**					**Gal/ Wday**	**Gal/ Cday**
1024353000	12/16/2016	03/15/2017	10,318	10,318	A	90	90		90	
1024353000	03/16/2017	05/12/2017	10,131	20,449		58	58		148	
RF	0.90	Acct. Total	20,449	15,296,915		148		148	93,022	93,022
1024353200			**CCF's**	**Gallons**					**Gal/ Wday**	**Gal/ Cday**
1024353200	11/15/2016	03/13/2017	18,105	18,105	A	119	119		119	
1024353200	03/14/2017	06/16/2017	17,248	35,353		95	95		214	
RF	0.68	Acct. Total	35,353	26,445,882		214		214	84,034	84,034
1024353300			**CCF's**	**Gallons**					**Gal/ Wday**	**Gal/ Cday**
1024353300	12/17/2016	03/17/2017	495	495	A	91	91		91	
1024353300	03/18/2017	06/08/2017	502	997		83	83		174	
RF	1.00	Acct. Total	997	745,808		174		174	4,286	4,286
1037377700			**CCF's**	**Gallons**					**Gal/ Wday**	**Gal/ Cday**
1037377700	11/02/2016	02/01/2017	3,591	3,591	A	92	92		92	
1037377700	02/02/2017	05/03/2017	3,976	7,567		91	91		183	
RF	0.77	Acct. Total	7,567	5,660,509		183		183	23,817	23,817
1048106300			**CCF's**	**Gallons**					**Gal/ Wday**	**Gal/ Cday**
1048106300	11/02/2016	02/01/2017	14,086	14,086	A	92	92		92	
1048106300	02/02/2017	05/03/2017	17,984	32,070		91	91		183	
RF	1.00	Acct. Total	32,070	23,990,028		183		183	131,093	131,093
1052452801			**CCF's**	**Gallons**					**Gal/ Wday**	**Gal/ Cday**
1052452801	12/16/2016	02/01/2017	622	622	A	48	48		48	
1052452801	02/02/2017	05/03/2017	1,113	1,735		91	91		139	
RF	1.00	Acct. Total	1,735	1,297,870		139		139	9,337	9,337
1055344000			**CCF's**	**Gallons**					**Gal/ Wday**	**Gal/ Cday**
1055344000	12/16/2016	03/10/2017	249	249	A	85	85		85	
1055344000	03/11/2017	06/13/2017	292	541		95	95		180	
RF	1.00	Acct. Total	541	404,696		180		180	2,248	2,248
		Facility Total	98,712							

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave. St. Louis MO. 63110

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
01	LAT - Sanitary Or San+Storm (Combined)	20G2	507C	Trunk Sewer	BP37 - Western Mill Creek

Description Lateral from buildings located S of McKin

Sewer Route S on Taylor to Clayton Av, E to Boyle, N t

SAMPLE POINT NO. 001 SP - Ordinance Only **NPDES Outfall No.**

Description Flow from W in MH 30' N, 10' W of NE corner of building 27 (in alley)

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		1,857	GPD		GPD	D	6/26/17
Plant & Equipment		247	GPD		GPD	D	6/26/17
Process Waste	Photographic & teaching labs	354	GPD		GPD	D	6/26/17
Sanitary		2,744	GPD		GPD	D	6/26/17
Storm Water		0	GPD		GPD	D	6/26/17
Laboratory Waste	Research labs	915	GPD		GPD	D	6/26/17
Cooling Tower Blo		1,716	GPD		GPD	D	6/26/17
	Total Flow Avg =	7,833		Max =			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
010	LAT - Sanitary Or San+Storm (Combined)	19G3	180C	Trunk Sewer	BP37 - Western Mill Creek

Description Line exiting N side of MCC building (495

Sewer Route Flow N from bldg to main on Children's Pl

SAMPLE POINT NO. 012 SP - Dummy Point **NPDES Outfall No.**

Description No sample point available

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Sanitary		50,000	GPD		GPD	D	11/21/1
	Total Flow Avg =	50,000		Max =			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
02	LAT - Sanitary Or San+Storm (Combined)	19G3	229C	Trunk Sewer	BP37 - Western Mill Creek

Description Lateral from buildings N&S of Scott Av &

Sewer Route S on Taylor to Clayton Av, E to Boyle, N t

SAMPLE POINT NO. 005 SP - Ordinance Only **NPDES Outfall No.**

Description MH 200' W of Taylor Ave. on S side of Scott Ave. in street

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		14,412	GPD		GPD	D	6/26/17
Boiler Blowdown		17,449	GPD		GPD	D	6/26/17
Plant & Equipment		878	GPD		GPD	D	6/26/17
Process Waste		370	GPD		GPD	D	6/26/17
Sanitary		33,188	GPD		GPD	D	6/26/17
Storm Water		0	GPD		GPD	D	6/26/17
Laboratory Waste	Research labs	41,089	GPD		GPD	D	6/26/17
Kitchen Waste		4,037	GPD		GPD	D	6/26/17
Cooling Tower Blo		38,728	GPD		GPD	D	6/26/17
	Total Flow Avg =	150,151		Max =			

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Lemay
03	LAT - Sanitary Or San+Storm (Combined)	19G3	543C	Trunk Sewer	LE79 - River des Peres - Upper

Description Lateral N from Building 14 W of Euclid A

Sewer Route W across S Kingshighway Blvd into Fores

SAMPLE POINT NO. 003 SP - Ordinance Only **NPDES Outfall No.**

Description Flow from S in MH N of building 14 in drive, 6' S of O2 tanks

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment		1,150	GPD		GPD	D	6/26/17
Process Waste	Photographic & teaching labs	288	GPD		GPD	D	6/26/17
Sanitary		16,878	GPD		GPD	D	6/26/17
Storm Water		0	GPD		GPD	D	6/26/17
Laboratory Waste	Research labs & animal care	12,291	GPD		GPD	D	6/26/17
Cooling Tower Blo		3,231	GPD		GPD	D	6/26/17
	Total Flow Avg =	**33,838**		**Max =**			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
05	LAT - Sanitary Or San+Storm (Combined)	20G2	513C	Trunk Sewer	BP37 - Western Mill Creek

Description Multiple lines from Bldg 63 N to McKinle

Sewer Route E on McKinley to Taylor, S to Clayton, E t

SAMPLE POINT NO. 007 SP - Ordinance Only **NPDES Outfall No.**

Description Manhole in sidewalk E of Bldg 63; 111' N, 2' E of SE corner of building

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment		3,939	GPD		GPD	D	6/26/17
Sanitary		2,770	GPD		GPD	D	6/26/17
Storm Water		0	GPD		GPD	D	6/26/17
Laboratory Waste	Lab research & animal care	5,451	GPD		GPD	D	6/26/17
Cooling Tower Blo		218	GPD		GPD	D	6/26/17
	Total Flow Avg =	**12,378**		**Max =**			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Lemay
06	LAT - Sanitary Or San+Storm (Combined)	19G3	492C	Trunk Sewer	LE82 - Euclid

Description Line exiting N side of Bldg 4 (425 S. Eucl

Sewer Route Flow N from bldg to main on Children's Pl

SAMPLE POINT NO. 008 SP - Ordinance Only **NPDES Outfall No.**

Description MH in plaza 27' W, 27' N of NE bldg corner

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		17,746	GPD		GPD	D	6/26/17
Plant & Equipment		2,361	GPD		GPD	D	6/26/17
Process Waste	Photographic & teaching labs	3,385	GPD		GPD	D	6/26/17
Sanitary		26,225	GPD		GPD	D	6/26/17
Storm Water		0	GPD		GPD	D	6/26/17
Laboratory Waste	Lab research & animal care	8,742	GPD		GPD	D	6/26/17
Cooling Tower Blo		16,394	GPD		GPD	D	6/26/17
	Total Flow Avg =	**74,853**		**Max =**			

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**

Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Lemay
07	LAT - Sanitary Or San+Storm (Combined)	19G3	791C	Trunk Sewer	LE82 - Euclid

Description Line exiting E side of Bldg 4 (425 S. Eucli

Sewer Route Flow E from bldg to main on Euclid, E on

SAMPLE POINT NO. 009 SP - Ordinance Only **NPDES Outfall No.**

Description MH in E plaza 36' N, 27' E of S NE bldg

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		17,746	GPD		GPD	D	6/26/17
Plant & Equipment		2,360	GPD		GPD	D	6/26/17
Process Waste		3,384	GPD		GPD	D	6/26/17
Sanitary		26,225	GPD		GPD	D	6/26/17
Storm Water		0	GPD		GPD	D	6/26/17
Laboratory Waste	Lab research & animal care	8,741	GPD		GPD	D	6/26/17
Cooling Tower Blo		16,394	GPD		GPD	D	6/26/17
	Total Flow Avg =	74,850		Max =			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
08	LAT - Sanitary Or San+Storm (Combined)	20G2	232C	Trunk Sewer	BP37 - Western Mill Creek

Description Line exiting W side of EHS Bldg to main (

Sewer Route N on Taylor, E along Metro Link, N on Ne

SAMPLE POINT NO. 010 SP - Ordinance Only **NPDES Outfall No.**

Description 6" trapped vent, 10'W, 36'N of EHS SW bldg corner

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment		256	GPD		GPD	D	6/26/17
Sanitary		290	GPD		GPD	D	6/26/17
	Total Flow Avg =	546		Max =			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
09	LAT - Sanitary Or San+Storm (Combined)	20G2	239C	Trunk Sewer	BP37 - Western Mill Creek

Description Line exiting N side of 4515 McKinley to n

Sewer Route N on Taylor, E along Metro Link, N on Ne

SAMPLE POINT NO. 011 SP - Ordinance Only **NPDES Outfall No.**

Description 12" vent 125'W, 30'N of NE bldg corner

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		7,119	GPD		GPD	D	6/26/17
Plant & Equipment		947	GPD		GPD	D	6/26/17
Process Waste	Photographic & teaching labs	1,358	GPD		GPD	D	6/26/17
Sanitary		10,521	GPD		GPD	D	6/26/17
Storm Water		0	GPD		GPD	D	6/26/17
Laboratory Waste	Lab research & animal care	3,507	GPD		GPD	D	6/26/17
Cooling Tower Blo		6,577	GPD		GPD	D	6/26/17
	Total Flow Avg =	30,029		Max =			

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**

Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

PRETREATMENT TYPES

SP	EFF DATE	TYPE	DESCRIPTION
001	07/13/2012	DC37	pH Adjustment/Neutralization
001	09/02/1998	DC32	Metallic Replacement
003	09/02/1998	DC32	Metallic Replacement
003	09/02/1998	DC37	pH Adjustment/Neutralization
005	06/16/1999	DC28	Grease Trap
005	07/17/2007	DC37	pH Adjustment/Neutralization
005	07/17/2007	DC32	Metallic Replacement
007	07/17/2007	DC37	pH Adjustment/Neutralization
008	07/26/2016	DC28	Grease Trap
008	07/13/2012	DC37	pH Adjustment/Neutralization
008	07/13/2012	DC32	Metallic Replacement
009	07/13/2012	DC32	Metallic Replacement
009	07/13/2012	DC37	pH Adjustment/Neutralization
010	09/15/2015	DC37	pH Adjustment/Neutralization
011	01/10/2017	DC37	pH Adjustment/Neutralization
011	09/15/2015	DC32	Metallic Replacement
012	11/21/2017	DC28	Grease Trap

PRIORITY POLLUTANTS

Pollutant Description	Status	Pollutant Description	Status	Pollutant Description	Status
Cyanide (Total)	KP	Asbestos (Fibrous)	KP	Antimony (Total)	SP
Silver (Total)	KP	Selenium (Total)	KP	Copper (Total)	KP
Cadmium (Total)	KP	Beryllium (Total)	SP	Zinc (Total)	KP
Thallium (Total)	KP	Nickel (Total)	KP	Mercury (Total)	KP
Lead (Total)	KP	Chromium (Total)	KP	Arsenic (Total)	SP
Di-n-octyl Phthalate	KP	Phenol	KP	4-Nitrophenol	KP
Pyrene	SP	Pentachlorophenol	KP	Nitrobenzene	KP
Hexachlorocyclopentadiene	KP	Gamma-BHC	KP	Benzo (A) Pyrene	KP
Benzidine	KP	Acrolein	KP	Toluene	KP
Methylene Chloride	KP	Chlorobenzene	KP	1,1,1-Trichloroethane	KP
Tetrachloroethene	KP	Chloroform	KP	Carbon Tetrachloride	KP
Benzene	KP	1,2-Dichloroethane	KP	1,1,2-Trichloroethane	KP
Acenaphthene	KP	2,3,7,8-Tetrachlorodibenzo-p-dioxin	KP	2,4-Dinitrotoluene	SP
Di-n-butyl Phthalate	KP	Anthracene	KP	2,4-Dichlorophenol	KP
2-Nitrophenol	KP	Phenanthrene	KP	Naphthalene	KP
Hexachloroethane	KP	Dieldrin	KP	1,2-Dichlorobenzene	KP
Trichloroethene	KP	Ethylbenzene	KP	Bromoform	KP
Acrylonitrile	KP	1,1,2,2-Tetrachloroethane	KP		

EXTRA STRENGTH SURCHARGE INFORMATION

Report No. PIMS012A 01/17/2018 6:59:31 am
Data Date & Time: 01/17/2018 6:59:31 am

PIMS FACILITY CONTACTS

For Account Number Selected **1024353000** **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
Located at 660 S. Euclid Ave.
St. Louis MO 63110

Address Type / Contact Type	Contact Name	Contact Title	Email	Signatory	Phone Type	Number	Ext.
Billing Address							
Billing Contact	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wustl.edu	Y	OFF	(314)362-6735	
Office Mailing Address							
Office Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wustl.edu	Y	FAX	(314)362-1095	
Office Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wustl.edu	Y	OFF	(314)362-6735	
Premise Address							
Field Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wustl.edu	Y	CELL	(618)410-6140	
Field Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wustl.edu	Y	OFF	(314)362-6735	
Field Contact 1st Alt	Linda Vishino	Environmental Compliance Officer		Y	OFF	(314)935-7864	
Field Contact 2nd Alt	Ted Reising	Environmental Professional IV	reisingt@wusm.wustl.edu	N	CELL	(314)277-0423	
Field Contact 2nd Alt	Ted Reising	Environmental Professional IV	reisingt@wusm.wustl.edu	N	OFF	(314)362-1095	

MSD 044966

PIMS
REPORT OF FIELD SAMPLING REQUIREMENTS
WASHINGTON UNIVERSITY MEDICAL SCHOOL

Account No Entered **1024353000**

SPN	PREMISE ADDRESS	CITY	ST	ZIP
	660 S. Euclid Ave.	St. Louis	MO	63110

001 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2018
	T237000	pH	Once/year	Grab	06/30/2018
	T247000	Temperature	Once/year	Grab	06/30/2018
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2018
	T257000	Total Phenols	Once/year	Grab	06/30/2018
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2018
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2018
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2018
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2018

003 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2018
	T237000	pH	Once/year	Grab	06/30/2018
	T247000	Temperature	Once/year	Grab	06/30/2018
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2018
	T257000	Total Phenols	Once/year	Grab	06/30/2018
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2018
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2018
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2018
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2018

005 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2018
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2018
	T237000	pH	Once/year	Grab	06/30/2018
	T247000	Temperature	Once/year	Grab	06/30/2018
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2018
	T257000	Total Phenols	Once/year	Grab	06/30/2018
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2018
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2018
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2018
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2018

007 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2018
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2018
	T237000	pH	Once/year	Grab	06/30/2018
	T247000	Temperature	Once/year	Grab	06/30/2018
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2018
	T257000	Total Phenols	Once/year	Grab	06/30/2018
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018

Account No Entered **1024353000**

SPN	PREMISE ADDRESS		CITY	ST	ZIP	
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab		06/30/2018
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs		06/30/2018
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs		06/30/2018
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab		06/30/2018

008 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2018
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2018
	T237000	pH	Once/year	Grab	06/30/2018
	T247000	Temperature	Once/year	Grab	06/30/2018
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2018
	T257000	Total Phenols	Once/year	Grab	06/30/2018
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2018
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2018
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2018
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2018

009 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2018
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2018
	T237000	pH	Once/year	Grab	06/30/2018
	T247000	Temperature	Once/year	Grab	06/30/2018
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2018
	T257000	Total Phenols	Once/year	Grab	06/30/2018
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2018
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2018
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2018
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2018

010 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2018
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2018
	T237000	pH	Once/year	Grab	06/30/2018
	T247000	Temperature	Once/year	Grab	06/30/2018
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2018
	T257000	Total Phenols	Once/year	Grab	06/30/2018
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018

Account No Entered **1024353000**

SPN	PREMISE ADDRESS		CITY	ST	ZIP	
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab		06/30/2018
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs		06/30/2018
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs		06/30/2018
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab		06/30/2018

011 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2018
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2018
	T237000	pH	Once/year	Grab	06/30/2018
	T247000	Temperature	Once/year	Grab	06/30/2018
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2018
	T257000	Total Phenols	Once/year	Grab	06/30/2018
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2018
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2018
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2018
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2018
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2018

SR
12-5

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2017 (Jan-Mar) (Apr-June) (July-Sept) √ (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2017 (Jan-Mar) (Apr-June) (July-Sept) √ (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

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2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

November 1, 2017
Lab No. 17E-1976
Invoice No. 235160

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 10/24/17, 9:30 A.M.
WASTEWATER COMPOSITE, SP001, 10/24/17, 9:30 A.M – 3:02 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.26	----	150.1	10/24/17
Temperature, °C (G)	20.0	----	170.1	10/24/17
Biological Oxygen Demand (C)	96	5	5210 B	10/26/17
Chemical Oxygen Demand (C)	197	10	5220 D	10/26/17
Total Suspended Solids (C)	38	5	160.2	10/30/17
Oil & Grease (G)	< 5	5	1664	10/27/17
Silver (C)	< 0.05	0.05	200.7	10/27/17
Total Phenol (G)	0.006	0.005	420.4	10/26/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

November 1, 2017
Lab No. 17E-1976
Invoice No. 235160

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 10/25/17, 9:00 A.M.
WASTEWATER COMPOSITE, SP003, 10/25/17, 9:00 A.M – 3:00 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.50	----	150.1	10/25/17
Temperature, °C (G)	21.1	----	170.1	10/25/17
Biological Oxygen Demand (C)	65	5	5210 B	10/26/17
Chemical Oxygen Demand (C)	175	10	5220 D	10/26/17
Total Suspended Solids (C)	86	5	160.2	10/30/17
Oil & Grease (G)	20	5	1664	10/27/17
Silver (C)	< 0.05	0.05	200.7	10/27/17
Total Phenol (G)	0.007	0.005	420.4	10/26/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

November 1, 2017
Lab No. 17E-1976
Invoice No. 235160

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 10/24/17, 8:40 A.M.
WASTEWATER COMPOSITE, SP005, 10/24/17, 8:40 A.M – 3:40 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.55	----	150.1	10/24/17
Temperature, °C (G)	19.8	----	170.1	10/24/17
Biological Oxygen Demand (C)	142	5	5210 B	10/26/17
Chemical Oxygen Demand (C)	284	10	5220 D	10/26/17
Total Suspended Solids (C)	121	5	160.2	10/30/17
Oil & Grease (G)	9	5	1664	10/27/17
Silver (C)	< 0.05	0.05	200.7	10/27/17
Total Phenol (G)	0.297	0.005	420.4	10/26/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

November 1, 2017
Lab No. 17E-1976
Invoice No. 235160

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 10/24/17, 9:09 A.M.
WASTEWATER COMPOSITE, SP007, 10/24/17, 9:09 A.M – 3:09 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.93	----	150.1	10/24/17
Temperature, °C (G)	24.6	----	170.1	10/24/17
Biological Oxygen Demand (C)	197	5	5210 B	10/26/17
Chemical Oxygen Demand (C)	428	10	5220 D	10/26/17
Total Suspended Solids (C)	214	5	160.2	10/30/17
Oil & Grease (G)	11	5	1664	10/27/17
Silver (C)	< 0.05	0.05	200.7	10/27/17
Total Phenol (G)	0.005	0.005	420.4	10/26/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

November 1, 2017
Lab No. 17E-1976
Invoice No. 235160

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 10/25/17, 9:25 A.M.
WASTEWATER COMPOSITE, SP008, 10/25/17, 9:25 A.M – 3:08 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.62	----	150.1	10/25/17
Temperature, °C (G)	21.7	----	170.1	10/25/17
Biological Oxygen Demand (C)	365	25	5210 B	10/26/17
Chemical Oxygen Demand (C)	815	50	5220 D	10/26/17
Total Suspended Solids (C)	387	5	160.2	10/30/17
Oil & Grease (G)	196	5	1664	10/27/17
Silver (C)	< 0.05	0.05	200.7	10/27/17
Total Phenol (G)	0.037	0.005	420.4	10/26/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

November 1, 2017
Lab No. 17E-1976
Invoice No. 235160

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 10/25/17, 9:15 A.M.
WASTEWATER COMPOSITE, SP009, 10/25/17, 9:15 A.M – 3:15 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.39	----	150.1	10/25/17
Temperature, °C (G)	22.1	----	170.1	10/25/17
Biological Oxygen Demand (C)	408	10	5210 B	10/26/17
Chemical Oxygen Demand (C)	1096	20	5220 D	10/26/17
Total Suspended Solids (C)	250	5	160.2	10/30/17
Oil & Grease (G)	78	5	1664	10/27/17
Silver (C)	< 0.05	0.05	200.7	10/27/17
Total Phenol (G)	0.045	0.005	420.4	10/26/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

November 1, 2017
Lab No. 17E-1976
Invoice No. 235160

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 10/24/17, 8:54 A.M.
WASTEWATER COMPOSITE, SP010, 10/24/17, 8:54 A.M – 2:54 P.M.

Units: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.55	----	150.1	10/24/17
Temperature, °C (G)	17.7	----	170.1	10/24/17
Biological Oxygen Demand (C)	114	5	5210 B	10/26/17
Chemical Oxygen Demand (C)	514	10	5220 D	10/26/17
Total Suspended Solids (C)	304	5	160.2	10/30/17
Oil & Grease (G)	70	5	1664	10/27/17
Silver (C)	< 0.05	0.05	200.7	10/27/17
Total Phenol (G)	0.118	0.005	420.4	10/26/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

November 1, 2017
Lab No. 17E-1976
Invoice No. 235160

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 10/25/17, 8:47 A.M.
WASTEWATER COMPOSITE, SP011, 10/25/17, 8:47 A.M – 2:47 P.M.

Units: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	6.76	----	150.1	10/25/17
Temperature, °C (G)	23.3	----	170.1	10/25/17
Biological Oxygen Demand (C)	229	5	5210 B	10/26/17
Chemical Oxygen Demand (C)	491	10	5220 D	10/26/17
Total Suspended Solids (C)	187	5	160.2	10/30/17
Oil & Grease (G)	9	5	1664	10/27/17
Silver (C)	< 0.05	0.05	200.7	10/27/17
Total Phenol (G)	0.033	0.005	420.4	10/26/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/ss

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 11/1/2017

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

October 17, 2017

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913

RE: Discharge Permit No: 1024353000-1.1 for premise at: 660 South Euclid Ave. St. Louis, MO 63110

Dear Mr. Rehemer:

Washington University School of Medicine (WUSM) received the draft Wasterwater Discharge permit. Our current permit expires on December 31. 2017.

On August 26, 2013, WUSM requested an exemption to the requirement of providing sampling and analytical analysis for 2,3,7,8-tetrachlorodibenzo-p-dioxin once per year. This request was granted on August 27, 2013. This request was made due to the minute amounts WUSM possesses, the limited number of laboratories in the U.S. that are able to provide this analysis and the considerable cost associated.

WUSM's laboratory located in BJCIH room 8103 still has an one (1) ampule of 10mug 2,3,7,8-tetrachlorodibenzo-p-dioxin solution analytical standard in one (1) milliliter of toluene. The standard is used approximately one time per month for a research experiment. WUSM Environmental Health and Safety policy and checklist prohibit drain disposal of Hazardous Waste or Unwanted Materials.

WUSM would like for this exemption to continue as our new permit becomes effective.

If you have any questions, please contact me at by email at isringhausenm@wustl.edu or by phone at 314-362-6735 or 314-602-8551.

Sincerely,

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ENVIRONMENTAL COMPLIANCE

Livi Isringhausen
Environmental Compliance Manager

SR

METROPOLITAN SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No: 1024-3530-00

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2017** ☐ (JAN-MAR) ☐ (APR-JUN) ☒ (JUL-SEP) ☐ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
Ca-45	0.0100
H-3	0.6976
I-125	0.1047
I-125V	0.0432
P-32	0.0352
S-35	0.0012
U-238	0.0060
TOTAL ACTIVITY DISCHARGED:	**0.8979**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☐ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist

Telephone: (314) 362-4968

Signature:

Date: 10/17/2017

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

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SR
8-31

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: **IDENTIFYING INFORMATION** 1024-3530-00

Company Name: Washington University School of Medicine
Permit No: 51122162-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2017 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: **ANALYTICAL RESULTS OF SELF MONITORING**

MSD Sample Point Reference Number		001		003		005		
Dates on Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
Times at Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow						Units
Flow	***	E	28,250	E	55,500	E	450,000	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	G	see attatched	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched	mg/L
		001		003		005		
		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	0	see attatched	mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L

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Toluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched		see attatched		see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched		see attatched		see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844		see attatched		see attatched		see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L

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You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 5112262-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2017 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		006 *		007		008		009		
Dates on Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
Times at Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
PARAMETER		Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	LIMIT	E	24,000	E	8,900	E	131,850	E	131,850	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L

* discontinued Sept 2015

		006 *		007		008		009		
		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L

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Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Toluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L

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METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 5112262-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2017 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		10		11		
Dates on Which Samples Were Collected		G: see attached C: see attached		G: see attached C: see attached		
Times at Which Samples Were Collected		G: see attached C: see attached		G: see attached C: see attached		
PARAMETER		Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow				Units
Flow	LIMIT	E	131,850	E	131,850	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	mg/L
		008		009		
		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	mg/L

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Chlorobenzene	5.844	G	see attatched	G	see attatched		mg/L
Chloroethane	5.844	G	see attatched	G	see attatched		mg/L
Chloroform	5.844	G	see attatched	G	see attatched		mg/L
Chloromethane	5.844	G	see attatched	G	see attatched		mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched		mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched		mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched		mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched		mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched		mg/L
Toluene	5.844	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched	G	see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched	G	see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844	G	see attatched	G	see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched		mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 08/14/17, 9:00 A.M.
WASTEWATER COMPOSITE, SP001, 08/14/17, 9:00 A.M – 3:00 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.05	----	150.1	08/14/17
Temperature, °C (G)	24.6	----	170.1	08/14/17
Biological Oxygen Demand (C)	108	20	5210 B	08/16/17
Chemical Oxygen Demand (C)	225	10	5220 D	08/16/17
Total Suspended Solids (C)	148	5	160.2	08/17/17
Oil & Grease (G)	ND	5	1664	08/17/17
Total Cyanide (G)	ND	0.005	335.4	08/21/17
Cadmium (C)	ND	0.01	200.7	08/17/17
Chromium (C)	0.01	0.01	200.7	08/17/17
Copper (C)	0.02	0.01	200.7	08/17/17
Lead (C)	0.01	0.01	200.7	08/17/17
Nickel (C)	ND	0.01	200.7	08/17/17
Selenium (C)	0.03	0.02	200.7	08/17/17
Silver (C)	ND	0.02	200.7	08/17/17
Thallium (C)	ND	0.02	200.7	08/17/17
Zinc (C)	ND	0.05	200.7	08/17/17
Mercury (C)	ND	0.005	200.8	08/16/17

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 08/14/17, 9:00 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP001	MQL	ANALYTE	SP001	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	ND	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

Surr: 1,2-dichloroethene-d4	101.0% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	102.3% rec.	83.9-115%
Surr: Dibromofluoromethane	98.1% rec.	84.9-113%
Surr: Toluene-d8	100.9% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 08/18/17
Dilution Factor: 1

Quality control sample recovered outside upper QC limits for Bromomethane. Sample results are below the MQL. Data is reportable per 2009 TNI standard (Volume 1, module 4, sec. 1.7.4.2).

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660 South Euclid Ave.
St. Louis, MO 63110

August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 08/14/17, 9:00 A.M.

Units: mg/L **SEMI-VOLATILE ORGANIC COMPOUNDS**

ANALYTE	SP001	MQL	ANALYTE	SP001	MQL
1,2,4-Trichlorobenzene	ND	0.047	Benzidine	ND	0.188
1,2- Diphenylhydrazine	ND	0.047	Benzo(a)pyrene	ND	0.047
2,4,6-Trichlorophenol	ND	0.047	Bis(2-chloroethoxy)methane	ND	0.047
2,4-Dichlorophenol	ND	0.005	Bis(2-chloroethyl)ether	ND	0.047
2,4-Dimethylphenol	ND	0.047	Bis(2-chloroisopropyl)ether	ND	0.047
2,4-Dinitrophenol	ND	0.094	Diethyl phthalate	ND	0.047
2,4-Dinitrotoluene	ND	0.047	Hexachlorobenzene	ND	0.047
2,6-Dinitrotoluene	ND	0.047	Hexachlorocyclopentadiene	ND	0.005
2-Chlorophenol	ND	0.047	Hexachloroethane	ND	0.047
2-Nitrophenol	ND	0.094	Isophorone	ND	0.047
3,3-Dichlorobenzidine	ND	0.047	Naphthalene	ND	0.047
4,6-Dinitro-2-methylphenol	ND	0.094	Nitrobenzene	ND	0.047
4-Chloro-3-methylphenol	ND	0.094	N-Nitrosodimethylamine	ND	0.094
4-Nitrophenol	ND	0.094	Pentachlorophenol	ND	0.094
Acenaphthene	ND	0.047	Phenanthrene	ND	0.047
Acenaphthylene	ND	0.047	Phenol	ND	0.024
Anthracene	ND	0.047	Pyrene	ND	0.047
Anzobenzene	ND	0.047			

Surr: 2,4,6-Tribromophenol	89.8% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	81.6% rec.	36.3-102%
Surr: 2-Fluorophenol	62.2% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	86.9% rec.	32.3-100%
Surr: phenol-d5	48.2% rec.	10-62.5%
Surr: p-Terphenyl-d14	59.4% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625
Date of Analysis: 08/20/17
Dilution Factor: 5

N-Nitrosodimethylamine was outside the upper continuing calibration verification criteria. Sample results were ND. Data is reportable.

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 08/14/17, 9:00 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP001	MQL
Aldrin	ND	0.47
Chlorodane	ND	0.47
Dieldrin	ND	0.47
Gamma-BHC	ND	0.47
Heptachlor epoxide	ND	0.47
Surr: Decachlorobiphenyl 48.4% rec.	5.54-150%	
Surr: Tetrachloro-m-xylene 76.3% rec.	13-129%	

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608
Date of Analysis: 08/21/17
Dilution Factor: 10

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 08/15/17, 9:55 A.M.
WASTEWATER COMPOSITE, SP003, 08/15/17, 9:55 A.M. – 3:55 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.14	----	150.1	08/15/17
Temperature, °C (G)	28.1	----	170.1	08/15/17
Biological Oxygen Demand (C)	20	10	5210 B	08/16/17
Chemical Oxygen Demand (C)	59	10	5220 D	08/16/17
Total Suspended Solids (C)	48	5	160.2	08/17/17
Oil & Grease (G)	ND	5	1664	08/17/17
Total Cyanide (G)	0.009	0.005	335.4	08/21/17
Cadmium (C)	ND	0.01	200.7	08/17/17
Chromium (C)	ND	0.01	200.7	08/17/17
Copper (C)	0.02	0.01	200.7	08/17/17
Lead (C)	ND	0.01	200.7	08/17/17
Nickel (C)	ND	0.01	200.7	08/17/17
Selenium (C)	0.02	0.02	200.7	08/17/17
Silver (C)	ND	0.02	200.7	08/17/17
Thallium (C)	ND	0.02	200.7	08/17/17
Zinc (C)	ND	0.05	200.7	08/17/17
Mercury (C)	ND	0.005	200.8	08/16/17

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 08/15/17, 9:55 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	ND	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

Surr: 1,2-dichloroethene-d4	101.5% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	103.4% rec.	83.9-115%
Surr: Dibromofluoromethane	98.4% rec.	84.9-113%
Surr: Toluene-d8	100.7% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 08/18/17
Dilution Factor: 1

Quality control sample recovered outside upper QC limits for Bromomethane. Sample results are below the MQL. Data is reportable per 2009 TNI standard (Volume 1, module 4, sec. 1.7.4.2).

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 08/15/17, 9:55 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,2,4-Trichlorobenzene	ND	0.050	Benzidine	ND	0.20
1,2- Diphenylhydrazine	ND	0.050	Benzo(a)pyrene	ND	0.050
2,4,6-Trichlorophenol	ND	0.050	Bis(2-chloroethoxy)methane	ND	0.050
2,4-Dichlorophenol	ND	0.005	Bis(2-chloroethyl)ether	ND	0.050
2,4-Dimethylphenol	ND	0.050	Bis(2-chloroisopropyl)ether	ND	0.050
2,4-Dinitrophenol	ND	0.10	Diethyl phthalate	ND	0.050
2,4-Dinitrotoluene	ND	0.050	Hexachlorobenzene	ND	0.050
2,6-Dinitrotoluene	ND	0.050	Hexachlorocyclopentadiene	ND	0.005
2-Chlorophenol	ND	0.050	Hexachloroethane	ND	0.050
2-Nitrophenol	ND	0.10	Isophorone	ND	0.050
3,3-Dichlorobenzidine	ND	0.050	Naphthalene	ND	0.050
4,6-Dinitro-2-methylphenol	ND	0.10	Nitrobenzene	ND	0.050
4-Chloro-3-methylphenol	ND	0.10	N-Nitrosodimethylamine	ND	0.10
4-Nitrophenol	ND	0.10	Pentachlorophenol	ND	0.10
Acenaphthene	ND	0.050	Phenanthrene	ND	0.050
Acenaphthylene	ND	0.050	Phenol	ND	0.025
Anthracene	ND	0.050	Pyrene	ND	0.050
Anzobenzene	ND	0.050			

Surr: 2,4,6-Tribromophenol	74.0% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	59.6% rec.	36.3-102%
Surr: 2-Fluorophenol	30.9% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	54.6% rec.	32.3-100%
Surr: phenol-d5	23.6% rec.	10-62.5%
Surr: p-Terphenyl-d14	60.2% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625
Date of Analysis: 08/22/17
Dilution Factor: 5

N-Nitrosodimethylamine was outside the upper continuing calibration verification criteria. Sample results were ND. Data is reportable.

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 08/15/17, 9:55 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP003	MQL
Aldrin	ND	0.47
Chlorodane	ND	0.47
Dieldrin	ND	0.47
Gamma-BHC	ND	0.47
Heptachlor epoxide	ND	0.47
Surr: Decachlorobiphenyl 31.8% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 68.1% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608
Date of Analysis: 08/21/17
Dilution Factor: 10

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 08/14/17, 8:44 A.M.
WASTEWATER COMPOSITE, SP005, 08/14/17, 8:44 A.M. – 2:44 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.26	----	150.1	08/14/17
Temperature, °C (G)	25.7	----	170.1	08/14/17
Biological Oxygen Demand (C)	134	10	5210 B	08/16/17
Chemical Oxygen Demand (C)	291	10	5220 D	08/16/17
Total Suspended Solids (C)	60	5	160.2	08/17/17
Oil & Grease (G)	5	5	1664	08/17/17
Total Cyanide (G)	0.014	0.005	335.4	08/21/17
Cadmium (C)	ND	0.01	200.7	08/17/17
Chromium (C)	ND	0.01	200.7	08/17/17
Copper (C)	0.03	0.01	200.7	08/17/17
Lead (C)	0.01	0.01.	200.7	08/17/17
Nickel (C)	ND	0.01	200.7	08/17/17
Selenium (C)	0.03	0.02	200.7	08/17/17
Silver (C)	ND	0.02	200.7	08/17/17
Thallium (C)	ND	0.02	200.7	08/17/17
Zinc (C)	ND	0.05	200.7	08/17/17
Mercury (C)	ND	0.005	200.8	08/16/17

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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August 29, 2017
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Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 08/14/17, 8:44 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	ND	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

Surr: 1,2-dichloroethene-d4	102.3% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	102.0% rec.	83.9-115%
Surr: Dibromofluoromethane	98.4% rec.	84.9-113%
Surr: Toluene-d8	100.2% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 08/18/17
Dilution Factor: 1

Quality control sample recovered outside upper QC limits for Bromomethane. Sample results are below the MQL. Data is reportable per 2009 TNI standard (Volume 1, module 4, sec. 1.7.4.2).

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 08/14/17, 8:44 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,2,4-Trichlorobenzene	ND	0.048	Benzidine	ND	0.194
1,2-Diphenylhydrazine	ND	0.048	Benzo(a)pyrene	ND	0.048
2,4,6-Trichlorophenol	ND	0.048	Bis(2-chloroethoxy)methane	ND	0.048
2,4-Dichlorophenol	ND	0.005	Bis(2-chloroethyl)ether	ND	0.048
2,4-Dimethylphenol	ND	0.048	Bis(2-chloroisopropyl)ether	ND	0.048
2,4-Dinitrophenol	ND	0.097	Diethyl phthalate	ND	0.048
2,4-Dinitrotoluene	ND	0.048	Hexachlorobenzene	ND	0.048
2,6-Dinitrotoluene	ND	0.048	Hexachlorocyclopentadiene	ND	0.005
2-Chlorophenol	ND	0.048	Hexachloroethane	ND	0.048
2-Nitrophenol	ND	0.097	Isophorone	ND	0.048
3,3-Dichlorobenzidine	ND	0.048	Naphthalene	ND	0.048
4,6-Dinitro-2-methylphenol	ND	0.097	Nitrobenzene	ND	0.048
4-Chloro-3-methylphenol	ND	0.097	N-Nitrosodimethylamine	ND	0.097
4-Nitrophenol	ND	0.097	Pentachlorophenol	ND	0.097
Acenaphthene	ND	0.048	Phenanthrene	ND	0.048
Acenaphthylene	ND	0.048	Phenol	ND	0.025
Anthracene	ND	0.048	Pyrene	ND	0.048
Anzobenzene	ND	0.048			

Surr: 2,4,6-Tribromophenol	77.8% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	65.9% rec.	36.3-102%
Surr: 2-Fluorophenol	42.7% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	69.7% rec.	32.3-100%
Surr: phenol-d5	31.6% rec.	10-62.5%
Surr: p-Terphenyl-d14	51.7% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625
Date of Analysis: 08/20/17
Dilution Factor: 5

N-Nitrosodimethylamine was outside the upper continuing calibration verification criteria. Sample results were ND. Data is reportable.

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 08/14/17, 8:44 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP005	MQL
Aldrin	ND	0.48
Chlorodane	ND	0.48
Dieldrin	ND	0.48
Gamma-BHC	ND	0.48
Heptachlor epoxide	ND	0.48
Surr: Decachlorobiphenyl 23.3% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 45.7% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608
Date of Analysis: 08/21/17
Dilution Factor: 10

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 08/15/17, 9:35 A.M.
WASTEWATER COMPOSITE, SP007, 08/15/17, 9:35 A.M. – 3:35 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.54	----	150.1	08/15/17
Temperature, °C (G)	29.5	----	170.1	08/15/17
Biological Oxygen Demand (C)	171	20	5210 B	08/16/17
Chemical Oxygen Demand (C)	413	10	5220 D	08/16/17
Total Suspended Solids (C)	137	5	160.2	08/17/17
Oil & Grease (G)	28	5	1664	08/17/17
Total Cyanide (G)	ND	0.005	335.4	08/21/17
Cadmium (C)	ND	0.01	200.7	08/17/17
Chromium (C)	ND	0.01	200.7	08/17/17
Copper (C)	0.06	0.01	200.7	08/17/17
Lead (C)	ND	0.01	200.7	08/17/17
Nickel (C)	0.01	0.01	200.7	08/17/17
Selenium (C)	0.02	0.02	200.7	08/17/17
Silver (C)	ND	0.02	200.7	08/17/17
Thallium (C)	ND	0.02	200.7	08/17/17
Zinc (C)	0.06	0.05	200.7	08/17/17
Mercury (C)	ND	0.005	200.8	08/16/17

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 08/15/17, 9:35 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.0056	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

Surr: 1,2-dichloroethene-d4	101.0% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	101.6% rec.	83.9-115%
Surr: Dibromofluoromethane	97.4% rec.	84.9-113%
Surr: Toluene-d8	100.0% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 08/18/17
Dilution Factor: 1

Quality control sample recovered outside upper QC limits for Bromomethane. Sample results are below the MQL. Data is reportable per 2009 TNI standard (Volume 1, module 4, sec. 1.7.4.2).

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 08/15/17, 9:35 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,2,4-Trichlorobenzene	ND	0.050	Benzidine	ND	0.20
1,2- Diphenylhydrazine	ND	0.050	Benzo(a)pyrene	ND	0.050
2,4,6-Trichlorophenol	ND	0.050	Bis(2-chloroethoxy)methane	ND	0.050
2,4-Dichlorophenol	ND	0.005	Bis(2-chloroethyl)ether	ND	0.050
2,4-Dimethylphenol	ND	0.050	Bis(2-chloroisopropyl)ether	ND	0.050
2,4-Dinitrophenol	ND	0.10	Diethyl phthalate	ND	0.050
2,4-Dinitrotoluene	ND	0.050	Hexachlorobenzene	ND	0.050
2,6-Dinitrotoluene	ND	0.050	Hexachlorocyclopentadiene	ND	0.005
2-Chlorophenol	ND	0.050	Hexachloroethane	ND	0.10
2-Nitrophenol	ND	0.10	Isophorone	ND	0.050
3,3-Dichlorobenzidine	ND	0.050	Naphthalene	ND	0.050
4,6-Dinitro-2-methylphenol	ND	0.10	Nitrobenzene	ND	0.050
4-Chloro-3-methylphenol	ND	0.10	N-Nitrosodimethylamine	ND	0.10
4-Nitrophenol	ND	0.10	Pentachlorophenol	ND	0.10
Acenaphthene	ND	0.050	Phenanthrene	ND	0.050
Acenaphthylene	ND	0.050	Phenol	ND	0.025
Anthracene	ND	0.050	Pyrene	ND	0.050
Anzobenzene	ND	0.050			

Surr: 2,4,6-Tribromophenol	77.6% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	60.6% rec.	36.3-102%
Surr: 2-Fluorophenol	35.1% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	52.9% rec.	32.3-100%
Surr: phenol-d5	26.4% rec.	10-62.5%
Surr: p-Terphenyl-d14	49.9% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625
Date of Analysis: 08/22/17
Dilution Factor: 5

N-Nitrosodimethylamine was outside the upper continuing calibration verification criteria. Sample results were ND. Data is reportable.

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 08/15/17, 9:35 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP007	MQL
Aldrin	ND	0.47
Chlorodane	ND	0.47
Dieldrin	ND	0.47
Gamma-BHC	ND	0.47
Heptachlor epoxide	ND	0.47
Surr: Decachlorobiphenyl 31.8% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 61.8% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608
Date of Analysis: 08/22/17
Dilution Factor: 10

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 08/15/17, 10:35 A.M.
WASTEWATER COMPOSITE, SP008, 08/15/17, 10:35 A.M. – 4:35 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.58	----	150.1	08/15/17
Temperature, °C (G)	30.4	----	170.1	08/15/17
Biological Oxygen Demand (C)	121	20	5210 B	08/16/17
Chemical Oxygen Demand (C)	321	10	5220 D	08/16/17
Total Suspended Solids (C)	116	5	160.2	08/17/17
Oil & Grease (G)	12	5	1664	08/17/17
Total Cyanide (G)	ND	0.005	335.4	08/21/17
Cadmium (C)	ND	0.01	200.7	08/17/17
Chromium (C)	ND	0.01	200.7	08/17/17
Copper (C)	0.09	0.01	200.7	08/17/17
Lead (C)	0.01	0.01	200.7	08/17/17
Nickel (C)	ND	0.01	200.7	08/17/17
Selenium (C)	0.04	0.02	200.7	08/17/17
Silver (C)	ND	0.02	200.7	08/17/17
Thallium (C)	ND	0.02	200.7	08/17/17
Zinc (C)	0.18	0.05	200.7	08/17/17
Mercury (C)	< 0.005	0.005	200.8	08/16/17

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 08/15/17, 10:35 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	ND	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

Surr: 1,2-dichloroethene-d4	101.9% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	100.4% rec.	83.9-115%
Surr: Dibromofluoromethane	98.5% rec.	84.9-113%
Surr: Toluene-d8	99.5% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 08/18/17
Dilution Factor: 1

Quality control sample recovered outside upper QC limits for Bromomethane. Sample results are below the MQL. Data is reportable per 2009 TNI standard (Volume 1, module 4, sec. 1.7.4.2).

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 08/15/17, 10:35 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,2,4-Trichlorobenzene	ND	0.050	Benzidine	ND	0.20
1,2- Diphenylhydrazine	ND	0.050	Benzo(a)pyrene	ND	0.050
2,4,6-Trichlorophenol	ND	0.050	Bis(2-chloroethoxy)methane	ND	0.050
2,4-Dichlorophenol	ND	0.005	Bis(2-chloroethyl)ether	ND	0.050
2,4-Dimethylphenol	ND	0.050	Bis(2-chloroisopropyl)ether	ND	0.050
2,4-Dinitrophenol	ND	0.10	Diethyl phthalate	ND	0.050
2,4-Dinitrotoluene	ND	0.050	Hexachlorobenzene	ND	0.050
2,6-Dinitrotoluene	ND	0.050	Hexachlorocyclopentadiene	ND	0.005
2-Chlorophenol	ND	0.050	Hexachloroethane	ND	0.050
2-Nitrophenol	ND	0.10	Isophorone	ND	0.050
3,3-Dichlorobenzidine	ND	0.050	Naphthalene	ND	0.050
4,6-Dinitro-2-methylphenol	ND	0.10	Nitrobenzene	ND	0.050
4-Chloro-3-methylphenol	ND	0.10	N-Nitrosodimethylamine	ND	0.10
4-Nitrophenol	ND	0.10	Pentachlorophenol	ND	0.10
Acenaphthene	ND	0.050	Phenanthrene	ND	0.050
Acenaphthylene	ND	0.050	Phenol	ND	0.025
Anthracene	ND	0.050	Pyrene	ND	0.050
Anzobenzene	ND	0.050			

Surr: 2,4,6-Tribromophenol	95.3% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	71.5% rec.	36.3-102%
Surr: 2-Fluorophenol	40.0% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	69.8% rec.	32.3-100%
Surr: phenol-d5	31.0% rec.	10-62.5%
Surr: p-Terphenyl-d14	54.5% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625
Date of Analysis: 08/22/17
Dilution Factor: 5

N-Nitrosodimethylamine was outside the upper continuing calibration verification criteria. Sample results were ND. Data is reportable.

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 08/15/17, 10:35 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP008	MQL
Aldrin	ND	0.47
Chlorodane	ND	0.47
Dieldrin	ND	0.47
Gamma-BHC	ND	0.47
Heptachlor epoxide	ND	0.47
Surr: Decachlorobiphenyl 9.9% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 0% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608
Date of Analysis: 08/21/17
Dilution Factor: 10

Tetrachloro-m-xylene surrogate recovery is outside QC limits due to matrix interference.

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 08/15/17, 10:22 A.M.
WASTEWATER COMPOSITE, SP009, 08/15/17, 10:22 A.M. – 4:22 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.30	----	150.1	08/15/17
Temperature, °C (G)	26.2	----	170.1	08/15/17
Biological Oxygen Demand (C)	101	20	5210 B	08/16/17
Chemical Oxygen Demand (C)	351	10	5220 D	08/16/17
Total Suspended Solids (C)	171	10	160.2	08/17/17
Oil & Grease (G)	13	5	1664	08/17/17
Total Cyanide (G)	0.019	0.005	335.4	08/21/17
Cadmium (C)	ND	0.01	200.7	08/17/17
Chromium (C)	ND	0.01	200.7	08/17/17
Copper (C)	0.06	0.01	200.7	08/17/17
Lead (C)	0.01	0.01	200.7	08/17/17
Nickel (C)	ND	0.01	200.7	08/17/17
Selenium (C)	0.02	0.02	200.7	08/17/17
Silver (C)	0.02	0.02	200.7	08/17/17
Thallium (C)	ND	0.02	200.7	08/17/17
Zinc (C)	0.11	0.05	200.7	08/17/17
Mercury (C)	< 0.005	0.005	200.8	08/16/17

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 08/15/17, 10:22 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene +	0.0083	0.005	Chloroform +	0.0059	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

Surr: 1,2-dichloroethene-d4	102.6% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	102.1% rec.	83.9-115%
Surr: Dibromofluoromethane	97.8% rec.	84.9-113%
Surr: Toluene-d8	100.0% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 08/18/17
Dilution Factor: 1

Quality control sample recovered outside upper QC limits for Bromomethane. Sample results are below the MQL. Data is reportable per 2009 TNI standard (Volume 1, module 4, sec. 1.7.4.2).

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Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 08/15/17, 10:22 A.M.

Units: mg/L **SEMI-VOLATILE ORGANIC COMPOUNDS**

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,2,4-Trichlorobenzene	ND	0.050	Benzidine	ND	0.20
1,2-Diphenylhydrazine	ND	0.050	Benzo(a)pyrene	ND	0.050
2,4,6-Trichlorophenol	ND	0.050	Bis(2-chloroethoxy)methane	ND	0.050
2,4-Dichlorophenol	ND	0.005	Bis(2-chloroethyl)ether	ND	0.050
2,4-Dimethylphenol	ND	0.050	Bis(2-chloroisopropyl)ether	ND	0.050
2,4-Dinitrophenol	ND	0.10	Diethyl phthalate	ND	0.050
2,4-Dinitrotoluene	ND	0.050	Hexachlorobenzene	ND	0.050
2,6-Dinitrotoluene	ND	0.050	Hexachlorocyclopentadiene	ND	0.10
2-Chlorophenol	ND	0.050	Hexachloroethane	ND	0.050
2-Nitrophenol	ND	0.10	Isophorone	ND	0.050
3,3-Dichlorobenzidine	ND	0.050	Naphthalene	ND	0.050
4,6-Dinitro-2-methylphenol	ND	0.10	Nitrobenzene	ND	0.050
4-Chloro-3-methylphenol	ND	0.10	N-Nitrosodimethylamine	ND	0.10
4-Nitrophenol	ND	0.10	Pentachlorophenol	ND	0.10
Acenaphthene	ND	0.050	Phenanthrene	ND	0.050
Acenaphthylene	ND	0.050	Phenol	ND	0.025
Anthracene	ND	0.050	Pyrene	ND	0.050
Anzobenzene	ND	0.050			

Surr: 2,4,6-Tribromophenol	82.4% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	54.9% rec.	36.3-102%
Surr: 2-Fluorophenol	31.4% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	53.6% rec.	32.3-100%
Surr: phenol-d5	24.7% rec.	10-62.5%
Surr: p-Terphenyl-d14	58.3% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample composition

Test Method: EPA 600/625
Date of Analysis: 08/22/17
Dilution Factor: 1

N-Nitrosodimethylamine was outside the upper continuing calibration verification criteria. Sample results were ND. Data is reportable.

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 08/15/17, 10:22 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP009	MQL
Aldrin	ND	0.48
Chlorodane	ND	0.48
Dieldrin	ND	0.48
Gamma-BHC	ND	0.48
Heptachlor epoxide	ND	0.48
Surr: Decachlorobiphenyl 9.9% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 0% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608
Date of Analysis: 08/21/17
Dilution Factor: 10

Tetrachloro-m-xylene surrogate recovery is outside QC limits due to matrix interference.

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 08/14/17, 9:17 A.M.
WASTEWATER COMPOSITE, SP010, 08/14/17, 9:17 A.M. – 3:17 P.M.

Units: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.03	----	150.1	08/14/17
Temperature, °C (G)	24.1	----	170.1	08/14/17
Biological Oxygen Demand (C)	217	20	5210 B	08/16/17
Chemical Oxygen Demand (C)	545	10	5220 D	08/16/17
Total Suspended Solids (C)	101	5	160.2	08/17/17
Oil & Grease (G)	8	5	1664	08/17/17
Total Cyanide (G)	ND	0.005	335.4	08/23/17
Cadmium (C)	ND	0.01	200.7	08/17/17
Chromium (C)	ND	0.01	200.7	08/17/17
Copper (C)	0.06	0.01	200.7	08/17/17
Lead (C)	ND	0.01	200.7	08/17/17
Nickel (C)	ND	0.01	200.7	08/17/17
Selenium (C)	0.05	0.02	200.7	08/17/17
Silver (C)	ND	0.02	200.7	08/17/17
Thallium (C)	ND	0.02	200.7	08/17/17
Zinc (C)	0.09	0.05	200.7	08/17/17
Mercury (C)	< 0.005	0.005	200.8	08/16/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 08/14/17, 9:17 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	ND	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

Surr: 1,2-dichloroethene-d4	103.6% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	100.4% rec.	83.9-115%
Surr: Dibromofluoromethane	100.1% rec.	84.9-113%
Surr: Toluene-d8	100.0% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 08/18/17
Dilution Factor: 1

Quality control sample recovered outside upper QC limits for Bromomethane. Sample results are below the MQL. Data is reportable per 2009 TNI standard (Volume 1, module 4, sec. 1.7.4.2).

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 08/14/17, 9:17 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,2,4-Trichlorobenzene	ND	0.045	Benzidine	ND	0.182
1,2-Diphenylhydrazine	ND	0.045	Benzo(a)pyrene	ND	0.045
2,4,6-Trichlorophenol	ND	0.045	Bis(2-chloroethoxy)methane	ND	0.045
2,4-Dichlorophenol	ND	0.005	Bis(2-chloroethyl)ether	ND	0.045
2,4-Dimethylphenol	ND	0.045	Bis(2-chloroisopropyl)ether	ND	0.045
2,4-Dinitrophenol	ND	0.091	Diethyl phthalate	ND	0.045
2,4-Dinitrotoluene	ND	0.045	Hexachlorobenzene	ND	0.045
2,6-Dinitrotoluene	ND	0.045	Hexachlorocyclopentadiene	ND	0.091
2-Chlorophenol	ND	0.045	Hexachloroethane	ND	0.045
2-Nitrophenol	ND	0.091	Isophorone	ND	0.045
3,3-Dichlorobenzidine	ND	0.045	Naphthalene	ND	0.045
4,6-Dinitro-2-methylphenol	ND	0.091	Nitrobenzene	ND	0.045
4-Chloro-3-methylphenol	ND	0.091	N-Nitrosodimethylamine	ND	0.091
4-Nitrophenol	ND	0.091	Pentachlorophenol	ND	0.091
Acenaphthene	ND	0.045	Phenanthrene	ND	0.045
Acenaphthylene	ND	0.045	Phenol +	0.026	0.023
Anthracene	ND	0.045	Pyrene	ND	0.045
Anzobenzene	ND	0.045			

Surr: 2,4,6-Tribromophenol	60.7% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	75.5% rec.	36.3-102%
Surr: 2-Fluorophenol	36.8% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	78.9% rec.	32.3-100%
Surr: phenol-d5	33.2% rec.	10-62.5%
Surr: p-Terphenyl-d14	65.0% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625
Date of Analysis: 08/20/17
Dilution Factor: 5

N-Nitrosodimethylamine was outside the upper continuing calibration verification criteria. Sample results were ND. Data is reportable.

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 08/14/17, 9:17 A.M.

Units: µg/L (ppb)**PESTICIDES**

ANALYTE	SP010	MQL
Aldrin	ND	0.47
Chlorodane	ND	0.47
Dieldrin	ND	0.47
Gamma-BHC	ND	0.47
Heptachlor epoxide	ND	0.47
Surr: Decachlorobiphenyl 12.6% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 23.1% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608
Date of Analysis: 08/21/17
Dilution Factor: 10

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 08/15/17, 9:05 A.M.
WASTEWATER COMPOSITE, SP011, 08/15/17, 9:05 A.M. – 3:05 P.M.

Units: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.41	----	150.1	08/15/17
Temperature, °C (G)	26.0	----	170.1	08/15/17
Biological Oxygen Demand (C)	162	20	5210 B	08/16/17
Chemical Oxygen Demand (C)	460	10	5220 D	08/16/17
Total Suspended Solids (C)	175	5	160.2	08/17/17
Oil & Grease (G)	28	5	1664	08/17/17
Total Cyanide (G)	ND	0.005	335.4	08/22/17
Cadmium (C)	ND	0.01	200.7	08/17/17
Chromium (C)	ND	0.01	200.7	08/17/17
Copper (C)	0.04	0.01	200.7	08/17/17
Lead (C)	ND	0.01	200.7	08/17/17
Nickel (C)	ND	0.01	200.7	08/17/17
Selenium (C)	0.02	0.02	200.7	08/17/17
Silver (C)	ND	0.02	200.7	08/17/17
Thallium (C)	ND	0.02	200.7	08/17/17
Zinc (C)	0.09	0.05	200.7	08/17/17
Mercury (C)	< 0.005	0.005	200.8	08/16/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 08/15/17, 9:05 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP011	MQL	ANALYTE	SP011	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	ND	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

Surr: 1,2-dichloroethene-d4	102.3% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	102.4% rec.	83.9-115%
Surr: Dibromofluoromethane	98.8% rec.	84.9-113%
Surr: Toluene-d8	100.0% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 08/18/17
Dilution Factor: 1

Quality control sample recovered outside upper QC limits for Bromomethane. Sample results are below the MQL. Data is reportable per 2009 TNI standard (Volume, module 4, sec. 1.7.4.2).

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August 29, 2017
Lab No. 17E-1449
Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 08/15/17, 9:05 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP011	MQL	ANALYTE	SP011	MQL
1,2,4-Trichlorobenzene	ND	0.050	Benzidine	ND	0.20
1,2- Diphenylhydrazine	ND	0.050	Benzo(a)pyrene	ND	0.050
2,4,6-Trichlorophenol	ND	0.050	Bis(2-chloroethoxy)methane	ND	0.050
2,4-Dichlorophenol	ND	0.005	Bis(2-chloroethyl)ether	ND	0.050
2,4-Dimethylphenol	ND	0.050	Bis(2-chloroisopropyl)ether	ND	0.050
2,4-Dinitrophenol	ND	0.10	Diethyl phthalate	ND	0.050
2,4-Dinitrotoluene	ND	0.050	Hexachlorobenzene	ND	0.050
2,6-Dinitrotoluene	ND	0.050	Hexachlorocyclopentadiene	ND	0.005
2-Chlorophenol	ND	0.050	Hexachloroethane	ND	0.050
2-Nitrophenol	ND	0.10	Isophorone	ND	0.050
3,3-Dichlorobenzidine	ND	0.050	Naphthalene	ND	0.050
4,6-Dinitro-2-methylphenol	ND	0.10	Nitrobenzene	ND	0.050
4-Chloro-3-methylphenol	ND	0.10	N-Nitrosodimethylamine	ND	0.10
4-Nitrophenol	ND	0.10	Pentachlorophenol	ND	0.10
Acenaphthene	ND	0.050	Phenanthrene	ND	0.050
Acenaphthylene	ND	0.050	Phenol	ND	0.025
Anthracene	ND	0.050	Pyrene	ND	0.050
Anzobenzene	ND	0.050			

Surr: 2,4,6-Tribromophenol	76.4% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	66.6% rec.	36.3-102%
Surr: 2-Fluorophenol	41.0% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	67.5% rec.	32.3-100%
Surr: phenol-d5	31.0% rec.	10-62.5%
Surr: p-Terphenyl-d14	70.4% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625
Date of Analysis: 08/22/17
Dilution Factor: 5

N-Nitrosodimethylamine was outside the upper continuing calibration verification criteria. Sample results were ND. Data is reportable

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Invoice No. 232645

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 08/15/17, 9:05 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP011	MQL
Aldrin	ND	0.46
Chlorodane	ND	0.46
Dieldrin	ND	0.46
Gamma-BHC	ND	0.46
Heptachlor epoxide	ND	0.46
Surr: Decachlorobiphenyl 10.3% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 14.3% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608
Date of Analysis: 08/21/17
Dilution Factor: 10

SR/ss

Steve Root, Manager
Environmental Testing

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Envirnmental Compliance Manager Telephone: 314-362-6735
	Signature: Date: 8/30/2017

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SR
5/9/19

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: **IDENTIFYING INFORMATION** 1024353000

Company Name: Washington University School of Medicine
Permit No: 51122162-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2018 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: **ANALYTICAL RESULTS OF SELF MONITORING**

MSD Sample Point Reference Number		001		003		005		
Dates on Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
Times at Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow						Units
Flow	***	E	28,250	E	55,500	E	450,000	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	G	see attatched	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched	mg/L
		001		003		005		
		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	0	see attatched	mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L

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Toluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched		see attatched		see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched		see attatched		see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844		see attatched		see attatched		see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L

ADDITIONAL FLOWS PER L. Springhousen on 5-8-19

SP	GPD
006	24k
007-	8.9k
008-	131.85k
009-	131.85k
010-	131.85k
011-	131.85k

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

July 10, 2018
Lab No. 18E-1208
Invoice No. 245012

Attention: Livi Isringhausen

REPORT OF ANALYSIS ✓

SAMPLE ID: WASTEWATER GRAB, SP001, 07/10/18, 9:30 A.M.
WASTEWATER COMPOSITE, SP001, 07/10/18, 9:30 A.M. – 2:25 P.M.

UNITS: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.58	----	150.1	07/10/18
Temperature, °C (G)	30.0	----	170.1	07/10/18
Biological Oxygen Demand (C)	107	5	5210 B	07/12/18
Chemical Oxygen Demand (C)	253	10	5220 D	07/16/18
Total Suspended Solids (C)	186	5	160.2	07/16/18
Oil & Grease (G)	ND	5	1664	07/13/18
Total Cyanide (G)	ND	0.005	335.4	07/16/18
Cadmium (C)	ND	0.01	200.7	07/11/18
Chromium (C)	ND	0.01	200.7	07/11/18
Copper (C)	ND	0.01	200.7	07/11/18
Lead (C)	0.01	0.01	200.7	07/11/18
Nickel (C)	ND	0.01	200.7	07/11/18
Selenium (C)	0.03	0.02	200.7	07/11/18
Silver (C)	ND	0.02	200.7	07/11/18
Thallium (C)	ND	0.02	200.7	07/11/18
Zinc (C)	ND	0.05	200.7	07/11/18
Mercury (C)	ND	0.005	200.8	07/17/18

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/10/18, 9:30 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP001	MQL 17	ANALYTE	SP001	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	ND	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	97.3% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	103.6% rec.	83.9-115%
Surr: Dibromofluoromethane	99.7% rec.	84.9-113%
Surr: Toluene-d8	97.2% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/12/18
Dilution Factor: 1

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/10/18, 9:30 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP001	MQL 1b	ANALYTE	SP001	MQL
1,2,4-Trichlorobenzene	ND	0.028	Benzidine	ND	0.200
1,2- Diphenylhydrazine	ND	0.050	Benzo(a)pyrene	ND	0.038
2,4,6-Trichlorophenol	ND	0.041	Bis(2-chloroethoxy)methane	ND	0.080
2,4-Dichlorophenol	ND	0.041	Bis(2-chloroethyl)ether	ND	0.086
2,4-Dimethylphenol	ND	0.041	Bis(2-chloroisopropyl)ether	ND	0.086
2,4-Dinitrophenol	ND	0.630	Diethyl phthalate	ND	0.024
2,4-Dinitrotoluene	ND	0.086	Hexachlorobenzene	ND	0.028
2,6-Dinitrotoluene	ND	0.028	Hexachlorocyclopentadiene	ND	0.100
2-Chlorophenol	ND	0.050	Hexachloroethane	ND	0.024
2-Nitrophenol	ND	0.054	Isophorone	ND	0.033
3,3-Dichlorobenzidine	ND	0.248	Naphthalene	ND	0.024
4,6-Dinitro-2-methylphenol	ND	0.360	Nitrobenzene	ND	0.028
4-Chloro-3-methylphenol	ND	0.045	N-Nitrosodimethylamine	ND	0.100
4-Nitrophenol	ND	0.036	Pentachlorophenol	ND	0.054
Acenaphthene	ND	0.028	Phenanthrene	ND	0.081
Acenaphthylene	ND	0.052	Phenol	ND	0.022
Anthracene	ND	0.028	Pyrene	ND	0.028
Anzobenzene	ND	0.050			

Surr: 2,4,6-Tribromophenol	108.1% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	71.7% rec.	36.3-102%
Surr: 2-Fluorophenol	42.2% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	63.0% rec.	15-314%
Surr: phenol-d5	32.4% rec.	8-424%
Surr: p-Terphenyl-d14	61.9% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 07/12/18
Dilution Factor: 5

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Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/10/18, 9:30 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE 2	SP001	MQL
Aldrin	ND	0.01
Chlordane	ND	0.04
Dieldrin	ND	0.01
Gamma-BHC (Lindane)	ND	0.01
Heptachlor epoxide	ND	0.26
Surr: Decachlorobiphenyl 0% rec. (S) 5.54-150% Surr: Tetrachloro-m-xylene 0% rec. (S) 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/12/18
Dilution Factor: 1

(S): Surrogate recovery outside control limits due to matrix interference.

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS ✓

SAMPLE ID: WASTEWATER GRAB, SP003, 07/11/18, 9:15 A.M.
WASTEWATER COMPOSITE, SP003, 07/11/18, 9:15 A.M. – 3:15 P.M.

UNITS: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.49	----	150.1	07/11/18
Temperature, °C (G)	29.1	----	170.1	07/11/18
Biological Oxygen Demand (C)	43	5	5210 B	07/12/18
Chemical Oxygen Demand (C)	110	10	5220 D	07/16/18
Total Suspended Solids (C)	85	5	160.2	07/16/18
Oil & Grease (G)	ND	5	1664	07/13/18
Total Cyanide (G)	0.007	0.005	335.4	07/10/18
Cadmium (C)	ND	0.01	200.7	07/11/18
Chromium (C)	ND	0.01	200.7	07/11/18
Copper (C)	ND	0.01	200.7	07/11/18
Lead (C)	ND	0.01	200.7	07/11/18
Nickel (C)	ND	0.01	200.7	07/11/18
Selenium (C)	0.03	0.02	200.7	07/11/18
Silver (C)	ND	0.02	200.7	07/11/18
Thallium (C)	ND	0.02	200.7	07/11/18
Zinc (C)	ND	0.05	200.7	07/11/18
Mercury (C)	ND	0.005	200.8	07/17/18

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/11/18, 9:15 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0042	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	96.3% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	103.7% rec.	83.9-115%
Surr: Dibromofluoromethane	100.7% rec.	84.9-113%
Surr: Toluene-d8	96.0% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/12/18
Dilution Factor: 1

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/11/18, 9:15 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,2,4-Trichlorobenzene	ND	0.028	Benzidine	ND	0.200
1,2- Diphenylhydrazine	ND	0.050	Benzo(a)pyrene	ND	0.038
2,4,6-Trichlorophenol	ND	0.041	Bis(2-chloroethoxy)methane	ND	0.080
2,4-Dichlorophenol	ND	0.041	Bis(2-chloroethyl)ether	ND	0.086
2,4-Dimethylphenol	ND	0.041	Bis(2-chloroisopropyl)ether	ND	0.086
2,4-Dinitrophenol	ND	0.630	Diethyl phthalate	ND	0.024
2,4-Dinitrotoluene	ND	0.086	Hexachlorobenzene	ND	0.028
2,6-Dinitrotoluene	ND	0.028	Hexachlorocyclopentadiene	ND	0.100
2-Chlorophenol	ND	0.050	Hexachloroethane	ND	0.024
2-Nitrophenol	ND	0.054	Isophorone	ND	0.033
3,3-Dichlorobenzidine	ND	0.248	Naphthalene	ND	0.024
4,6-Dinitro-2-methylphenol	ND	0.360	Nitrobenzene	ND	0.028
4-Chloro-3-methylphenol	ND	0.045	N-Nitrosodimethylamine	ND	0.100
4-Nitrophenol	ND	0.036	Pentachlorophenol	ND	0.054
Acenaphthene	ND	0.028	Phenanthrene	ND	0.081
Acenaphthylene	ND	0.052	Phenol	ND	0.022
Anthracene	ND	0.028	Pyrene	ND	0.028
Anzobenzene	ND	0.050			

Surr: 2,4,6-Tribromophenol	105.8% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	67.0% rec.	36.3-102%
Surr: 2-Fluorophenol	40.7% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	57.6% rec.	15-314%
Surr: phenol-d5	29.3% rec.	8-424%
Surr: p-Terphenyl-d14	57.8% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 07/12/18
Dilution Factor: 5

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/11/18, 9:15 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP003	MQL
Aldrin	ND	0.01
Chlordane	0.09	0.04
Dieldrin	ND	0.01
Gamma-BHC (Lindane)	ND	0.01
Heptachlor epoxide	ND	0.26
Surr: Decachlorobiphenyl 40.1% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 40.7% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/12/18 (Chlordane 07/16/18)
Dilution Factor: 1

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS ✓

SAMPLE ID: WASTEWATER GRAB, SP005, 07/10/18, 8:43 A.M.
WASTEWATER COMPOSITE, SP005, 07/10/18, 8:43 A.M. – 2:43 P.M.

UNITS: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.88	----	150.1	07/10/18
Temperature, °C (G)	27.7	----	170.1	07/10/18
Biological Oxygen Demand (C)	37	5	5210 B	07/12/18
Chemical Oxygen Demand (C)	101	10	5220 D	07/16/18
Total Suspended Solids (C)	112	5	160.2	07/16/18
Oil & Grease (G)	ND	5	1664	07/13/18
Total Cyanide (G)	0.017	0.005	335.4	07/16/18
Cadmium (C)	ND	0.01	200.7	07/11/18
Chromium (C)	ND	0.01	200.7	07/11/18
Copper (C)	ND	0.01	200.7	07/11/18
Lead (C)	ND	0.01	200.7	07/11/18
Nickel (C)	ND	0.01	200.7	07/11/18
Selenium (C)	0.03	0.02	200.7	07/11/18
Silver (C)	ND	0.02	200.7	07/11/18
Thallium (C)	ND	0.02	200.7	07/11/18
Zinc (C)	ND	0.05	200.7	07/11/18
Mercury (C)	ND	0.005	200.8	07/17/18

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/10/18, 8:43 A.M.

UNITS: mg/L

V OLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0026	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	96.7% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	104.8% rec.	83.9-115%
Surr: Dibromofluoromethane	100.1% rec.	84.9-113%
Surr: Toluene-d8	96.6% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/12/18
Dilution Factor: 1

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/10/18, 8:43 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,2,4-Trichlorobenzene	ND	0.026	Benzidine	ND	0.182
1,2-Diphenylhydrazine	ND	0.045	Benzo(a)pyrene	ND	0.034
2,4,6-Trichlorophenol	ND	0.037	Bis(2-chloroethoxy)methane	ND	0.072
2,4-Dichlorophenol	ND	0.037	Bis(2-chloroethyl)ether	ND	0.078
2,4-Dimethylphenol	ND	0.037	Bis(2-chloroisopropyl)ether	ND	0.078
2,4-Dinitrophenol	ND	0.573	Diethyl phthalate	ND	0.022
2,4-Dinitrotoluene	ND	0.078	Hexachlorobenzene	ND	0.026
2,6-Dinitrotoluene	ND	0.026	Hexachlorocyclopentadiene	ND	0.091
2-Chlorophenol	ND	0.045	Hexachloroethane	ND	0.022
2-Nitrophenol	ND	0.049	Isophorone	ND	0.030
3,3-Dichlorobenzidine	ND	0.225	Naphthalene	ND	0.022
4,6-Dinitro-2-methylphenol	ND	0.327	Nitrobenzene	ND	0.026
4-Chloro-3-methylphenol	ND	0.041	N-Nitrosodimethylamine	ND	0.091
4-Nitrophenol	ND	0.033	Pentachlorophenol	ND	0.049
Acenaphthene	ND	0.026	Phenanthrene	ND	0.024
Acenaphthylene	ND	0.048	Phenol	ND	0.020
Anthracene	ND	0.026	Pyrene	ND	0.026
Anzobenzene	ND	0.045			

Surr: 2,4,6-Tribromophenol	103.8% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	66.8% rec.	36.3-102%
Surr: 2-Fluorophenol	42.4% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	60.7% rec.	15-314%
Surr: phenol-d5	30.1% rec.	8-424%
Surr: p-Terphenyl-d14	56.2% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 07/12/18
Dilution Factor: 5

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/10/18, 8:43 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP005	MQL
Aldrin	ND	0.01
Chlordane	0.13	0.04
Dieldrin	ND	0.01
Gamma-BHC (Lindane)	ND	0.01
Heptachlor epoxide	ND	0.25
Surr: Decachlorobiphenyl 55.2% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 49.4% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/12/185 (Chlordane 07/16/18)
Dilution Factor: 1

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS ✓

SAMPLE ID: WASTEWATER GRAB, SP007, 07/10/18, 9:15 A.M.
WASTEWATER COMPOSITE, SP007, 07/10/18, 9:15 A.M. – 3:15 P.M.

UNITS: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.00	----	150.1	07/10/18
Temperature, °C (G)	40.7	----	170.1	07/10/18
Biological Oxygen Demand (C)	264	10	5210 B	07/12/18
Chemical Oxygen Demand (C)	569	10	5220 D	07/16/18
Total Suspended Solids (C)	319	5	160.2	07/16/18
Oil & Grease (G)	ND	5	1664	07/13/18
Total Cyanide (G)	ND	0.005	335.4	07/16/18
Cadmium (C)	ND	0.01	200.7	07/11/18
Chromium (C)	ND	0.01	200.7	07/11/18
Copper (C)	0.03	0.01	200.7	07/11/18
Lead (C)	ND	0.01	200.7	07/11/18
Nickel (C)	ND	0.01	200.7	07/11/18
Selenium (C)	ND	0.02	200.7	07/11/18
Silver (C)	ND	0.02	200.7	07/11/18
Thallium (C)	ND	0.02	200.7	07/11/18
Zinc (C)	ND	0.05	200.7	07/11/18
Mercury (C)	ND	0.005	200.8	07/17/18

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/10/18, 9:15 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0027	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	97.8% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	102.9% rec.	83.9-115%
Surr: Dibromofluoromethane	100.8% rec.	84.9-113%
Surr: Toluene-d8	96.8% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/12/18
Dilution Factor: 1

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/10/18, 9:15 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,2,4-Trichlorobenzene	ND	0.026	Benzidine	ND	0.182
1,2- Diphenylhydrazine	ND	0.045	Benzo(a)pyrene	ND	0.034
2,4,6-Trichlorophenol	ND	0.037	Bis(2-chloroethoxy)methane	ND	0.072
2,4-Dichlorophenol	ND	0.037	Bis(2-chloroethyl)ether	ND	0.078
2,4-Dimethylphenol	ND	0.037	Bis(2-chloroisopropyl)ether	ND	0.078
2,4-Dinitrophenol	ND	0.573	Diethyl phthalate	ND	0.022
2,4-Dinitrotoluene	ND	0.078	Hexachlorobenzene	ND	0.026
2,6-Dinitrotoluene	ND	0.026	Hexachlorocyclopentadiene	ND	0.091
2-Chlorophenol	ND	0.045	Hexachloroethane	ND	0.022
2-Nitrophenol	ND	0.049	Isophorone	ND	0.030
3,3-Dichlorobenzidine	ND	0.225	Naphthalene	ND	0.022
4,6-Dinitro-2-methylphenol	ND	0.327	Nitrobenzene	ND	0.026
4-Chloro-3-methylphenol	ND	0.041	N-Nitrosodimethylamine	ND	0.091
4-Nitrophenol	ND	0.033	Pentachlorophenol	ND	0.049
Acenaphthene	ND	0.026	Phenanthrene	ND	0.024
Acenaphthylene	ND	0.048	Phenol	ND	0.020
Anthracene	ND	0.026	Pyrene	ND	0.026
Anzobenzene	ND	0.045			

Surr: 2,4,6-Tribromophenol	138.7% rec. (S)	28.4-122%
Surr: 2-Fluorobiphenyl	60.7% rec.	36.3-102%
Surr: 2-Fluorophenol	2.3% rec. (S)	12.3-72.5%
Surr: Nitrobenzene-d5	56.3% rec.	15-314%
Surr: phenol-d5	0% rec. (S)	8-424%
Surr: p-Terphenyl-d14	71.1% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 07/12/18
Dilution Factor: 5

(S): Surrogate recovery outside control limits due to matrix interference.

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Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/10/18, 9:15 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP007	MQL
Aldrin	ND	0.01
Chlordane	ND	0.04
Dieldrin	ND	0.01
Gamma-BHC (Lindane)	ND	0.01
Heptachlor epoxide	ND	0.25
Surr: Decachlorobiphenyl 0% rec.(S) 5.54-150% Surr: Tetrachloro-m-xylene 46.5% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/12/18
Dilution Factor: 1

(S): Surrogate recovery outside control limits due to matrix interference.

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/11/18, 10:05 A.M.
WASTEWATER COMPOSITE, SP008, 07/11/18, 10:05 A.M. – 3:05 P.M.

UNITS: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.96	----	150.1	07/11/18
Temperature, °C (G)	31.8	----	170.1	07/11/18
Biological Oxygen Demand (C)	281	5	5210 B	07/12/18
Chemical Oxygen Demand (C)	538	10	5220 D	07/16/18
Total Suspended Solids (C)	430	5	160.2	07/16/18
Oil & Grease (G)	7	5	1664	07/13/18
Total Cyanide (G)	ND	0.005	335.4	07/10/18
Cadmium (C)	ND	0.01	200.7	07/11/18
Chromium (C)	ND	0.01	200.7	07/11/18
Copper (C)	0.05	0.01	200.7	07/11/18
Lead (C)	ND	0.01	200.7	07/11/18
Nickel (C)	ND	0.01	200.7	07/11/18
Selenium (C)	0.03	0.02	200.7	07/11/18
Silver (C)	ND	0.02	200.7	07/11/18
Thallium (C)	ND	0.02	200.7	07/11/18
Zinc (C)	ND	0.05	200.7	07/11/18
Mercury (C)	ND	0.005	200.8	07/17/18

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/11/18, 10:05 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0030	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	0.0033	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	97.2% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	102.2% rec.	83.9-115%
Surr: Dibromofluoromethane	100.0% rec.	84.9-113%
Surr: Toluene-d8	98.2% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/12/18
Dilution Factor: 1

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/11/18, 10:05 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,2,4-Trichlorobenzene	ND	0.028	Benzidine	ND	0.200
1,2- Diphenylhydrazine	ND	0.050	Benzo(a)pyrene	ND	0.038
2,4,6-Trichlorophenol	ND	0.041	Bis(2-chloroethoxy)methane	ND	0.080
2,4-Dichlorophenol	ND	0.041	Bis(2-chloroethyl)ether	ND	0.086
2,4-Dimethylphenol	ND	0.041	Bis(2-chloroisopropyl)ether	ND	0.086
2,4-Dinitrophenol	ND	0.630	Diethyl phthalate	ND	0.024
2,4-Dinitrotoluene	ND	0.086	Hexachlorobenzene	ND	0.028
2,6-Dinitrotoluene	ND	0.028	Hexachlorocyclopentadiene	ND	0.100
2-Chlorophenol	ND	0.050	Hexachloroethane	ND	0.024
2-Nitrophenol	ND	0.054	Isophorone	ND	0.033
3,3-Dichlorobenzidine	ND	0.248	Naphthalene	ND	0.024
4,6-Dinitro-2-methylphenol	ND	0.360	Nitrobenzene	ND	0.028
4-Chloro-3-methylphenol	ND	0.045	N-Nitrosodimethylamine	ND	0.100
4-Nitrophenol	ND	0.036	Pentachlorophenol	ND	0.054
Acenaphthene	ND	0.028	Phenanthrene	ND	0.081
Acenaphthylene	ND	0.052	Phenol	ND	0.022
Anthracene	ND	0.028	Pyrene	ND	0.028
Anzobenzene	ND	0.050			

Surr: 2,4,6-Tribromophenol	80.4% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	55.4% rec.	36.3-102%
Surr: 2-Fluorophenol	31.2% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	51.2% rec.	15-314%
Surr: phenol-d5	23.4% rec.	8-424%
Surr: p-Terphenyl-d14	49.1% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 07/12/18
Dilution Factor: 5

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Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/11/18, 10:05 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP008	MQL
Aldrin	ND	0.01
Chlordane	ND	0.04
Dieldrin	ND	0.01
Gamma-BHC (Lindane)	ND	0.01
Heptachlor epoxide	ND	0.25
Surr: Decachlorobiphenyl 32.1% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 51.7% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/16/18
Dilution Factor: 1

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/11/18, 9:43 A.M.
WASTEWATER COMPOSITE, SP009, 07/11/18, 9:43 A.M. – 3:43 P.M.

UNITS: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	6.74	----	150.1	07/11/18
Temperature, °C (G)	30.4	----	170.1	07/11/18
Biological Oxygen Demand (C)	186	5	5210 B	07/12/18
Chemical Oxygen Demand (C)	341	10	5220 D	07/16/18
Total Suspended Solids (C)	304	10	160.2	07/16/18
Oil & Grease (G)	6	5	1664	07/13/18
Total Cyanide (G)	0.021	0.005	335.4	07/10/18
Cadmium (C)	ND	0.01	200.7	07/11/18
Chromium (C)	ND	0.01	200.7	07/11/18
Copper (C)	ND	0.01	200.7	07/11/18
Lead (C)	ND	0.01	200.7	07/11/18
Nickel (C)	ND	0.01	200.7	07/11/18
Selenium (C)	0.03	0.02	200.7	07/11/18
Silver (C)	ND	0.02	200.7	07/11/18
Thallium (C)	ND	0.02	200.7	07/11/18
Zinc (C)	ND	0.05	200.7	07/11/18
Mercury (C)	ND	0.005	200.8	07/17/18

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/11/18, 9:43 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0045	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	0.0010	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	92.6% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	102.3% rec.	83.9-115%
Surr: Dibromofluoromethane	99.1% rec.	84.9-113%
Surr: Toluene-d8	95.9% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/13/18
Dilution Factor: 1

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/11/18, 9:43 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,2,4-Trichlorobenzene	ND	0.028	Benzidine	ND	0.200
1,2-Diphenylhydrazine	ND	0.050	Benzo(a)pyrene	ND	0.038
2,4,6-Trichlorophenol	ND	0.041	Bis(2-chloroethoxy)methane	ND	0.080
2,4-Dichlorophenol	ND	0.041	Bis(2-chloroethyl)ether	ND	0.086
2,4-Dimethylphenol	ND	0.041	Bis(2-chloroisopropyl)ether	ND	0.086
2,4-Dinitrophenol	ND	0.630	Diethyl phthalate	ND	0.024
2,4-Dinitrotoluene	ND	0.086	Hexachlorobenzene	ND	0.028
2,6-Dinitrotoluene	ND	0.028	Hexachlorocyclopentadiene	ND	0.100
2-Chlorophenol	ND	0.050	Hexachloroethane	ND	0.024
2-Nitrophenol	ND	0.054	Isophorone	ND	0.033
3,3-Dichlorobenzidine	ND	0.248	Naphthalene	ND	0.024
4,6-Dinitro-2-methylphenol	ND	0.360	Nitrobenzene	ND	0.028
4-Chloro-3-methylphenol	ND	0.045	N-Nitrosodimethylamine	ND	0.100
4-Nitrophenol	ND	0.036	Pentachlorophenol	ND	0.054
Acenaphthene	ND	0.028	Phenanthrene	ND	0.081
Acenaphthylene	ND	0.052	Phenol	ND	0.022
Anthracene	ND	0.028	Pyrene	ND	0.028
Anzobenzene	ND	0.050			

Surr: 2,4,6-Tribromophenol	80.4% rec.	
Surr: 2-Fluorobiphenyl	60.4% rec,	28.4-122%
Surr: 2-Fluorophenol	29.4% rec.	36.3-102%
Surr: Nitrobenzene-d5	53.8% rec.	12.3-72.5%
Surr: phenol-d5	23.9% rec.	15-314%
Surr: p-Terphenyl-d14	58.8% rec.	8-424%
		10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample composition

Test Method: EPA 600/625.1
Date of Analysis: 07/13/18
Dilution Factor: 5

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Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/11/18, 9:43 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP009	MQL
Aldrin	ND	0.06
Chlordane	ND	0.21
Dieldrin	ND	0.03
Gamma-BHC (Lindane)	ND	0.06
Heptachlor epoxide	ND	1.27
Surr: Decachlorobiphenyl 0% rec.(S) 5.54-150% Surr: Tetrachloro-m-xylene 0% rec. (S) 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/608.3
Date of Analysis: 07/12/18
Dilution Factor: 5

(S): Surrogate recovery outside control limits due to matrix interference.

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/10/18, 9:00 A.M.
WASTEWATER COMPOSITE, SP010, 07/10/18, 9:00 A.M. – 3:00 P.M.

UNITS: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.56	----	150.1	07/10/18
Temperature, °C (G)	36.6	----	170.1	07/10/18
Biological Oxygen Demand (C)	255	5	5210 B	07/12/18
Chemical Oxygen Demand (C)	507	10	5220 D	07/16/18
Total Suspended Solids (C)	288	5	160.2	07/16/18
Oil & Grease (G)	19	5	1664	07/13/18
Total Cyanide (G)	ND	0.005	335.4	07/10/18
Cadmium (C)	ND	0.01	200.7	07/11/18
Chromium (C)	ND	0.01	200.7	07/11/18
Copper (C)	0.01	0.01	200.7	07/11/18
Lead (C)	ND	0.01	200.7	07/11/18
Nickel (C)	ND	0.01	200.7	07/11/18
Selenium (C)	0.06	0.02	200.7	07/11/18
Silver (C)	ND	0.02	200.7	07/11/18
Thallium (C)	ND	0.02	200.7	07/11/18
Zinc (C)	ND	0.05	200.7	07/11/18
Mercury (C)	ND	0.005	200.8	07/17/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/10/18, 9:00 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0027	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	98.2% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	105.2% rec.	83.9-115%
Surr: Dibromofluoromethane	100.4% rec.	84.9-113%
Surr: Toluene-d8	97.1% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/12/18
Dilution Factor: 1

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/10/18, 9:00 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,2,4-Trichlorobenzene	ND	0.026	Benzidine	ND	0.184
1,2-Diphenylhydrazine	ND	0.046	Benzo(a)pyrene	ND	0.034
2,4,6-Trichlorophenol	ND	0.037	Bis(2-chloroethoxy)methane	ND	0.073
2,4-Dichlorophenol	ND	0.037	Bis(2-chloroethyl)ether	ND	0.079
2,4-Dimethylphenol	ND	0.037	Bis(2-chloroisopropyl)ether	ND	0.079
2,4-Dinitrophenol	ND	0.579	Diethyl phthalate	ND	0.022
2,4-Dinitrotoluene	ND	0.079	Hexachlorobenzene	ND	0.026
2,6-Dinitrotoluene	ND	0.026	Hexachlorocyclopentadiene	ND	0.092
2-Chlorophenol	ND	0.045	Hexachloroethane	ND	0.022
2-Nitrophenol	ND	0.050	Isophorone	ND	0.030
3,3-Dichlorobenzidine	ND	0.227	Naphthalene	ND	0.022
4,6-Dinitro-2-methylphenol	ND	0.331	Nitrobenzene	ND	0.026
4-Chloro-3-methylphenol	ND	0.041	N-Nitrosodimethylamine	ND	0.092
4-Nitrophenol	ND	0.033	Pentachlorophenol	ND	0.050
Acenaphthene	ND	0.026	Phenanthrene	ND	0.074
Acenaphthylene	ND	0.048	Phenol	ND	0.021
Anthracene	ND	0.026	Pyrene	ND	0.026
Anzobenzene	ND	0.046			

Surr: 2,4,6-Tribromophenol	76.7% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	55.3% rec.	36.3-102%
Surr: 2-Fluorophenol	36.2% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	47.2% rec.	15-314%
Surr: phenol-d5	25.0% rec.	8-424%
Surr: p-Terphenyl-d14	47.3% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 07/13/18
Dilution Factor: 5

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/10/18, 9:00 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP010	MQL
Aldrin	ND	0.01
Chlordane	ND	0.04
Dieldrin	ND	0.01
Gamma-BHC	ND	0.01
Heptachlor epoxide	ND	0.25
Surr: Decachlorobiphenyl 0% rec. (S) 5.54-150%		
Surr: Tetrachloro-m-xylene 52.9% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/12/18
Dilution Factor: 1

(S): Surrogate recovery outside control limits due to matrix interference.

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/11/18, 9:02 A.M.
WASTEWATER COMPOSITE, SP011, 07/11/18, 9:02 A.M. – 3:02 P.M.

UNITS: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.34	----	150.1	07/11/18
Temperature, °C (G)	28.0	----	170.1	07/11/18
Biological Oxygen Demand (C)	1156	20	5210 B	07/12/18
Chemical Oxygen Demand (C)	1684	40	5220 D	07/16/18
Total Suspended Solids (C)	1226	5	160.2	07/16/18
Oil & Grease (G)	7	5	1664	07/13/18
Total Cyanide (G)	ND	0.005	335.4	07/10/18
Cadmium (C)	ND	0.01	200.7	07/11/18
Chromium (C)	ND	0.01	200.7	07/11/18
Copper (C)	0.04	0.01	200.7	07/11/18
Lead (C)	ND	0.01	200.7	07/11/18
Nickel (C)	ND	0.01	200.7	07/11/18
Selenium (C)	ND	0.02	200.7	07/11/18
Silver (C)	ND	0.02	200.7	07/11/18
Thallium (C)	ND	0.02	200.7	07/11/18
Zinc (C)	0.14	0.05	200.7	07/11/18
Mercury (C)	ND	0.005	200.8	07/17/18

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/11/18, 9:02 A.M.

UNITS: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP011	MQL	ANALYTE	SP011	MQL
1,1,1-Trichloroethane	ND	0.002	Bromomethane	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.002	Carbon tetrachloride	ND	0.002
1,1,2-Trichloroethane	ND	0.0005	Chlorobenzene	ND	0.002
1,1-Dichloroethane	ND	0.002	Chloroethane	ND	0.002
1,1-Dichloroethene	ND	0.002	Chloroform	0.0069	0.002
1,2-Dichlorobenzene	ND	0.002	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.002	cis-1,3,-Dichloropropene	ND	0.002
1,2-Dichloropropane	ND	0.002	Dibromochloromethane	ND	0.002
1,3-Dichlorobenzene	ND	0.002	Ethylbenzene	ND	0.002
1,4-Dichlorobenzene	ND	0.002	Methylene chloride	ND	0.002
2-Chloroethyl vinyl ether	ND	0.002	Tetrachloroethene	ND	0.0005
Acrolein	ND	0.020	Toluene	ND	0.002
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.002
Benzene	ND	0.005	trans-1,3-Dichloropropene	ND	0.002
Bromodichloromethane	ND	0.002	Trichloroethene	ND	0.002
Bromoform	ND	0.002			

Surr: 1,2-dichloroethene-d4	97.5% rec.	79.6-118%
Surr: 4-Bromofluorobenzene	102.3% rec.	83.9-115%
Surr: Dibromofluoromethane	99.7% rec.	84.9-113%
Surr: Toluene-d8	98.2% rec.	86.7-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624.1
Date of Analysis: 07/12/18
Dilution Factor: 1

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Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/11/18, 9:02 A.M.

UNITS: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP011	MQL	ANALYTE	SP011	MQL
1,2,4-Trichlorobenzene	ND	0.028	Benzidine	ND	0.200
1,2- Diphenylhydrazine	ND	0.050	Benzo(a)pyrene	ND	0.038
2,4,6-Trichlorophenol	ND	0.041	Bis(2-chloroethoxy)methane	ND	0.080
2,4-Dichlorophenol	ND	0.041	Bis(2-chloroethyl)ether	ND	0.086
2,4-Dimethylphenol	ND	0.041	Bis(2-chloroisopropyl)ether	ND	0.086
2,4-Dinitrophenol	ND	0.630	Diethyl phthalate	ND	0.024
2,4-Dinitrotoluene	ND	0.086	Hexachlorobenzene	ND	0.028
2,6-Dinitrotoluene	ND	0.028	Hexachlorocyclopentadiene	ND	0.100
2-Chlorophenol	ND	0.050	Hexachloroethane	ND	0.024
2-Nitrophenol	ND	0.054	Isophorone	ND	0.033
3,3-Dichlorobenzidine	ND	0.248	Naphthalene	ND	0.024
4,6-Dinitro-2-methylphenol	ND	0.360	Nitrobenzene	ND	0.028
4-Chloro-3-methylphenol	ND	0.045	N-Nitrosodimethylamine	ND	0.100
4-Nitrophenol	ND	0.036	Pentachlorophenol	ND	0.054
Acenaphthene	ND	0.028	Phenanthrene	ND	0.081
Acenaphthylene	ND	0.052	Phenol	ND	0.022
Anthracene	ND	0.028	Pyrene	ND	0.028
Anzobenzene	ND	0.050			

Surr: 2,4,6-Tribromophenol	69.4% rec.	28.4-122%
Surr: 2-Fluorobiphenyl	52.8% rec.	36.3-102%
Surr: 2-Fluorophenol	29.4% rec.	12.3-72.5%
Surr: Nitrobenzene-d5	49.0% rec.	15-314%
Surr: phenol-d5	21.6% rec.	8-424%
Surr: p-Terphenyl-d14	53.2% rec.	10-112%

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
Elevated MQL due to sample extract composition

Test Method: EPA 600/625.1
Date of Analysis: 07/13/18
Dilution Factor: 5

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WASHINGTON UNIVERSITY

Attention: Livi Isringhausen

July 10, 2018
Lab No. 18E-1208

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/11/18, 9:02 A.M.

UNITS: µg/L (ppb)

PESTICIDES

ANALYTE	SP011	MQL
Aldrin	ND	0.01
Chlordane	ND	0.04
Dieldrin	ND	0.01
Gamma-BHC	ND	0.01
Heptachlor epoxide	ND	0.26
Surr: Decachlorobiphenyl 31.4% rec. 5.54-150%		
Surr: Tetrachloro-m-xylene 29.4% rec. 13-129%		

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608.3
Date of Analysis: 07/16/18
Dilution Factor: 1

SR/ohs

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 7/24/2018

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JUL 24 2018

DIVISION OF ENVIRONMENTAL COMPLIANCE

SP

METROPOLITAN SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No: 1024-3530-00

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2017** ☐ (JAN-MAR) ☒ (APR-JUN) ☐ (JUL-SEP) ☐ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
C-14	0.0192
H-3	4.2669
I-125	0.0813
P-32	0.0300
Zn-65	0.0220
TOTAL ACTIVITY DISCHARGED:	**4.4194**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☑ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist Telephone: (314) 362-4968

Signature: Karla Spafford Date: 07/18/2017

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

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JUL 18 2017
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
314-768-6200 www.stlmsd.com

May 9, 2017

Livi Isringhausen
Environmental Compliance Manager
WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid Ave., Campus Box 8229
St. Louis, MO 63110

Re: Discharge Permit No: 1024353000 - 1.1
For premise at: 660 S. Euclid Ave., St. Louis, MO 63110

Dear Ms. Isringhausen:

The Metropolitan St. Louis Sewer District Wastewater Discharge permit for the above premise expires on December 31, 2017. Under the terms of the permit, you must apply for renewal at least 180 days prior to the expiration date.

We have enclosed an Industrial User Questionnaire form and instructions. You also may download an electronic version from MSD's website at www.stlmsd.com. This questionnaire serves as your permit application. Please complete and return the questionnaire to us no later than **July 1, 2017**. You may skip Section H of the questionnaire. Please retain a copy for your files.

We will use the questionnaire and our records on your facility to prepare a draft permit. The draft permit will be sent to you for comment, prior to sending a final permit.

We appreciate your cooperation and support in helping us to comply with the federal regulations. If you have any questions or need assistance in completing the questionnaire, please contact me at 314.436.8756.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

SM Rehmer

Scott M. Rehmer
Assistant Engineer

Enclosures: IUQ form, instructions

cc: Doug Mendoza
Jason Gill

SR
4/20

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2017 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2017 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

April 18, 2017
Lab No. 17E-0669
Invoice No. 227454

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 04/10/17, 9:15 A.M.
WASTEWATER COMPOSITE, SP001, 04/10/17, 9:15 A.M. – 3:15 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.46	----	150.1	04/10/17
Temperature, °C (G)	20.9	----	170.1	04/10/17
Biological Oxygen Demand (C)	91	5	5210 B	04/12/17
Chemical Oxygen Demand (C)	226	10	5220 D	04/17/17
Total Suspended Solids (C)	85	5	160.2	04/13/17
Oil & Grease (G)	6	5	1664	04/13/17
Silver (C)	< 0.05	0.05	200.7	04/12/17
Total Phenol (G)	0.030	0.005	420.4	04/12/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

April 18, 2017
Lab No. 17E-0669
Invoice No. 227454

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 04/11/17, 9:20 A.M.
WASTEWATER COMPOSITE, SP003, 04/11/17, 9:20 A.M. – 3:20 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.24	----	150.1	04/10/17
Temperature, °C (G)	17.9	----	170.1	04/10/17
Biological Oxygen Demand (C)	66	5	5210 B	04/12/17
Chemical Oxygen Demand (C)	115	10	5220 D	04/17/17
Total Suspended Solids (C)	61	5	160.2	04/13/17
Oil & Grease (G)	5	5	1664	04/13/17
Silver (C)	< 0.05	0.05	200.7	04/12/17
Total Phenol (G)	0.014	0.005	420.4	04/12/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

April 18, 2017
Lab No. 17E-0669
Invoice No. 227454

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 04/10/17, 8:45 A.M.
WASTEWATER COMPOSITE, SP005, 04/10/17, 8:45 A.M. – 2:45 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.64	----	150.1	04/10/17
Temperature, °C (G)	20.7	----	170.1	04/10/17
Biological Oxygen Demand (C)	89	5	5210 B	04/12/17
Chemical Oxygen Demand (C)	205	10	5220 D	04/17/17
Total Suspended Solids (C)	94	5	160.2	04/13/17
Oil & Grease (G)	7	5	1664	04/13/17
Silver (C)	< 0.05	0.05	200.7	04/12/17
Total Phenol (G)	0.226	0.005	420.4	04/12/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

April 18, 2017
Lab No. 17E-0669
Invoice No. 227454

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 04/10/17, 9:25 A.M.
WASTEWATER COMPOSITE, SP007, 04/10/17, 9:25 A.M. – 3:05 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.40	----	150.1	04/10/17
Temperature, °C (G)	24.2	----	170.1	04/10/17
Biological Oxygen Demand (C)	13	5	5210 B	04/12/17
Chemical Oxygen Demand (C)	77	10	5220 D	04/17/17
Total Suspended Solids (C)	33	5	160.2	04/13/17
Oil & Grease (G)	< 5	5	1664	04/13/17
Silver (C)	< 0.05	0.05	200.7	04/12/17
Total Phenol (G)	< 0.005	0.005	420.4	04/12/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

April 18, 2017
Lab No. 17E-0669
Invoice No. 227454

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 04/11/17, 9:45 A.M.
WASTEWATER COMPOSITE, SP008, 04/11/17, 9:45 A.M. – 3:15 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.73	----	150.1	04/11/17
Temperature, °C (G)	19.1	----	170.1	04/11/17
Biological Oxygen Demand (C)	488	5	5210 B	04/12/17
Chemical Oxygen Demand (C)	551	10	5220 D	04/17/17
Total Suspended Solids (C)	288	5	160.2	04/13/17
Oil & Grease (G)	8	5	1664	04/13/17
Silver (C)	< 0.05	0.05	200.7	04/12/17
Total Phenol (G)	0.049	0.005	420.4	04/12/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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April 18, 2017
Lab No. 17E-0669
Invoice No. 227454

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 04/11/17, 9:35 A.M.
WASTEWATER COMPOSITE, SP009, 04/11/17, 9:35 A.M. – 3:35 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.93	----	150.1	04/11/17
Temperature, °C (G)	21.0	----	170.1	04/11/17
Biological Oxygen Demand (C)	302	5	5210 B	04/12/17
Chemical Oxygen Demand (C)	392	10	5220 D	04/17/17
Total Suspended Solids (C)	225	5	160.2	04/13/17
Oil & Grease (G)	80	5	1664	04/13/17
Silver (C)	< 0.05	0.05	200.7	04/12/17
Total Phenol (G)	0.106	0.005	420.4	04/12/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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April 18, 2017
Lab No. 17E-0669
Invoice No. 227454

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 04/10/17, 9:05 A.M.
WASTEWATER COMPOSITE, SP010, 04/10/17, 9:05 A.M. – 3:05 P.M.

Units: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.93	----	150.1	04/10/17
Temperature, °C (G)	19.8	----	170.1	04/10/17
Biological Oxygen Demand (C)	98	5	5210 B	04/12/17
Chemical Oxygen Demand (C)	311	10	5220 D	04/17/17
Total Suspended Solids (C)	166	5	160.2	04/13/17
Oil & Grease (G)	10	5	1664	04/13/17
Silver (C)	< 0.05	0.05	200.7	04/12/17
Total Phenol (G)	0.058	0.005	420.4	04/12/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

April 18, 2017
Lab No. 17E-0669
Invoice No. 227454

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 04/11/17, 9:05 A.M.
WASTEWATER COMPOSITE, SP011, 04/11/17, 9:05 A.M. – 3:05 P.M.

Units: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.58	----	150.1	04/11/17
Temperature, °C (G)	21.1	----	170.1	04/11/17
Biological Oxygen Demand (C)	119	5	5210 B	04/12/17
Chemical Oxygen Demand (C)	221	10	5220 D	04/17/17
Total Suspended Solids (C)	181	5	160.2	04/13/17
Oil & Grease (G)	10	5	1664	04/13/17
Silver (C)	< 0.05	0.05	200.7	04/12/17
Total Phenol (G)	0.056	0.005	420.4	04/12/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/ss

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 4/19/2017

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

SR

METROPOLITAN SEWER DISTRICT

INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No: 1024-3530-00

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2017** ☒ (JAN-MAR) ☐ (APR-JUN) ☐ (JUL-SEP) ☐ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
C-14	0.0490
H-3	0.6941
I-125	0.0178
P-32	0.0511
S-35	0.0159
U-238	0.0100
Zn-65	0.0400
TOTAL ACTIVITY DISCHARGED	**0.8779**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☑ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist Telephone: (314) 362-4968

Signature: Date: 04/17/2017

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

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APR 17 2017

DIVISION OF
ENVIRONMENTAL COMPLIANCE

SR
2/16/17

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2017 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

RECEIVED
JAN 26 2017
DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2017 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 25, 2017
Lab No. 17E-0080
Invoice No. 224125

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 01/17/17, 9:15 A.M.
WASTEWATER COMPOSITE, SP001, 01/17/17, 9:15 A.M – 3:15 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.09	----	150.1	01/17/17
Temperature, °C (G)	19.4	----	170.1	01/17/17
Biological Oxygen Demand (C)	38	10	5210 B	01/19/17
Chemical Oxygen Demand (C)	178	10	5220 D	01/20/17
Total Suspended Solids (C)	57	5	160.2	01/20/17
Oil & Grease (G)	6	5	1664	01/20/17
Silver (C)	< 0.05	0.05	200.7	01/20/17
Total Phenol (G)	0.044	0.005	420.4	01/20/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 25, 2017
Lab No. 17E-0080
Invoice No. 224125

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 01/18/17, 9:00 A.M.
WASTEWATER COMPOSITE, SP003, 01/18/17, 9:00 A.M – 3:00 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.05	----	150.1	01/18/17
Temperature, °C (G)	14.6	----	170.1	01/18/17
Biological Oxygen Demand (C)	59	10	5210 B	01/19/17
Chemical Oxygen Demand (C)	204	10	5220 D	01/20/17
Total Suspended Solids (C)	59	5	160.2	01/20/17
Oil & Grease (G)	6	5	1664	01/20/17
Silver (C)	< 0.05	0.05	200.7	01/20/17
Total Phenol (G)	0.017	0.005	420.4	01/20/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

January 25, 2017
Lab No. 17E-0080
Invoice No. 224125

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 01/17/17, 8:45 A.M.
WASTEWATER COMPOSITE, SP005, 01/17/17, 8:45 A.M – 3:45 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.28	----	150.1	01/17/17
Temperature, °C (G)	12.3	----	170.1	01/17/17
Biological Oxygen Demand (C)	94	10	5210 B	01/19/17
Chemical Oxygen Demand (C)	265	10	5220 D	01/20/17
Total Suspended Solids (C)	98	5	160.2	01/20/17
Oil & Grease (G)	< 5	5	1664	01/20/17
Silver (C)	< 0.05	0.05	200.7	01/20/17
Total Phenol (G)	0.005	0.005	420.4	01/20/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

January 25, 2017
Lab No. 17E-0080
Invoice No. 224125

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 01/17/17, 9:30 A.M.
WASTEWATER COMPOSITE, SP007, 01/17/17, 9:30 A.M – 3:10 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.14	----	150.1	01/17/17
Temperature, °C (G)	18.4	----	170.1	01/17/17
Biological Oxygen Demand (C)	44	10	5210 B	01/19/17
Chemical Oxygen Demand (C)	128	10	5220 D	01/20/17
Total Suspended Solids (C)	39	5	160.2	01/20/17
Oil & Grease (G)	< 5	5	1664	01/20/17
Silver (C)	< 0.05	0.05	200.7	01/20/17
Total Phenol (G)	0.017	0.005	420.4	01/20/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
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St. Louis, MO 63110

January 25, 2017
Lab No. 17E-0080
Invoice No. 224125

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 01/18/17, 9:17 A.M.
WASTEWATER COMPOSITE, SP008, 01/18/17, 9:17 A.M – 3:30 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.52	----	150.1	01/18/17
Temperature, °C (G)	17.6	----	170.1	01/18/17
Biological Oxygen Demand (C)	352	40	5210 B	01/19/17
Chemical Oxygen Demand (C)	700	20	5220 D	01/20/17
Total Suspended Solids (C)	269	5	160.2	01/20/17
Oil & Grease (G)	5	5	1664	01/20/17
Silver (C)	< 0.05	0.05	200.7	01/20/17
Total Phenol (G)	0.060	0.005	420.4	01/20/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

January 25, 2017
Lab No. 17E-0080
Invoice No. 224125

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 01/18/17, 10:50 A.M.
WASTEWATER COMPOSITE, SP009, 01/18/17, 10:50 A.M – 4:50 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.63	----	150.1	01/18/17
Temperature, °C (G)	17.0	----	170.1	01/18/17
Biological Oxygen Demand (C)	244	40	5210 B	01/19/17
Chemical Oxygen Demand (C)	526	10	5220 D	01/20/17
Total Suspended Solids (C)	243	5	160.2	01/20/17
Oil & Grease (G)	12	5	1664	01/20/17
Silver (C)	< 0.05	0.05	200.7	01/20/17
Total Phenol (G)	0.059	0.005	420.4	01/20/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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ENVIRONMENTAL COMPLIANCE

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AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST.
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SEE REVERSE FOR CONDITIONS.

Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 25, 2017
Lab No. 17E-0080
Invoice No. 224125

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 01/17/17, 9:05 A.M.
WASTEWATER COMPOSITE, SP010, 01/17/17, 9:05 A.M – 3:05 P.M.

Units: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.40	----	150.1	01/17/17
Temperature, °C (G)	16.3	----	170.1	01/17/17
Biological Oxygen Demand (C)	135	40	5210 B	01/19/17
Chemical Oxygen Demand (C)	404	10	5220 D	01/20/17
Total Suspended Solids (C)	173	5	160.2	01/20/17
Oil & Grease (G)	< 5	5	1664	01/20/17
Silver (C)	< 0.05	0.05	200.7	01/20/17
Total Phenol (G)	0.131	0.005	420.4	01/20/17

MQL: Minimum Quantitative Limit

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St. Louis, MO 63110

January 25, 2017
Lab No. 17E-0080
Invoice No. 224125

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 01/18/17, 8:47 A.M.
WASTEWATER COMPOSITE, SP011, 01/18/17, 8:47 A.M – 2:47 P.M.

Units: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.94	----	150.1	01/18/17
Temperature, °C (G)	22.2	----	170.1	01/18/17
Biological Oxygen Demand (C)	140	40	5210 B	01/19/17
Chemical Oxygen Demand (C)	508	10	5220 D	01/20/17
Total Suspended Solids (C)	206	5	160.2	01/20/17
Oil & Grease (G)	9	5	1664	01/20/17
Silver (C)	< 0.05	0.05	200.7	01/20/17
Total Phenol (G)	0.010	0.005	420.4	01/20/17

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/ss

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmenatal Compliance Manager Telephone: 314-362-6735
	Signature Date: 1/26/2017

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

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METROPOLITAN SEWER DISTRICT

INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No: 1024-3530-00

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2016** ☐ (JAN-MAR) ☐ (APR-JUN) ☐ (JUL-SEP) ☒ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
Br-77	0.0010
Cr-51	0.0050
H-3	14.4876
I-123	0.0020
I-125	0.0893
P-32	0.1183
S-35	0.0418
Zn-65	0.0601
TOTAL ACTIVITY DISCHARGED	**14.8051**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☐ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist

Telephone: (314) 362-4968

Signature: [signature]

Date: 01/17/2017

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

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DIVISION OF ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL FACILITY INSPECTION REPORT

Company: Washington University Medical School — Account #: 1024353000
Premise Address: 660 S. Euclid — Zip Code: 63110
MSD Classes: SIU ☒ Non-Significant CIU ☐ CIU ☐ Surcharge ☐ Non-Toxic Process Water/Wastes ☐
Toxics-Bearing Waste ☒ No Process Discharge ☐ Multi-User ☐ Special Handling/Billing ☐
Company Representative: Livi Isringhousen
Title: Environmental Compliance Manager — Phone#: 314-362-6735
Inspector: Jason Gill
Others Present: None
Inspection Date: **1/10/17** Time: From 9:00 AM To 12:20 PM (Last Insp. 3/23/16)

NOTE: ALL ITEMS ARE TO BE COMPLETED BASED ON EVENTS SINCE LAST INSPECTION. ANSWERS ARE BASED ON INFORMATION OBTAINED OR PROVIDED BY COMPANY DURING INSPECTION, AS WELL AS INFORMATION IN FILE.

***** DATABASE ALSO UPDATED WITH APPROPRIATE CHANGES - see attached database reports *****

1. A. ARE THERE ADDITIONAL NON-STORMWATER ACCOUNT NUMBERS? Yes☒ No☐
   List them, note any changes: 10243532-00, 10243533-00, 10373777-00, 10481063-00, 10524528-01, 10553440-00.
   B. Were any changes (including to the primary or changes only to suffixes) for acct no's with RFs? NA☐ Yes☐ No☒
   C. If yes to B, was Cost Recovery Unit informed of the change(s)? NA☐ Yes☐ No☐
   D. Did all acct no's have water usage on PIMS? Yes☐ No☒
   E. If no to D, explain: Acct. # 10553440-00 (new EHS bldg from last year) is not showing in the PIMS Water Use tab. It appears that everything has been entered properly, and it may be a PIMS/ECIS problem.

2. PROCESSES & CLEANUP/WASHDOWN:

	Cont/ Batch?	Water/Liquids Used?	DISCHARGE Frequency (or how else disposed?)	Sample pt.
Medical university with research and testing labs	Cont	Yes	Daily	001,003,005,007,008,009,011
Housing and care of research mice and other animals	Cont	Yes	Daily	003,005,007,008,009
Kitchen services	Batch	Yes	Daily	005, 008
Hazardous materials clean-up	Batch	Yes	Daily	010
	(None)	N/A		
	(None)	N/A		

3. PRETREATMENT (other than grease traps) - describe:

	Sample pt.
pH neutralization	001, 003, 005, 007, 008, 009, 010, 011
Silver recovery	001, 003, 005, 008, 009, 011

4. DOES COMPANY HAVE ANY GREASE TRAPS? Yes☒ No☐
   If yes: A. List sample points: 005 & 008
   B. What is the frequency for cleaning & maintenance? Quarterly
   C. Are any additives used in traps? Yes☐ No☒
   D. If yes to C, was company warned MSD will bill them for blockages they cause? Yes☐ No☐
   E. Was company informed that MSD performs separate grease trap inspections? Yes☒ No☐

5. HAS COMPANY CONSTRUCTED NEW BLDGS/ADDITIONS WITH SEWERS SINCE LAST INSPECTION? Yes☒ No☐

If yes: A. Ask company: Did they notify MSD's Plan Review group? Unknown☐ Yes☒ No☐

B. If no or unknown, has inspector notified Plan Review group? Yes☐ No☐

C. Comments: The new Mid Campus Center (MCC) building is up and running as of December 2016. See comments at end of report for details.

6. HAS COMPANY BEGUN DISCHARGING ANY NEW POLLUTANTS SINCE THE LAST INSPECTION? Yes☐ No☒

If yes: A. List pollutants & process: _____

B. Will MSD STP exceed existing NPDES discharge limit(s)? Yes☐ No☐

C. Will MSD STP's discharge exceed 0.1 mg/l for any new pollutant? Yes☐ No☐

(MSD must notify MDNR if B or C is yes and discharge will continue [40CFR122.42(b)].)

D. Comments: _____

7. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS THAT ARE "NOT APPLICABLE"? Yes☐ No☒

(including those that are 'No PSES' and 'General Stds Only')

If yes: A. List regulation & describe operations (including any discharge):

_____

B. Explain why it is N/A: _____

8. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS SUBJECT TO DISCHARGE LIMITS? Yes☐ No☒

If yes: A. List regulation & describe operations (including any discharge):

_____

B. Is maximum daily categorical discharge ≤ 100 GPD? (includes batch discharges) Yes☐ No☐

If yes to B: C. Batch ☐ or Continuous ☐? Volume verified how? _____

D. Does company ever discharge untreated, concentrated categorical wastewater? Yes☐ No☐

E. Was company in SNC during any part of the previous **24** months? Yes☐ No☐

F. Date of last NSCIU Certification Statement: _____ or not currently NSCIU ☐

(If no to B, yes to D or E, or Cert. Statement not submitted as required, company is not eligible to be an NSCIU)

9. HAS COMPANY CERTIFIED TO THE ABSENCE OF SPECIFIC CATEGORICAL POLLUTANTS? Yes☐ No☒

(New certification also is required for each permit renewal)

If yes: A. Certification date: _____

B. Pollutants accepted by MSD as absent: _____

C Were any requested "absent" pollutants rejected by MSD? Yes☐ No☐

If yes to C: D. List them and explain why: _____

E. Were all the accepted pollutants non-detect in all monitoring since certification was approved? Yes☐ No☐

(If compared to intake water levels, explain details below)

If no to E: F. Explain: _____

G. Does Wastewater Discharge Permit need to be updated to remove detected pollutants? Yes☐ No☐

H. Comments: _____

10. DOES CATEGORICAL WASTEWATER COMBINE WITH NON-CATEGORICAL WW PRIOR TO SAMPLING? Yes☐ No☒

If yes: A. At which points? _____

B. Current applied factor: _____ Is it correct? Yes☐ No☐

C. If no, list correct factor/explain? _____

11. IS ANY WASTEWATER SUBJECT TO PRODUCTION ☐ OR MASS ☐ BASED STANDARDS? Yes☐ No☒

If yes: A. At which points? _____

B. Since calculation of the current limits, has the long term avg production rate or discharge volume changed by 20% or more? Yes☐ No☐

C. If yes to B, explain: _____

12. ARE ANY RADIOACTIVE MATERIALS HANDLED? Yes☒ No☐

If yes: A. Describe operations & disposal: All radioactive materials are collected and transported to the new EHS building at 4522 McKinley for storage/disposal. Some liquid materials are allowed to decay on site and then discharged to the sewer system.

B. If non-exempt & disposed to sewer, does company submit quarterly reports to MSD? NA☐ Yes☒ No☐
(If No to B, write company & require quarterly reports of discharge to sewer – or have permit revised as needed)

C. Amount discharged in most recent four complete calendar quarters: 77.2187 MCI

D. Is company in compliance with requirements of sewer use ordinance prohibition? Yes☒ No☐

13. DOES COMPANY GENERATE WASTES/WASTEWATER BY GENETIC ENGINEERING RESEARCH? Yes☐ No☒

If yes: A. Does company render wastes/wastewater innocuous? Yes☐ No☐

B. If yes, describe how: _____

C. Does company have MSD authorization for disposal to sewer? NA☐ Yes☐ No☐

D. Most recent authorization date: _____

14. DOES PROCESS or P&E WASHDOWN WATER USE APPEAR EXCESSIVE? Yes☐ No☒
(IS COMPANY USING DILUTION TO MEET DISCHARGE LIMITATIONS?)

A. Explain how use was verified & any needed changes:
This large medical university with research labs consumes a significant amount of water. Some of the process-related activities include R/O systems, boiler & CT systems, laboratory and general P&E washdown, and lawn irrigation. No excessive water use was observed during the inspection walkthrough.

15. BASED ON OBSERVATIONS DURING INSPECTION, DOES COMPANY APPEAR TO HAVE SOME WATER THAT IS NOT DISCHARGED TO SEWER? Yes☒ No☐

If yes: A. Describe: Evaporative loss from HVAC systems and some lawn irrigation.

B. Was "Return Factor Program" brochure given to company? Yes☒ No☐
(regardless of whether some water is not discharged to sewer)

16. HAS COMPANY BEEN GRANTED A VARIANCE FROM DISCHARGE LIMITATIONS CONTAINED IN THE SEWER USE ORDINANCE? Yes☐ No☒

If yes: A. Pollutant(s) and variance limit: _____

B. Latest approval date: _____

C. Is the approved variance more than 5 years old? Yes☐ No☐
(If yes to C, a new variance must be requested – write company)

17. HAVE ANY NUMERICAL LIMITATIONS BEEN APPLIED TO COMPANY, IN ADDITION TO THOSE ALREADY CONTAINED IN THE SEWER USE ORDINANCE? Yes☐ No☒

If yes: A. Pollutant(s) and discharge limit: _____

B. Date originally applied: _____, or as part of variance above? ☐

18. HAS COMPANY EXCEEDED ORDINANCE DISCHARGE LIMITS SINCE LAST INSPECTION OR WITHIN THE LAST 12 MONTHS (if last insp <12 months ago)? Yes☐ No☒

If yes: A.

Pollutant	When	Sample Points	Is problem resolved? Y/N	Describe
			.N/A	
			N/A	
			N/A	
			N/A	
			N/A	

B. Comments: _____

19. HAS COMPANY EXCEEDED CATEGORICAL PRETREATMENT LIMITS SINCE THE LAST INSPECTION OR WITHIN LAST 12 MONTHS (if last insp <12 months ago)? NA☒ Yes☐ No☐

If yes: A.

Pollutant	When	Sample Points	Is problem resolved? Y/N	Describe
			N/A	
			N/A	
			N/A	
			N/A	
			N/A	

B. Comments: _____

20. HAVE THERE BEEN ANY PROBLEM DISCHARGES SINCE LAST INSPECTION? Yes☐ No☒

If yes: A. Upsets? ☐ Bypasses of pretreatment facilities? ☐
Spills? ☐ Slug discharges? ☐ Other? _____
B. Explain any marked: _____

21. COULD SPILLS OR LEAKS OF ANY PROCESS TANKS, OR STORAGE TANKS, OR STORED WASTES, OR STORED CHEMICALS EASILY REACH SANITARY SEWERS OR STORM DRAINS? Yes☐ No☒

If yes: A. What needs to be done?
_____

If no: B. How are they controlled?
The new EHS building is the central hazardous waste and radioactive waste collection site on campus. The wastes are segregated by type in different rooms with forms of containment that include storage of drums of on containment pallets, sump drain systems that do not connect to the sewer and spill kits with various absorbents. The laboratories on campus have flammable liquids cabinets for storing various solvents and reagents.

22. DOES COMPANY HAVE ANY NPDES PERMITS? Yes☐ No☒

If yes: A. Receiving stream:_____
B. Does it have a MDNR general permit for stormwater discharges from industrial activities? Yes☐ No☐
If yes to B: Permit #: MO-R_____
C. Does it have a MDNR general permit for wastewater discharges? Yes☐ No☐
If yes to C: Permit #: MO-G_____ Permitted activity:_____
D. Does it have a MDNR site specific permit for wastewater discharges? Yes☐ No☐
If yes to D: Permit #: MO0_____

Outfall	Description	Vol (GPD)	Components

E. Comments: _____

23. BASED ON OBSERVATIONS DURING INSPECTION, ARE THERE ANY AREAS WHERE COMPANY ACTIVITIES APPEAR TO IMPAIR STORMWATER RUNOFF? Yes☐ No☒

If yes: A. Describe: _____
B. What needs to be done? _____
C. Was "Illicit Stormwater Discharges" brochure given to company? Yes☒ No☐
(regardless of whether there are any problem areas)

24. DOES COMPANY HAVE ANY WRITTEN SLUG DISCHARGE CONTROL (INCLUDES SPILLS) PLANS [40CFR403.8(f)(2)(vi)]? Yes☒ No☐

If yes: A.

	Title (actual title, NOT "SPCCP")	Last Update
1.	Contingency Plan	3/1/16
2.	SPCCP	2/13/14

B. Were Plans reviewed for completeness, especially regarding batch discharges/slugs and Q.19/20/21? (must be done) Yes☒ No☐

C. Are updates needed to existing Plans? (If yes, write company & require) Yes☐ No☒

D. Are any Plans needed (either in addition to those listed in Part A, or if there currently are no written control plans)? (If yes, write company & require) Yes☐ No☒

E. Explain why/why not for C or D: Both plans are comprehensive and include storage/handling of wastes, spill control measures and emergency contact information. The SPCCP is currently being revised.

25. DOES COMPANY HAVE ANY MAINTENANCE SHOP PARTS WASHERS? Yes☐ No☒

If yes: A. Parts washer solvent name: _____

B. Priority pollutants (or "none"): _____

C. How is spent solvent disposed? _____

(These solvents are not included in database's priority pollutants list, nor monitored for unless conditions show potential discharges)

26. ARE ANY ORGANICS OR SOLVENTS USED (OTHER THAN IN PARTS WASHERS)? Yes☒ No☐

If yes: A.

Solvent name/ components	Used for?	413/433/469 Process?	How disposed?	Priority Pollutant?
Numerous solvents in various laboratories (refer to pollutants list on IDS)	Lab reagents	Yes☐ No☒	Hauled off site	Yes☒ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐

27. DOES COMPANY HAVE A 413/433/469-REGULATORY "SOLVENT MANAGEMENT PLAN"? Yes☐ No☒

(Applies if co. has 413/433/469 processes, whether or not solvents used)

If yes: A. Is it part of a Spill/Slug Control Plan listed above? Yes[1.☐ 2.☐] No☐

B. If no to A, date of last update for SMP: _____

C. Is there a copy of the Spill/Slug Plan or SMP in the files? Yes☐ No☐

D. Does SMP address all 413/433/469 solvents? (or verify "none" ☐) Yes☐ No☐

(If no to C or D, write company and require submittal and/or update)

28. ARE EMERGENCY NOTIFICATION PROCEDURES POSTED THAT INCLUDE MSD CONTACTS? Yes☒ No☐

A. Was company provided notification cards & told to post where emergency response personnel can locate them? Yes☒ No☐

(Must post if company generates process wastewater or stores chemicals of concern)

29. IS COMPANY REQUIRED TO SELF-MONITOR ANY OF THEIR DISCHARGES? Yes☒ No☐

If yes: A. Is requirement contained in permit ☒ or other document ☐.

B. If other document, date & description: _____

C. How frequently is sampling required? Quarterly

D. How frequently are reports required? Quarterly

E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐

F. If no, explain: _____

30. DOES COMPANY SELF-MONITOR ITS WASTEWATER DISCHARGE? Yes☒ No☐

If yes:
- A. Does sample collection time period match co's production shifts? Yes☒ No☐
- B. Are representative grab/comp samples collected? Yes☒ No☐
- C. Are EPA-approved 40 CFR 136 wastewater test methods used? Yes☒ No☐
- D. Does company measure pH and/or temperature itself? Yes☐ No☒
- If yes: E. Have the company show equipment and procedure (meters, calibration stds, etc.). Is measurement performed properly? Yes☐ No☐
- F. If no to A,B,C, or E, explain needed changes: _____

31. DOES COMPANY CONTINUOUSLY MONITOR AT SAMPLE POINT AND KEEP A PERMANENT RECORD FOR: pH ☐, TEMP ☐, LEL ☐? Yes☐ No☒

If yes:
- A. At which SPs? _____
- B. Are discharge limits in PIMS "alert only"? (If not, change to that & make note: _____) Yes☐ No☐
- C. Does company submit quarterly summaries? Yes☐ No☐
- D. If no, explain: _____

32. DOES MSD SPLIT SAMPLES WITH THE COMPANY? Yes☐ No☒

If yes:
- A. Is company having the samples analyzed Yes☐ No☐
- B. How does company insure proper preservation, holding times & analytical methods? _____
- C. Has company submitted results of all split sample analyses since the last insp? Yes☐ No☐
- D. Have results been submitted within 28 days of the collection's calendar quarter? Yes☐ No☐
- E. If no to C, or D, explain: _____
- F. Does company still want to split samples? Yes☐ No☐
- G. Comments: _____

33. IS COMPANY REQUIRED TO REGULARLY SUBMIT ANY REPORTS OTHER THAN SELF-MONITORING REPORTS? Yes☒ No☐

If yes:
- A. Is requirement contained in permit ☒ or other document ☐.
- B. If other document, date & description: _____
- C. What is required to be reported? Radioactive Material Discharge
- D. How frequently are reports required? Quarterly
- E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐
- F. If no, explain: _____

34. IS COMPANY UNDER ANY ENVIRONMENTAL ENFORCEMENT ORDERS OR REQUIREMENTS TO SUBMIT COMPLIANCE SCHEDULE REPORTS? Yes☐ No☒

If yes:
- A. Type and date: _____
- B. Have the reports & actions been on-time & complete? Yes☐ No☐
- C. If no, explain: _____

35. ASK COMPANY: IS COMPANY IN COMPLIANCE W/APPLICABLE NESHAP REGULATIONS FOR WW DISCHARGES? Yes☒ No☐
[To see if 40CFR63 applies to MSD plant, per §§63.1580(b) & 63.1582(a). Some MDNR-issued Title V air permits for specific processes allow pre-approved WW discharge. City/County-issued air permits are not NESHAP permits.]

If no:
- A. Describe: _____
- B. Was MDNR Air Pollution Control informed? (must be done) Yes☐ No☐

36. DOES COMPANY RETAIN ALL WASTEWATER RECORDS FOR AT LEAST 5 YEARS? Yes☒ No☐

If no:
- A. How long does company retain records? _____
- B. Was company told to retain for at least 5 years, per ordinance? Yes☐ No☐
- C. Where are they kept? EHS building files at 4522 McKinley Ave.

37. IS COMPANY CLASSIFIED AS A SIGNIFICANT INDUSTRIAL USER (SIU)? Yes☒ No☐

If yes: A. Check & explain applicable criteria:

- ☐ Process subject to categorical stds under 40 CFR 403.6. Which cat. stds? _____
- ☒ Process discharge => 25,000 GPD Total process volume: 219,661 GPD
- ☐ Process discharge => 5% of TP ADW hydraulic capacity TP ADW hydraulic capacity: _____. Percent: _____
- ☐ Process discharge => 5% of TP ADW organic capacity Which organic pollutant? _____ TP ADW organic capacity: _____. Percent: _____
- ☐ Reasonable potential for adverse effect on operations Why? _____
- ☐ Reasonable potential for violating PT std or req't Which ones & why? _____

B. Does company own its bldg (is it listed as the owner in E-CIS)? Yes☒ No☐

If no: C. What is Bldg owner name (use DBA if avail.)? _____ (check E-CIS CAPS Customer Info)

D: What is Bldg owner mailing address? _____ (check E-CIS CAPS Customer Info)

38. DO MSD CLASSIFICATIONS NEED TO BE REVISED? Yes☐ No☒

If yes: A. Indicate correct classifications:

SIU ☐ Non-Significant CIU ☐ CIU ☐ Surcharge ☐ Non-Toxic Process Water/Wastes ☐
Toxics-Bearing Waste ☐ No Process Discharge ☐ Multi-User ☐ Special Handling/Billing ☐

B. Explain changes: _____

39. IS COMPANY CLASSIFIED AS "Multi-User"? Yes☐ No☒

If yes:

A. Is company's discharge segregated from other tenants' discharge? Yes☐ No☐

B. If no to A, does the company own the bldg/receive the MSD bills? Yes☐ No☐

C. If yes to B, was company informed it is responsible for total discharge, or else must provide segregated sample points? Yes☐ No☐

D. If no to B, are any Process/P&E Wash-type wastes discharged? Yes☐ No☐

E. If yes to D, are the wastes completely innocuous? Yes☐ No☐
(And explain why/why not: _____)

F. If yes to D, and no to E, company must accept responsibility or provide segregated SP.
Acceptance letter date: _____ Or write company with requirement ☐

G. If no to D or yes to E, are limits "alert only" on PIMS? Yes☐ No☐

H. Comments: _____

40. IS COMPANY CLASSIFIED AS "Special Handling/Billing"? Yes☐ No☒

If yes:

A. Why? _____

B. Are any changes needed to reasons/details? Yes☐ No☐

C. If yes, explain: _____

D. Were company records reviewed & verified for special handling/billing reports? NA☐ Yes☐ No☐

41. SAMPLE POINTS

						Auto-sampler ready?	DJ (y/n)
SP #	001	Fed.Reg.	N/A	Components:	Sanitary, P&E wash, process waste, RO reject, lab waste, CT blowdown, storm water	Yes	No
SP #	003	Fed.Reg.	N/A	Components:	Sanitary, P&E wash, process waste, CT blowdown, storm water, lab waste	Yes	No
SP #	005	Fed.Reg.	N/A	Components:	Sanitary, RO reject, boiler blowdown, P&E wash, process waste, lab waste, kitchen waste, CT blowdown, storm water	Yes	No
SP #	007	Fed.Reg.	N/A	Components:	Sanitary, lab waste, P&E wash, CT blowdown, storm water	Yes	No
SP #	008	Fed.Reg.	N/A	Components:	Sanitary, process waste, lab waste, P&E wash, RO reject, CT blowdown, storm water, kitchen waste	Yes	No
SP#	009	Fed.Reg.	N/A	Components:	Sanitary, process waste, lab waste, P&E wash, RO reject, CT blowdown, storm water	Yes	No
SP#	010	Fed.Reg.	N/A	Components:	Sanitary, P&E wash	Yes	No
SP#	011	Fed.Reg.	N/A	Components:	Sanitary, process waste, lab waste, P&E wash, RO reject, CT blowdown, storm water	Yes	No

42. ARE ANY SAMPLE POINTS TRAPPED VENTS? Yes☒ No☐

If yes: A. List SPs: SP010

B. Was co. informed that T-vents are preferred, and told why? Yes☒ No☐

43. ARE DISCHARGES AT ANY SPs SMALL/IRREGULAR ENOUGH TO ALLOW GRAB SAMPLES? Yes☐ No☒

If yes: A. List SPs and reasons: _____

44. ARE THERE ANY UNSAMPLED DISCHARGES? (list each lateral separately) Yes☐ No☒

Dummy SP #		Components:	
Dummy SP #		Components:	

If yes: A. Was company informed that SPs may be required in the future if the discharges change? Yes☐ No☐

B. Are all unsampled discharges very low flow and/or innocuous? Yes☐ No☐

C. If No to B, explain:_____

(Must also write company and require installation of SP)

45. DO ANY SAMPLE POINTS (including Unsampled/Dummy SPs) RECEIVE STORMWATER? Yes☒ No☐

If yes: A. List Sample Points: 001, 003, 005, 007, 008, 009, 011

46. WERE ALL SAMPLE POINTS (except Dummy SPs) OPENED & INSPECTED? No SPs☐ Yes☒ No☐

A. If any SPs cannot be located or opened, explain: _____

B. If any SP descript's need to be changed, explain: _____

C. Is it possible to use an auto-sampler to collect sampler (regardless of volume or batches)? Yes☒ No☐
Update PIMS indicator as needed.

D. Was ANY grease or other problem/debris observed in any SP? Yes☐ No☒

E. If yes to C, list SPs & describe: _____

F. If yes to C, was company directed to take corrective actions? Yes☐ No☐

47. REVIEW THE SAMPLE POINT MAP! Last map revision date: 9/29/15

A. Is the map correct and accurate in all its details? Yes☒ No☐

B If no, what changes are needed: _____

48. DO INSTRUCTIONS FOR "Contact Prior to Sampling" or FIELD VISIT "Special Instructions" NEED REVISION? Yes☐ No☒

If yes: A. List needed changes: _____

USE THIS SPACE FOR ANY OTHER COMMENTS/OBSERVATIONS PERTINENT TO YOUR INSPECTION OF THIS SITE.

The inspection was conducted ahead of the regular schedule date due to an anonymous complaint lodged to the MDNR about improper disposal of formalin waste at Barnes Hospital. Since the activities at the Barnes and Washington University Medical School campuses are interrelated, part of the investigation was to review Washington U. Med. School's formalin waste handling procedures. First, a letter dated 6/3/15 was sent to Wash. U. Med. School's Livi Isringhausen granting approval to discharge on site 100 gallons per week of 10% Formalin solution to the combined sewer system. During the inspection, Livi stated that there are no labs at present discharging formalin solution. According to her records, formalin solution has not been discharged from the entire facility since 2013, and that was from the Biotech building (SP005).

In July of 2016, MSD's Joe Twellman conducted a separate grease trap inspection at Wash. U. Med. School, and additional grease traps were discovered at the facility. SP005 was formerly the only sample point with grease traps, but it turns out that there are two grease traps on 005 and two on 008. The 005 traps are located in the Main Kitchen and the Farrell Learning & Teaching Center (FLTC) Café, and the 008 traps are located in the former Bookstore Starbucks Café and the Eric P. Newman Education Center (EPNEC). The Starbucks has closed and was being remodeled during the time of inspection. The grease trap is inactive at this time and will become reactivated when the proposed "Grab n Go" fast food venue opens. PIMS has been updated to include kitchen waste at SP008.

Construction of the Mid Campus Center (MCC) at 4590 Children's Place was completed in December 2016. As of the inspection date, the building was mostly empty, but are starting to occupy one floor at a time. The 0.5 M sq. ft. building will be administration offices only with an estimated 2,500 employees total when fully occupied. Sanitary will be the only discharge from the building. As for HVAC, cold air comes from the power plant (no chillers, CT), and they have four hot water boilers with no blowdown. There will be no cafeteria and no grease trap - a Kaldi's Coffee shop will be the only kind of vendor. Since this is an office building with sanitary discharge only with no process activities, we will monitor the building's discharge if the components change. Ms. Isringhausen mentioned that they have received a water bill, but they do not yet have a sewer bill. MSD has been notified of the new service, and the creation of an account is pending.

pH adjustment has been added to SP011 - facility contact Livi Isringhausen says the new research building (SMRB) will have activities that will need neutralization prior to discharging to the sewer.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

INDUSTRIAL USER CLASSIFICATIONS

01/12/1999	SIU
06/09/1998	TOX

WUNNENBERG INFO.

Base Map 19G3
Wun:St. Louis City & Co.
Grid: J 20 Page 26

SIU CRITERIA

PR25 Process Disch => 25,000 GPD

GENERAL INFORMATION

Office Mailing Address
660 S. Euclid Ave., Campus Box 8229
St. Louis, MO. 63110

Billing Address
660 S. Euclid Ave.
St Louis, MO. 63110

INSPECTION INFORMATION

Next Due	Insp Rslt	
01/10/2017	RIN	Jason Gill

PERMIT INFORMATION

Issue Date:	01/01/2013
Expire Date:	12/31/2017
Extended Date:	09/30/2015
Writer	Scott Rehmer
Issue Date:	10/01/2015
Expire Date:	12/31/2017
Extended Date:	
Writer	

IUQ INFORMATION

IUQ Recvd Date:	08/19/2002
Reviewer:	Fabian Grabski
IUQ Recvd Date:	06/28/2007
Reviewer:	James Goodall
IUQ Recvd Date:	07/13/2012
Reviewer:	Jason Gill
IUQ Recvd Date:	
Reviewer:	Mike Kynion

CONTACTS

BILL	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
FLD1	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
	Livi Isringhausen	Environmental Compliance Manager	CELL	(618) 410-6140 Ext.
FLD2	Linda Vishino	Environmental Compliance Officer	OFF	(314) 935-7864 Ext.
FLD3	Ted Reising	Environmental Professional IV	CELL	(314) 277-0423 Ext.
	Ted Reising	Environmental Professional IV	OFF	(314) 362-1095 Ext.
OFF1	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
	Livi Isringhausen	Environmental Compliance Manager	FAX	(314) 362-1095 Ext.

OPERATIONAL INFORMATION

Work Days: 7

				S	M	T	W	T	F	S
1	6,500	09:00AM	8.0	Y	Y	Y	Y	Y	Y	Y
2	600	06:00PM	8.0	Y	Y	Y	Y	Y	Y	Y

Total Emp: 7,100 Hrs: 16.0

OTHER AGENCIES INFORMATION

01/03/1997	Nuclear Regulatory Commission	24-00167-11
01/04/1997	MDNR - Hazardous Waste Program	001591
01/05/1997	EPA - Hazardous Waste Program	MOT300010857
09/28/2005	MSD - Billing Account Number	00377308
09/28/2005	MSD - Billing Account Number	00246496
09/28/2005	MSD - Billing Account Number	00246498
09/28/2005	MSD - Billing Account Number	00246499
07/21/2011	MSD - Billing Account Number	00473620
12/17/2015	MSD - Billing Account Number	01080052
12/17/2015	MSD - Billing Account Number	01080045

NON-SEWERED WASTE

On-Site Storage Y On-Site Disposal N Off-Site Disposal Y

07/13/2012	Equipment Oils and/or		8,000	LBS
07/13/2012	Infectious Waste		370,200	LBS
07/13/2012	Kitchen/Food Service		6,000	LBS
07/13/2012	Organic Compounds		27,000	LBS
07/13/2012	Paints or Paint Sludge:		2,700	LBS
07/13/2012	Radioactive Waste		1,500	LBS
07/13/2012	Solvents/Thinners		53,000	LBS
07/13/2012	Other	Lab chemicals/reagents	13,500	LBS

COMMENTS

RAW MATERIALS

EFF DATE	MATERIAL_DESCRIPTION	QUANTITY	UNIT
05/07/2004	Laboratory chemicals & reagents		

SIC INFORMATION

SIC	DESCRIPTION
0279	Animal Specialties, NEC
8221	Colleges, Universities & Professional Schools
8733	Noncommercial Research Organizations

Report No. PIMS012A 02/08/2017 3:03:57 pm
Data Date & Time: 02/08/2017 3:03:57 pm

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**

Premise Address: 660 S. Euclid Ave.
St. Louis MO. 63110

PRODUCTS

EFF DATE	DESCRIPTION	UNIT	AVG_PROD	MAX_PROD
05/07/2004	Medical school			
05/07/2004	Research institution			
05/07/2004	Research animal care & housing			

SEWER ACCOUNTS

Sewer Accounts
- 1024353000
- 1024353200
- 1024353300
- 1037377700
- 1048106300
- 1052452801
- 1055344000

WATER CONSUMPTION AND WASTEWATER DISCHARGE

Start Date = 02/01/2016 End Date = 02/01/2017 Wdays Cdays

Acct. No.			Consumption CCF's	Consumption Gallons		Wdays	Cdays	Discharge Gal/ Wday	Discharge Gal/ Cday
1024353000			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024353000	12/03/2015	02/10/2016	10,189	10,189	A	70	70	70	
1024353000	02/11/2016	06/16/2016	8,744	18,933		127	127	197	
1024353000	06/17/2016	08/03/2016	13,054	31,987		48	48	245	
1024353000	08/04/2016	12/15/2016	12,124	44,111		134	134	379	
RF 0.90	Acct. Total		44,111	32,997,322		379	379	78,358	78,358
1024353200			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024353200	11/13/2015	02/18/2016	18,528	18,528	A	98	98	98	
1024353200	02/19/2016	05/13/2016	20,052	38,580		85	85	183	
1024353200	05/14/2016	08/09/2016	25,116	63,696		88	88	271	
1024353200	08/10/2016	11/14/2016	25,271	88,967		97	97	368	
RF 0.68	Acct. Total		88,967	66,551,942		368	368	122,976	122,976
1024353300			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024353300	11/14/2015	03/04/2016	466	466	A	112	112	112	
1024353300	03/05/2016	06/24/2016	440	906		112	112	224	
1024353300	06/25/2016	09/21/2016	522	1,428		89	89	313	
1024353300	09/22/2016	12/16/2016	553	1,981		86	86	399	
RF 1.00	Acct. Total		1,981	1,481,891		399	399	3,714	3,714
1037377700			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1037377700	11/04/2015	02/01/2016	4,862	4,862	A	90	90	90	
1037377700	02/02/2016	05/13/2016	4,039	8,901		102	102	192	
1037377700	05/14/2016	08/03/2016	7,349	16,250		82	82	274	
1037377700	08/04/2016	11/01/2016	7,470	23,720		90	90	364	
RF 0.77	Acct. Total		23,720	17,743,793		364	364	37,535	37,535
1048106300			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1048106300	11/04/2015	02/01/2016	10,410	10,410	A	90	90	90	
1048106300	02/02/2016	05/12/2016	16,110	26,520		101	101	191	
1048106300	05/13/2016	08/03/2016	21,551	48,071		83	83	274	
1048106300	08/04/2016	11/01/2016	24,026	72,097		90	90	364	
RF 1.00	Acct. Total		72,097	53,932,305		364	364	148,166	148,166
1052452801			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1052452801		09/22/2016	0	0	A				
1052452801	09/23/2016	12/15/2016	1,717	1,717		84	84	84	
RF 1.00	Acct. Total		1,717	1,284,405		84	84	15,291	15,291
1055344000			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1055344000		12/15/2016	0	0	A				
RF 1.00	Acct. Total		0	0		0	0	1	1
	Facility Total		232,593						

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
01	Sanitary Or Combined	20G2	507C	Trunk Sewer	37 - Western Mill Creek

Description Lateral from buildings located S of McKin

Sewer Route S on Taylor to Clayton Av, E to Boyle, N t

SAMPLE POINT NO. 001 Ordinance **NPDES Outfall No.**

Description Flow from W in MH 30' N, 10' W of NE corner of building 27 (in alley)

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		3,518	GPD		GPD	D	7/13/12
Plant & Equipment		468	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	671	GPD		GPD	D	7/13/12
Sanitary		5,199	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Research labs	1,733	GPD		GPD	D	7/13/12
Cooling Tower Blo		3,250	GPD		GPD	D	2/27/13
	Total Flow Avg =	**14,839**		**Max =**			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
02	Sanitary Or Combined	19G3	229C	Trunk Sewer	37 - Western Mill Creek

Description Lateral from buildings N&S of Scott Av &

Sewer Route S on Taylor to Clayton Av, E to Boyle, N t

SAMPLE POINT NO. 005 Ordinance **NPDES Outfall No.**

Description MH 200' W of Taylor Ave. on S side of Scott Ave. in street

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		32,761	GPD		GPD	D	7/13/12
Boiler Blowdown		39,666	GPD		GPD	D	7/13/12
Plant & Equipment		1,996	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	840	GPD		GPD	D	7/13/12
Sanitary		75,445	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care and formalin s	93,406	GPD		GPD	D	7/13/12
Kitchen Waste		9,176	GPD		GPD	D	7/13/12
Cooling Tower Blo		88,038	GPD		GPD	D	2/27/13
	Total Flow Avg =	**341,328**		**Max =**			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Lemay
03	Sanitary Or Combined	19G3	543C	Trunk Sewer	79 - River des Peres - Upper

Description Lateral N from Building 14 W of Euclid A

Sewer Route W across S Kingshighway Blvd into Fores

SAMPLE POINT NO. 003 Ordinance **NPDES Outfall No.**

Description Flow from S in MH N of building 14 in drive, 6' S of O2 tanks

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment		2,179	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	546	GPD		GPD	D	7/13/12
Sanitary		31,974	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Research labs & animal care	23,284	GPD		GPD	D	7/13/12
Cooling Tower Blo		6,120	GPD		GPD	D	2/27/13

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave. St. Louis MO. 63110

Total Flow Avg = 64,103 **Max =**

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
05	Sanitary Or Combined	20G2	513C	Trunk Sewer	37 - Western Mill Creek

Description Multiple lines from Bldg 63 N to McKinle

Sewer Route E on McKinley to Taylor, S to Clayton, E

SAMPLE POINT NO. 007 Ordinance **NPDES Outfall No.**

Description Manhole in sidewalk E of Bldg 63; 111' N, 2' E of SE corner of building

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment		7,462	GPD		GPD	D	7/13/12
Sanitary		5,248	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care	10,327	GPD		GPD	D	7/13/12
Cooling Tower Blo		413	GPD		GPD	D	2/27/13

Total Flow Avg = 23,450 **Max =**

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Lemay
06	Sanitary Or Combined	19G3	492C	Trunk Sewer	82 - Euclid

Description Line exiting N side of Bldg 4 (425 S. Eucl

Sewer Route Flow N from bldg to main on Children's Pl

SAMPLE POINT NO. 008 Ordinance **NPDES Outfall No.**

Description MH in plaza 27' W, 27' N of NE bldg corner

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		33,618	GPD		GPD	D	7/13/12
Plant & Equipment		4,472	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	6,412	GPD		GPD	D	7/13/12
Sanitary		49,681	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care	16,560	GPD		GPD	D	7/13/12
Cooling Tower Blo		31,057	GPD		GPD	D	2/27/13
Kitchen Waste		1,000	GPD		GPD	D	1/10/17

Total Flow Avg = 142,800 **Max =**

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Lemay
07	Sanitary Or Combined	19G3	791C	Trunk Sewer	82 - Euclid

Description Line exiting E side of Bldg 4 (425 S. Eucli

Sewer Route Flow E from bldg to main on Euclid, E on

SAMPLE POINT NO. 009 Ordinance **NPDES Outfall No.**

Description MH in E plaza 36' N, 27' E of S NE bldg

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		33,618	GPD		GPD	D	7/13/12
Plant & Equipment		4,472	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	6,412	GPD		GPD	D	7/13/12
Sanitary		49,681	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care	16,560	GPD		GPD	D	7/13/12
Cooling Tower Blo		31,057	GPD		GPD	D	2/27/13

Total Flow Avg = 141,800 **Max =**

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave. St. Louis MO. 63110

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
08	Sanitary Or Combined	20G2	232C	Trunk Sewer	37 - Western Mill Creek

Description Line exiting W side of EHS Bldg to main

Sewer Route N on Taylor, E along Metro Link, N on Ne

SAMPLE POINT NO. 010 Ordinance **NPDES Outfall No.**

Description 6" trapped vent, 10'W, 36'N of EHS SW bldg corner

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment		485	GPD		GPD	D	9/15/15
Sanitary		550	GPD		GPD	D	9/15/15
	Total Flow Avg =	1,035		Max =			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
09	Sanitary Or Combined	20G2	239C	Trunk Sewer	37 - Western Mill Creek

Description Line exiting N side of 4515 McKinley to n

Sewer Route N on Taylor, E along Metro Link, N on Ne

SAMPLE POINT NO. 011 Ordinance **NPDES Outfall No.**

Description 12" vent 125'W, 30'N of NE bldg corner

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		15,500	GPD		GPD	D	9/15/15
Plant & Equipment		1,700	GPD		GPD	D	9/15/15
Process Waste	Photographic & teaching labs	2,250	GPD		GPD	D	9/15/15
Sanitary		20,000	GPD		GPD	D	9/15/15
Storm Water		0	GPD		GPD	D	9/15/15
Laboratory Waste	Lab research & animal care	8,250	GPD		GPD	D	9/15/15
Cooling Tower Blo		15,500	GPD		GPD	D	9/15/15
	Total Flow Avg =	63,200		Max =			

PRETREATMENT TYPES

SP	EFF DATE	TYPE	DESCRIPTION
001	07/13/2012	DC37	pH Adjustment/Neutralization
001	09/02/1998	DC32	Metallic Replacement
003	09/02/1998	DC32	Metallic Replacement
003	09/02/1998	DC37	pH Adjustment/Neutralization
005	06/16/1995	DC28	Grease Trap
005	07/17/2007	DC37	pH Adjustment/Neutralization
005	07/17/2007	DC32	Metallic Replacement
007	07/17/2007	DC37	pH Adjustment/Neutralization
008	07/26/2016	DC28	Grease Trap
008	07/13/2012	DC37	pH Adjustment/Neutralization
008	07/13/2012	DC32	Metallic Replacement
009	07/13/2012	DC37	pH Adjustment/Neutralization
009	07/13/2012	DC32	Metallic Replacement
010	09/15/2015	DC37	pH Adjustment/Neutralization
011	09/15/2015	DC32	Metallic Replacement
011	01/10/2017	DC37	pH Adjustment/Neutralization

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**

Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

PRIORITY POLLUTANTS

Pollutant Description	Status	Pollutant Description	Status	Pollutant Description	Status
Cyanide (Total)	KP	Asbestos (Fibrous)	SP	Antimony (Total)	KP
Silver (Total)	KP	Selenium (Total)	KP	Copper (Total)	KP
Cadmium (Total)	KP	Beryllium (Total)	KP	Zinc (Total)	KP
Thallium (Total)	KP	Nickel (Total)	KP	Mercury (Total)	KP
Lead (Total)	KP	Chromium (Total)	KP	Arsenic (Total)	KP
Phenol	KP	Isophorone	KP	4-Nitrophenol	KP
2,4-Dinitrophenol	SP	2-Chlorophenol	KP	Pyrene	KP
Pentachlorophenol	KP	Nitrobenzene	KP	Hexachlorocyclopentadiene	KP
Hexachlorobenzene	SP	Gamma-BHC	KP	Benzo (A) Pyrene	KP
Benzidine	KP	Aldrin	KP	Acrolein	KP
Toluene	KP	Methylene Chloride	KP	Chlorobenzene	KP
1,1,1-Trichloroethane	SP	Chloroform	KP	Carbon Tetrachloride	KP
Benzene	KP	1,2-Dichloroethane	KP	1,1,2-Trichloroethane	SP
Acenaphthylene	KP	Acenaphthene	KP	2,4,6-Trichlorophenol	SP
2,4-Dinitrotoluene	KP	1,2-Diphenylhydrazine	KP	Bis (2-Chloroethoxy) Methane	SP
Anthracene	KP	2,6-Dinitrotoluene	SP	2,4-Dichlorophenol	SP
2-Nitrophenol	KP	Phenanthrene	KP	Naphthalene	KP
Hexachloroethane	KP	Heptachlor Epoxide	KP	Diethyl Phthalate	KP
Dieldrin	KP	Chlordane	SP	Bis (2-Chloroisopropyl) Ether	SP
Bis (2-Chloroethyl) Ether	SP	1,2-Dichlorobenzene	KP	Trichloroethene	SP
Ethylbenzene	KP	Bromoform	KP	Acrylonitrile	KP
1,4-Dichlorobenzene	KP	1,1,2,2-Tetrachloroethane	KP		

EXTRA STRENGTH SURCHARGE INFORMATION

PIMS FACILITY CONTACTS

For Account Number Selected **1024353000** **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
Located at 660 S. Euclid Ave.
St. Louis MO 63110

Address Type / Contact Type	Contact Name	Contact Title	Email	Signatory	Phone Type	Number	Ext.
Billing Address							
Billing Contact	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wustl.edu	Y	OFF	(314)362-6735	
Office Mailing Address							
Office Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wustl.edu	Y	FAX	(314)362-1095	
Office Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wustl.edu	Y	OFF	(314)362-6735	
Premise Address							
Field Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wustl.edu	Y	CELL	(618)410-6140	
Field Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wustl.edu	Y	OFF	(314)362-6735	
Field Contact 1st Alt	Linda Vishino	Environmental Compliance Officer		Y	OFF	(314)935-7864	
Field Contact 2nd Alt	Ted Reising	Environmental Professional IV	reisingt@wusm.wustl.edu	N	CELL	(314)277-0423	
Field Contact 2nd Alt	Ted Reising	Environmental Professional IV	reisingt@wusm.wustl.edu	N	OFF	(314)362-1095	

MSD 045098

PIMS
REPORT OF FIELD SAMPLING REQUIREMENTS
WASHINGTON UNIVERSITY MEDICAL SCHOOL

Account No Entered **1024353000**

SPN	PREMISE ADDRESS	CITY	ST	ZIP
	660 S. Euclid Ave.	St. Louis	MO	63110

001 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2017
	T237000	pH	Once/year	Grab	06/30/2017
	T247000	Temperature	Once/year	Grab	06/30/2017
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2017
	T257000	Total Phenols	Once/year	Grab	06/30/2017
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2017
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2017
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2017
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2017

003 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2017
	T237000	pH	Once/year	Grab	06/30/2017
	T247000	Temperature	Once/year	Grab	06/30/2017
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2017
	T257000	Total Phenols	Once/year	Grab	06/30/2017
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2017
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2017
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2017
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2017

005 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2017
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2017
	T237000	pH	Once/year	Grab	06/30/2017
	T247000	Temperature	Once/year	Grab	06/30/2017
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2017
	T257000	Total Phenols	Once/year	Grab	06/30/2017
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2017
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2017
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2017
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2017

007 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2017
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2017
	T237000	pH	Once/year	Grab	06/30/2017
	T247000	Temperature	Once/year	Grab	06/30/2017
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2017
	T257000	Total Phenols	Once/year	Grab	06/30/2017
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017

Account No Entered **1024353000**

SPN	PREMISE ADDRESS		CITY	ST	ZIP	
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab		06/30/2017
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs		06/30/2017
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs		06/30/2017
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab		06/30/2017

008 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2017
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2017
	T237000	pH	Once/year	Grab	06/30/2017
	T247000	Temperature	Once/year	Grab	06/30/2017
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2017
	T257000	Total Phenols	Once/year	Grab	06/30/2017
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2017
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2017
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2017
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2017

009 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2017
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2017
	T237000	pH	Once/year	Grab	06/30/2017
	T247000	Temperature	Once/year	Grab	06/30/2017
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2017
	T257000	Total Phenols	Once/year	Grab	06/30/2017
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2017
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2017
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2017
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2017

010 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2017
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2017
	T237000	pH	Once/year	Grab	06/30/2017
	T247000	Temperature	Once/year	Grab	06/30/2017
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2017
	T257000	Total Phenols	Once/year	Grab	06/30/2017
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017

Account No Entered **1024353000**

SPN	PREMISE ADDRESS		CITY	ST	ZIP	
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab		06/30/2017
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs		06/30/2017
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs		06/30/2017
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab		06/30/2017

011 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2017
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2017
	T237000	pH	Once/year	Grab	06/30/2017
	T247000	Temperature	Once/year	Grab	06/30/2017
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2017
	T257000	Total Phenols	Once/year	Grab	06/30/2017
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2017
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2017
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2017
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2017
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2017

Metropolitan Saint Louis Sewer District
2350 Market Street
Saint Louis, Missouri 63103-2555

WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid Ave.
St. Louis, MO 63110

Attn: Livi Isringhausen
Environmental Compliance Manager

INDUSTRIAL WASTEWATER DISCHARGE PERMIT NUMBER 1024353000

ANNUAL PERMIT FEE NOTICE

For permits in effect as of 10/01/2016.

Fee will be included on the next regular monthly bill from the Metropolitan St. Louis Sewer District.

Explanation of Charges

Fee for Pretreatment Program Discharge Permit covering the period October 1, 2016 through September 30, 2017 issued in accordance with the Metropolitan St. Louis District Ordinance #8660 for the location at **660 S. Euclid Ave.**

Base charge @ $150.00 per permit			$150.00
Volume charge @$0.72 per average daily Ccf	509.62	Ccfs	$366.93
Sample Point Charge @$100.00 per sample point	8	points	$800.00
		Total Fee Due:	**$1,316.93**

For inquiries about the Annual Permit Fee, please call 314-436-8756. For inquiries about payment of the fee, which will appear on your upcoming monthly bill, please call 1-866-281-5737.

THIS IS NOT A BILL
DO NOT PAY NOW
FEE WILL BE INCLUDED ON MONTHLY BILL

✓JAG

Michael S. Kynion Washington University Medical School

1024-3530-00

From: Isringhausen, Livi <isringhausenm@wustl.edu>
Sent: Thursday, November 03, 2016 2:13 PM
To: Michael S. Kynion
Subject: FW: MCC Sewer submittal to MSD

Good afternoon- This building will be opening in the next month. Do you need anything else from us?

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St.Louis
ENVIRONMENTAL HEALTH & SAFETY

1024-3530-00

Spoke with Ms. Isringhausen on 11-4-16. New bldg is office space only, thus sanitary WW only. Bldg is E. of Euclid, S. of Children's Place, & N. of Metrolink line.

SR 11/04/16

From: Isringhausen, Livi
Sent: Tuesday, May 24, 2016 11:28 AM
To: Michael S. Kynion
Subject: FW: MCC Sewer submittal to MSD

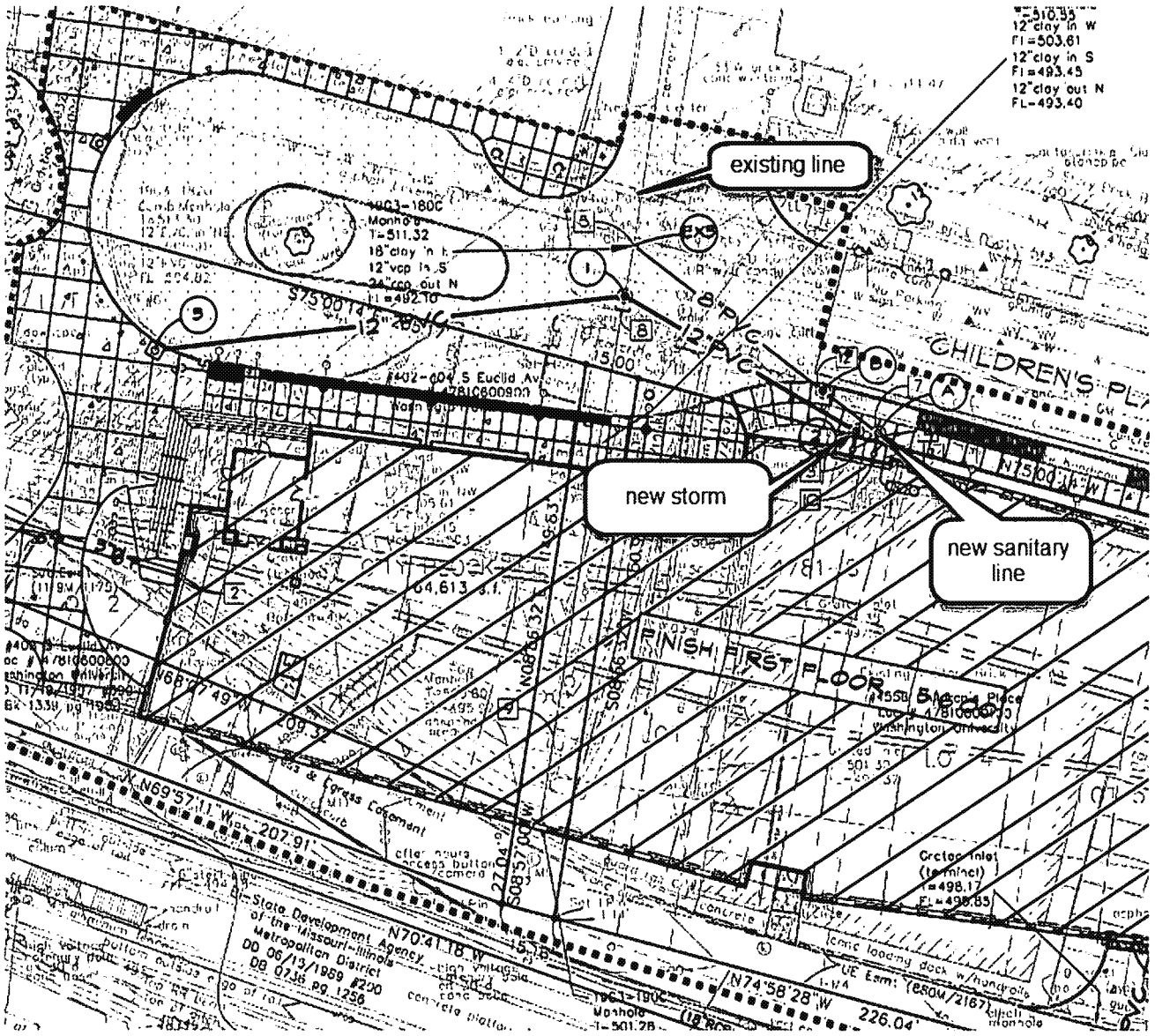
Good afternoon- Does this answer your question?

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St.Louis
ENVIRONMENTAL HEALTH & SAFETY

From: Brownfield, Casey
Sent: Tuesday, May 24, 2016 11:24 AM
To: Isringhausen, Livi
Cc: Sobo, Steven
Subject: RE: MCC Sewer submittal to MSD

Livi –

On Sheet C4, the new 8" and 12" mains are shown connecting into the existing sewer system north of the building within Children's Place. Below is a snip of the sheet with notes on it indicating the lines. Let me know if you have any other questions.



Casey Brownfield, LEED AP, FMP
Project Manager
Capital Projects|Facilities Management Department
Washington University School of Medicine
T 314-362-0038
C 314-575-8146

From: Isringhausen, Livi
Sent: Tuesday, May 24, 2016 10:09 AM
To: Brownfield, Casey
Subject: RE: MCC Sewer submittal to MSD

Casey- I could be missing this in these documents, but do wehave a plan that show where the sewer laterals are located in relation to the layout of the building?

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School

660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St. Louis
Environmental Health & Safety

SR
11/7

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2016 (Jan-Mar) (Apr-June) (July-Sept) √ (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

RECEIVED
OCT 27 2016
DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2016 (Jan-Mar) (Apr-June) (July-Sept) √ (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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OCT 27 2016
DIVISION OF
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Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

October 24, 2016
Lab No. 16E-2216
Invoice No. 220866

Attention: Livi Isringhausen

REPORT OF ANALYSIS ✓

SAMPLE ID: WASTEWATER GRAB, SP001, 10/18/16, 9:15 A.M.
WASTEWATER COMPOSITE, SP001, 10/18/16, 9:15 A.M. – 3:15 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	6.51	----	150.1	10/18/16
Temperature, °C (G)	25.2	----	170.1	10/18/16
Biological Oxygen Demand (C)	546	40	5210 B	10/24/16
Chemical Oxygen Demand (C)	1010	20	5220 D	10/20/16
Total Suspended Solids (C)	134	5	160.2	10/19/16
Oil & Grease (G)	6	5	1664	10/20/16
Silver (C)	< 0.05	0.05	200.7	10/19/16
Total Phenol (G)	0.012	0.005	420.4	10/21/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

RECEIVED
OCT 27 2016
DIVISION OF
ENVIRONMENTAL COMPLIANCE

MEMBER ACIL

AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST.
NOT OFFICIAL WITHOUT THE RAISED SEAL OF ST. LOUIS TESTING LABORATORIES, INC.
SEE REVERSE FOR CONDITIONS.

Founded 1929 St. Louis Testing Laboratories INCORPORATED

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660 South Euclid Ave.
St. Louis, MO 63110

October 24, 2016
Lab No. 16E-2216
Invoice No. 220866

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 10/17/16, 9:14 A.M.
WASTEWATER COMPOSITE, SP003, 10/17/16, 9:14 A.M. – 3:14 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.83	----	150.1	10/18/16
Temperature, °C (G)	25.8	----	170.1	10/18/16
Biological Oxygen Demand (C)	90	10	5210 B	10/24/16
Chemical Oxygen Demand (C)	108	10	5220 D	10/20/16
Total Suspended Solids (C)	20	5	160.2	10/19/16
Oil & Grease (G)	7	5	1664	10/20/16
Silver (C)	< 0.05	0.05	200.7	10/19/16
Total Phenol (G)	0.010	0.005	420.4	10/21/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

RECEIVED
OCT 27 2016
DIVISION OF
ENVIRONMENTAL COMPLIANCE

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

October 24, 2016
Lab No. 16E-2216
Invoice No. 220866

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 10/17/16, 8:31 A.M.
WASTEWATER COMPOSITE, SP005, 10/17/16, 8:31 A.M. – 2:31 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.59	----	150.1	10/17/16
Temperature, °C (G)	23.8	----	170.1	10/17/16
Biological Oxygen Demand (C)	141	20	5210 B	10/24/16
Chemical Oxygen Demand (C)	211	10	5220 D	10/20/16
Total Suspended Solids (C)	63	5	160.2	10/18/16
Oil & Grease (G)	6	5	1664	10/20/16
Silver (C)	< 0.05	0.05	200.7	10/19/16
Total Phenol (G)	0.035	0.005	420.4	10/21/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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October 24, 2016
Lab No. 16E-2216
Invoice No. 220866

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 10/17/16, 9:02 A.M.
WASTEWATER COMPOSITE, SP007, 10/17/16, 9:02 A.M. – 3:25 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.83	----	150.1	10/17/16
Temperature, °C (G)	25.2	----	170.1	10/17/16
Biological Oxygen Demand (C)	36	5	5210 B	10/24/16
Chemical Oxygen Demand (C)	66	10	5220 D	10/20/16
Total Suspended Solids (C)	41	5	160.2	10/19/16
Oil & Grease (G)	< 5	5	1664	10/20/16
Silver (C)	< 0.05	0.05	200.7	10/19/16
Total Phenol (G)	0.009	0.005	420.4	10/21/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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October 24, 2016
Lab No. 16E-2216
Invoice No. 220866

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 10/18/16, 9:30 A.M.
WASTEWATER COMPOSITE, SP008, 10/18/16, 9:30 A.M. – 4:05 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.23	----	150.1	10/18/16
Temperature, °C (G)	26.2	----	170.1	10/18/16
Biological Oxygen Demand (C)	594	40	5210 B	10/24/16
Chemical Oxygen Demand (C)	772	20	5220 D	10/20/16
Total Suspended Solids (C)	374	10	160.2	10/19/16
Oil & Grease (G)	17	5	1664	10/20/16
Silver (C)	< 0.05	0.05	200.7	10/19/16
Total Phenol (G)	0.080	0.005	420.4	10/21/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

October 24, 2016
Lab No. 16E-2216
Invoice No. 220866

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 10/18/16, 9:22 A.M.
WASTEWATER COMPOSITE, SP009, 10/18/16, 9:22 A.M. – 4:00 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.24	----	150.1	10/18/16
Temperature, °C (G)	22.2	----	170.1	10/18/16
Biological Oxygen Demand (C)	328	40	5210 B	10/24/16
Chemical Oxygen Demand (C)	575	10	5220 D	10/20/16
Total Suspended Solids (C)	214	5	160.2	10/19/16
Oil & Grease (G)	15	5	1664	10/20/16
Silver (C)	< 0.05	0.05	200.7	10/19/16
Total Phenol (G)	0.061	0.005	420.4	10/21/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

October 24, 2016
Lab No. 16E-2216
Invoice No. 220866

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 10/18/16, 9:50 A.M.
WASTEWATER COMPOSITE, SP010, 10/18/16, 9:50 A.M. – 3:50 P.M.

Units: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.84	----	150.1	10/18/16
Temperature, °C (G)	23.2	----	170.1	10/18/16
Biological Oxygen Demand (C)	378	40	5210 B	10/24/16
Chemical Oxygen Demand (C)	502	10	5220 D	10/20/16
Total Suspended Solids (C)	190	10	160.2	10/19/16
Oil & Grease (G)	6	5	1664	10/20/16
Silver (C)	< 0.05	0.05	200.7	10/19/16
Total Phenol (G)	0.080	0.005	420.4	10/21/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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October 24, 2016
Lab No. 16E-2216
Invoice No. 220866

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 10/18/16, 8:55 A.M.
WASTEWATER COMPOSITE, SP011, 10/18/16, 8:55 A.M. – 2:55 P.M.

Units: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.19	----	150.1	10/18/16
Temperature, °C (G)	22.9	----	170.1	10/18/16
Biological Oxygen Demand (C)	131	20	5210 B	10/24/16
Chemical Oxygen Demand (C)	186	10	5220 D	10/20/16
Total Suspended Solids (C)	119	5	160.2	10/19/16
Oil & Grease (G)	21	5	1664	10/20/16
Silver (C)	< 0.05	0.05	200.7	10/19/16
Total Phenol (G)	0.028	0.005	420.4	10/21/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/ss

Steve Root, Manager
Environmental Testing

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 10/26/2016

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OCT 27 2016

DIVISION OF
ENVIRONMENTAL COMPLIANCE

SR

METROPOLITAN SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No: 1024-3530-00

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2016** ☐ (JAN-MAR) ☐ (APR-JUN) ☒ (JUL-SEP) ☐ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
Br-77	0.0270
C-14	0.1590
H-3	49.0440
I-125	0.1354
I-125V	0.0113
P-32	0.1555
S-35	0.0368
U-238	0.0020
Zn-65	0.0552
TOTAL ACTIVITY DISCHARGED	**49.6263**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☒ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist

Telephone: (314) 362-4968

Signature: [signature]

Date: 10/18/2016

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

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OCT 18 2016
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Doug Mendoza

From: Doug Mendoza
Sent: Thursday, October 13, 2016 1:01 PM
To: Jason Gill
Cc: Trunko, Joe (joe.trunko@dnr.mo.gov)
Subject: FW: Report an Environmental Concern [#1250] - Barnes Jewish Hosp
Attachments: WASHINGTON UNIVERSITY MEDICAL SCHOOL.pdf

Thanks, Mike. Move up the inspection a couple of months. Be sure to follow up during the inspection to see if amounts have changed and potential impact.

---Doug

From: Jason Gill
Sent: Thursday, October 13, 2016 12:27 PM
To: Doug Mendoza
Subject: RE: Report an Environmental Concern [#1250] - Barnes Jewish Hosp

Doug -

I found a 6/3/15 letter to Wash U. Med. School for an approval to discharge formalin solution. Attached is the page from Laserfiche. My inspection for them is scheduled for 3/1/17.

Jason

From: Doug Mendoza
Sent: Wednesday, October 12, 2016 1:21 PM
To: Michael S. Kynion; Jason Gill; Dave Kupke
Cc: Christopher J. Bulmahn; Scott Rehmer
Subject: FW: Report an Environmental Concern [#1250] - Barnes Jewish Hosp

Mike/Jason/Dave,

See below. Please check each of your facilities regarding the formalin. Let me know if there is a record of approval or not. If not, be sure to check into this specifically during your upcoming inspections.

---Doug

Dave - BARNES-JEWISH HOSPITAL-NORTH CAMPUS [1024354100]

Mike - BARNES-JEWISH HOSPITAL-SOUTH CAMPUS [1024353400]

Jason - WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000]

From: Doug Mendoza
Sent: Wednesday, October 12, 2016 1:19 PM

To: 'Trunko, Joe'
Subject: RE: Report an Environmental Concern [#1250] - Barnes Jewish Hosp

Joe, there have been several facilities that have requested and received permission to send limited quantities of formalin to sewer. I cannot remember the individual facilities that have made the requests, however I do remember them being approved. We evaluate the requests based on the chemical and quantities relative to total wastewater volume.

Barnes-Jewish Hospital discharges roughly 600,000 GPD of wastewater to MSD. MSD actually treats it as two campuses, North and South. Washington University School of Medicine is in the same complex, It discharges another roughly 600,000 GPD.

We will check on the different facilities to see if they have requested specific approval. The files are very large, and it may take some time to search through them. If we do not find a written request and approval, we will then check into the discharges during our upcoming inspections.

From: Trunko, Joe [mailto:joe.trunko@dnr.mo.gov]
Sent: Wednesday, October 12, 2016 8:11 AM
To: Doug Mendoza
Subject: FW: Report an Environmental Concern [#1250] - Barnes Jewish Hosp

Hey Doug. We received the online complaint below concerning the disposal of waste formalin in the sewer at Barnes Jewish Hospital. Waste Formalin would not be classified as a hazardous waste and could be disposed of in the sanitary sewer under the HW rules. Is this something that MSD would look into?
Thanks!

Joseph L. Trunko, CHMM
Missouri Department of Natural Resources
Division of Environmental Quality
St. Louis Regional Office
7545 South Lindbergh Blvd, Suite 210
St. Louis, MO 63119
(314) 416-2960 (314) 416-6200 direct (314) 416-2970 fax
joe.trunko@dnr.mo.gov

Promoting, Protecting and Enjoying our Natural Resources.
Learn more at dnr.mo.gov.

From: Department of Natural Resources [mailto:no-reply@wufoo.com]
Sent: Monday, September 26, 2016 7:22 AM
To: Myers, Ethel; Markowski, Tom; Franklin, Dorothy
Subject: Report an Environmental Concern [#1250]

Type of Inquiry	Report an Environmental Concern
Select a County *	St. Louis City
Nearest City *	St. Louis
File this	YES

concern anonymously? (By selecting this option you will not be asked for contact information and therefore will not be contacted about the results of this inquiry)	
Do you wish to be notified as to the outcome of our investigation? If you don't give us enough contact information, then we will be unable to notify you.	No
Date of Incident or Date First Noticed	Friday, May 20, 2016
Name of Facility or Business in which the concern is about:	Barnes-Jewish Hospital
Facility Contact Name:	Unknown
Facility Contact Phone:	Unknown
Facility Address:	1 Barnes Jewish Plaza, St. Louis, MO 63017

Please describe your request. If you are reporting an environmental concern, describe location of concern from nearest town and road intersection.

I am not sure of the Missouri laws but I feel it is my duty to report the following situation. I have discovered many, many gallons of un-neutralized waste Formalin and other toxic wastes are being dumped down the drain in the histology/pathology lab at Barnes-Jewish Hospital on an ongoing basis. I have also observed this act. This has been a regular practice for years and although management has been made aware of this situation, they refuse to act or even investigate the regulations. I know, in many states, dumping of un-neutralized formalin and other toxic wastes is prohibited. I would assume that would hold true for the entire country, including Missouri. I hope this information will lead to steps that help protect the drinkability of the earth's water supply.

MSD 045121

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

July 27, 2016

Livi Isringhausen
WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
660 S. Euclid Ave.
St. Louis, MO 63110

Dear Ms. Isringhausen:

We have reviewed your application dated July 26, 2016 requesting approval to discharge 4,000 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater consists of flush water from the HVAC system at the Washington University - BJC Institute of Health Building located at 660 S. Euclid Avenue, St. Louis, Missouri. Additional information provided indicated the HVAC system in question has been inoperative for three years.

Based on the information you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary or combined sewer on site. **This approval is valid for 30 days from the date of this letter.**

You must be certain the waste is discharged into a sanitary or combined sewer inlet only. This letter does not authorize any discharge to a separate storm sewer, or to any watercourse, as any such discharge would be in violation of state and federal laws. **Please notify me at the number below when the discharge is to commence, and please ensure the onsite personnel discharging the wastewater in question are provided with a copy of this letter.**

This discharge has been approved based upon the information and sample analysis you provided, and is subject to the conditions stated above. This approval may be revoked by the District at any time if any of the information is found to be incorrect, or if the conditions of this approval are violated. Also, if the discharge causes any operational or maintenance problem within the District's collection or treatment system, or results in violations of any conditions of the District's NPDES permit, Washington University will be considered responsible for damages. If you have any questions, please call me at (314) 436-8755.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Steven M. Grace

Steve Grace
Environmental Assistant Engineer

bv

ec: Brian Gibson
Doug Mendoza

File: IU, WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000], 660 S. Euclid Ave.

C1A

SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Wash U Med. School - BJCIH Evaluated by: SMG

Premise Address: 660 S. Euclid Ave. Date: 7/27/16

Send approval letter to applicant

Application Dated: 7/26/16 Received: 7/26/16 All Requested Info. Received: 7/27/16

SOURCE FILING/DESCRIPTION

1 - Source in PIMS? (Y) / N
2 - If No, on IU Cross-Ref list? * Y / N
3 - If No, MSD Account # from E-CIS? Y / N
4 - If none, on "Source" list (pre-IMS)? ** Y / N
5 - If No, assigned SOUR# from PIMS.

SOURCE TYPE (circle): (IU) / Dead IU / SD

INDUSTRY ID: 1024353000

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 806 Description: Flush water from HVAC system @ BJCIH Bldg.

Normal WW flow from premise? (N/A) _____ ccf/month, _____ GPD, _____ GPH.

REGULATORY STATUS

Is waste a Hazardous Waste? (N) / Y _____

Categorical standards apply? (N) / Y _____

Contain PCB/ asbestos/ radioactive/ dioxin/ used oil? (N) / Y _____

Regulatory Agency Oversight? (N) / Y _____

DISCHARGE CONSIDERATIONS At MSD's connection:

Ordinance Limits (12559, p. 32) exceeded? (N) / Y _____

Ordinance other limits exceeded (dye, flash pt <140° F, temp >140° F, obstruction, nuisance foaming/odor, corrosion causing): (N) / Y _____

Water Quality Standard exceeded? (N) / Y _____

Fumes in sewer exceed PEL/TLV limits? (N) / Y _____

Vapors in sewer exceed 10% of LEL? (N) / Y _____

RECOMMENDATION: (APPROVE) / DENY (cc WWTP Mgr for timed discharge)

APPROVAL CONDITIONS:

Timed Discharge (COD/BOD/WQ/foam): (N) / Y Limit = _____ gal/hour

Require Treatment before Discharge? (N) / Y _____

Laboratory analysis fee due? (N) / Y $_____

SMR required? (N) / Y Frequency/analysis: _____

SMR log: (N/A) / Remediation.xls / Nonremediation.xls

Volume Billing applies (water unmetered or credited)? (N) / Y

Bill High Strength? (N) / Y Yes, If use >60,000 gal/month water ___and, > norm WW strgth

Surcharge calculation attached: N/A / (N) / Y

Expiration log updated: (N/A) / N / Y

O:\CostRecovery\Special Discharge\C1a.Checklist.doc

Metropolitan St. Louis Sewer District

10 East Grand Ave., St. Louis, MO 63147
Fax: 314-436-8766
email: spdisch@stlmsd.com

APPLICATION FOR SPECIAL DISCHARGE APPROVAL

I. WASTEWATER SOURCE IDENTIFICATION:

Site Name: Washington University School of Medicine
Premise Address: 660 S Euclid
City: St. Louis State: MO Zip: 63110
Owner: Washington University
Contact Person: Livi Isringhausen
Email: isringhausenm@wustl.edu
Phone: 314-362-6735 Fax: 314-362-1095

II. APPLICANT (mailing information):

Applicant Name: Livi Isringhausen
Company Name: Washington University School of Medicine
Mailing Address: 660 S Euclid Campus Box 8229
City: St Louis State: MO Zip: 63110
Email: isringhausenm@wustl.edu
Phone: 314-362-6735 Fax: 314-362-1095

III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):

1. Wastewater description/location: stagnant water and flush water from HVAC and heating piping
2. Process/activity generating wastewater: emptying and flushing of HVAC and heating piping
3. Physical and chemical composition: List all constituents, and known or potentially present regulated contaminants below.
   ☐ See separate listing enclosed, and/or ■ See analytical results enclosed, and/or ■ Material Safety Data Sheet enclosed.

DESCRIPTION	RANGE	UNIT
Water	99.08-100	%
Chemtron 4072 See SDS	0-.02	%

DESCRIPTION *(continued)*	RANGE	UNIT

4. Is this wastewater from a process subject to EPA's categorical standards in 40 CFR Subchapter N? ☐ Yes ■ No
   a. If yes, the applicable standards are in: 40 CFR Part _____, Subpart _____ ☐ Existing source ☐ New source
5. Does this wastewater contain polychlorinated biphenyls, asbestos or radioactive material? ☐ Yes ■ No
   a. If yes, describe: _____
6. Representative sample: ■ Laboratory results attached, and/or ☐ Sample provided (1/2 gallon minimum, clear container)
   a. Sample collection point/location: At the ends of the pipe Collection method: Grab
   b. Sampler's name/Co.: Pat Caldwell and Joch Jenkins/Washington University School of Medicine Sample date/time: 7/21/2016/11:00am
   c. Attach chain of custody as available
7. Discharge will occur over the following time period: ■ < 30 days ☐ ≥ Two years ☐ Other: _____
   a. Expected total volume of wastewater to be discharged over the time period above: 4000 Gallons
   b. Proposed discharge volume: 1000 Gallons, at a frequency of: ■ One time ☐ Daily ☐ Weekly ☐ Monthly ☐ Once/three months ☐ Once/six months ☐ Other: _____
8. Pretreatment of wastewater prior to discharge: ■ None ☐ Yes, describe: _____
   a. If yes, attach site plan, pretreatment system schematic, and design specifications.
9. Wastewater from a remediation project under: ☐ Superfund/CERCLA ☐ RCRA ☐ Voluntary program ☐ UST ■ Not applicable
   a. If from a remediation project, briefly describe the past and present utilization of the property: _____

III.B. MATERIAL FROM UNDERGROUND STORAGE TANK SOURCE

☒ **Not applicable (go to Section IV)**

Please answer the following questions if you are requesting to discharge wastewater associated with an underground storage tank system.

1. a. Wastewater from: ☐ Inside UST(s) ☐ UST system pit ☐ Excavation outside UST system pit ☐ Monitoring well ☐ Groundwater remediation system

   b. UST project involves wastewater from: ☐ UST(s) closed in place ☐ UST(s) removed ☐ Remediation ☐ Upgrade ☐ Maintenance activities ☐ Well monitoring ☐ Other, explain: _____

   c. If wastewater is from a closure project, how long has UST(s) been out of service: _____ years

2. a. State assigned UST site identification number: _____ ☐ Not applicable

   b. Number of USTs affected: _____ ☐ Unknown

   c. For the UST(s) involved, their state identification number(s): _____ ☐ Not applicable

   d. Service Station Identification Number, as applicable: _____

3. Tank contents/former contents: ☐ Gasoline ☐ #2 diesel ☐ Used oil ☐ Unknown ☐ Other: _____

IV. DISCHARGE LOCATION

1. ☒ On-site. Describe proposed point of entry to sewer and the discharge rate (must be a sanitary or combined sewer): _____
flexible drain hose will be routed out of the building's alley side and drained either into a trench drain (see map) Note: Range of discharge must not surcharge sewer line.

2. ☐ Haul to MSD Bissell Point Hauled Waste Receiving Station at 10 E. Grand, St. Louis, MO.

   a. Transporters Name: _____ and MSD Hauler ID Number: _____

   b. Hazardous Waste Certification:

   For wastewater which is hauled to MSD's Bissell Point Hauled Waste Receiving Station, I hereby certify that to the best of my knowledge and belief, the above hauled waste is not classified as a RCRA "hazardous waste" as defined by the MDNR in 10 CSR 25 or USEPA in 40 CFR Part 261.

   Applicant Name (print): Livi Isringhausen

   Signature: _____ **Date:** 7/26/2016

ADDITIONAL INFORMATION:

_____

_____

_____

_____

_____

_____

V. APPLICANT SIGNATURE AND CERTIFICATION

This application must be signed by the applicant: either the source contact, or a contractor or agent directly responsible for site activities.

I hereby certify that I am directly responsible for activities at the site regarding the wastewater to be discharged, and to the best of my knowledge and belief, based on appropriate inquiry, the information in this application is true, complete, and accurate. The samples or analyses submitted are representative of the materials to be discharged. If granted approval to discharge, I agree to abide by the MSD Ordinances, and all applicable federal, state and local regulations. I agree to pay the costs of any pre-approval analyses performed by MSD and to pay any applicable disposal charges for the volume and strength of the wastes discharged.

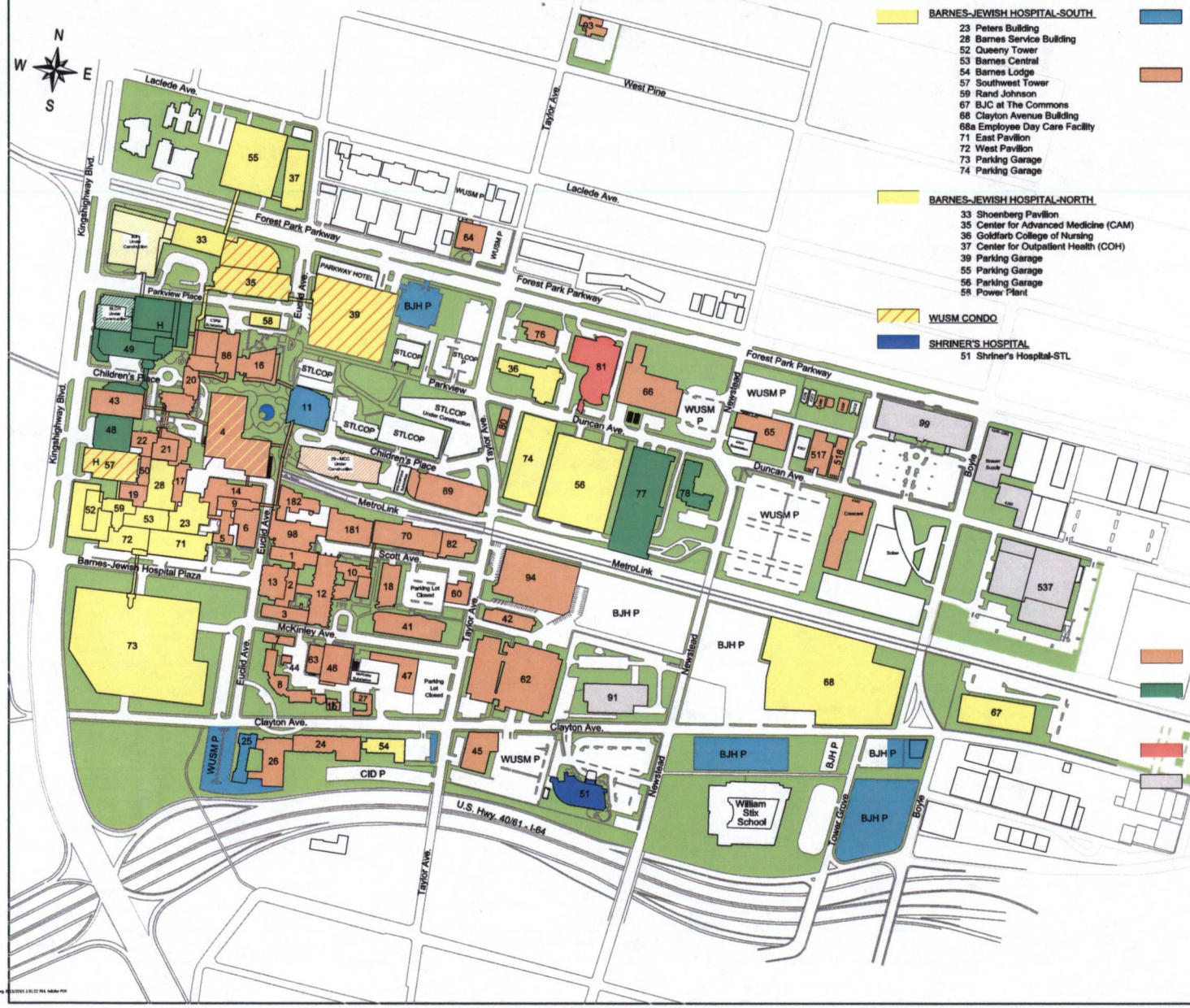
Applicant Name (print): Livi Isringhausen

Signature: _____ **Date:** 7/28/2016

FOR MSD USE ONLY:

File Name: Wash U Medical School ID No. 1024353000 Sample Point No. 806

WASHINGTON UNIVERSITY MEDICAL CENTER



BARNES-JEWISH HOSPITAL-SOUTH

23 Peters Building
28 Barnes Service Building
52 Queeny Tower
53 Barnes Central
54 Barnes Lodge
57 Southwest Tower
59 Rand Johnson
67 BJC at The Commons
68 Clayton Avenue Building
68a Employee Day Care Facility
71 East Pavilion
72 West Pavilion
73 Parking Garage
74 Parking Garage

BARNES-JEWISH HOSPITAL-NORTH

33 Shoenberg Pavilion
35 Center for Advanced Medicine (CAM)
36 Goldfarb College of Nursing
37 Center for Outpatient Health (COH)
39 Parking Garage
55 Parking Garage
56 Parking Garage
58 Power Plant

WUSM CONDO

SHRINER'S HOSPITAL

51 Shriner's Hospital-STL

WASHINGTON UNIVERSITY MEDICAL CENTER

11 Eric P. Newman Education Center
25 818 S. Euclid Ave.

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE

1 North Building
2 Cancer Research Building
3 South Building
4 BJC Institute of Health at WUSM (BJCIH)
5 Maternity
6 McMillan
7 Biomedical Computing Laboratory
8 Old Shriner's Building
9 Irene Walter Johnson Institute of Rehab
10 Olin Residence Hall
12 McDonnell Medical Sciences Building
13 Becker Medical Library
14 West Building
15 HAP Building
16 McDonnell Pediatric Research Building
17 Renard
18 East McDonnell S.R.F.
19 Mallinckrodt Institute of Radiology
20 Clinical Sciences Research Building
21 Wohl Clinic
22 Wohl Hospital
24 825 S. Taylor (CID School)
26 4560 Clayton (Research Building)
27 4533 Clayton
29 MCC
41 4515 McKinley Research Building
42 620 S. Taylor
43 Northwest Tower
44 Supply Room
45 4480 Clayton
46 SRF - East
47 4522 McKinley
60 Library Annex
62 Parking Garage
63 SIRF
64 4511 Forest Park
65 222 S. Newstead Ave.
66 4444 Forest Park
69 Parking Garage
70 East Building
76 4488 Forest Park
80 4500 Parkview
82 East Imaging
86 CSRB-North Tower Addition
93 Grant Medical Clinic
94 Taylor Avenue Building (TAB)
98 Farrell Learning and Teaching Center
181 Biotechnology Center
182 Euclid Power Plant
517 4363 Duncan
518 4353 Duncan

BARNARD HOSPITAL

50 Barnard Hospital

ST. LOUIS CHILDREN'S HOSPITAL

48 Parking Garage
49 Children's Hospital
77 Parking Garage
78 Child Development Center

HEALTH SOUTH

81 Rehabilitation Institue of St. Louis (RISL)

CORTEX & OTHER OWNERS

91 The Newstead Facility
99 CORTEX 1
537 @4240 Building

SURFACE PARKING LOTS

BJH P - Barnes-Jewish Hospital
CID P - Central Institute
STLCOP P - St. Louis College of Pharmacy
WUSM P - Medical School
H - Heliport

Washington University in St. Louis
SCHOOL OF MEDICINE

REVISION 07/30/15

MSD 045126

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

July 26, 2016
Lab No. 16E-1536
Invoice No. 217255
Page 1 of 1

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE: 2 Ea. Water Samples Collected 07/21/16
BJCIH West
Supply & Return
(Samples were Composited for One Analysis)

SUBJECT: Group I Analysis

UNITS: Milligrams per Liter (mg/L) unless otherwise noted

RESULTS:

ANALYTE	RESULTS	MQL	TEST METHOD	DATE OF ANALYSIS
pH, S.U.	9.99	----	150.1	07/21/16
Chemical Oxygen Demand	48	10	5220 D	07/25/16
Total Suspended Solids	< 5	5	160.2	07/22/16
Cadmium	< 0.05	0.05	200.7	07/25/16
Chromium	< 0.05	0.05	200.7	07/25/16
Copper	< 0.05	0.05	200.7	07/25/16
Iron	0.13	0.05	200.7	07/25/16
Lead	< 0.05	0.05	200.7	07/25/16
Nickel	< 0.05	0.05	200.7	07/25/16
Zinc	< 0.05	0.05	200.7	07/25/16

MQL: Minimum Quantitative Limit

Steve Root, Manager
Environmental Testing

SR/ss

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P. 4

Michael S. Kynion

SR

From: Jason Gill
Sent: Tuesday, July 26, 2016 9:03 AM
To: Michael S. Kynion
Subject: FW: Grease Trap sample points WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000]

From: Isringhausen, Livi [mailto:isringhausenm@wustl.edu]
Sent: Tuesday, July 26, 2016 8:49 AM
To: Jason Gill
Subject: Greast Trap sample points

Good Morning!

Sample Point 005- 2 traps- FLTC and Shell Café
Sample point 008 - 2 traps-Bookstore and EPNC

Let me know if you need anything else.

PIMS updated w/ new grease trap info. MK 7-26-16

Michael S. Kynion

From: Michael S. Kynion
Sent: Tuesday, July 19, 2016 2:25 PM
To: Scott Rehmer
Cc: Jason Gill
Subject: WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000]

Scott,

I received a phone call from Livi Isringhausen on 7/19/16. According to Ms. Isringhausen, Joe Twellman of MSD conducted a grease trap inspection at Wash U Med and identified additional grease traps at the facility. Currently there are 4 grease traps. Grease traps are located in the Main Kitchen, the Bookstore Starbucks Café, a second small kitchen in the Eric P. Newman Education Center (EPNEC) and the Farrell Learning & Teaching Center (FLTC) Café.

Thanks,
Mike

SR

METROPOLITAN SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION 1024-3530-00

Company Name: Washington University Medical School

Permit No:

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2016** ☐ (JAN-MAR) ☒ (APR-JUN) ☐ (JUL-SEP) ☐ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
C-14	0.1982
H-3	1.6069
I-125	0.0811
I-125V	0.1200
P-32	0.0998
S-35	0.0277
U-238	0.0010
Zn-65	0.0119
TOTAL ACTIVITY DISCHARGED	**2.1466**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☐ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist Telephone: (314) 362-4968

Signature: Date: 07/18/2016

RECEIVED

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

JUL 18 2016

DIVISION OF
ENVIRONMENTAL COMPLIANCE

SR
5/11

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2016 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2016 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2016
Lab No. 16E-0746
Invoice No. 214039

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 04/12/16, 8:50 A.M.
WASTEWATER COMPOSITE, SP001, 04/12/16, 8:50 A.M – 2:50 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.39	---	150.1	04/12/16
Temperature, °C (G)	22.1	---	170.1	04/12/16
Biological Oxygen Demand (C)	51	5	5210 B	04/13/16
Chemical Oxygen Demand (C)	152	10	5220 D	04/14/16
Total Suspended Solids (C)	47	5	160.2	04/14/16
Oil & Grease (G)	14	5	1664	04/14/16
Silver (C)	< 0.05	0.05	200.7	04/19/16
Total Phenol (G)	0.014	0.005	420.4	04/19/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

May 5, 2016
Lab No. 16E-0746
Invoice No. 214039

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 04/12/16, 9:10 A.M.
WASTEWATER COMPOSITE, SP003, 04/12/16, 9:10 A.M – 3:10 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.03	----	150.1	04/12/16
Temperature, °C (G)	20.9	----	170.1	04/12/16
Biological Oxygen Demand (C)	50	5	5210 B	04/13/16
Chemical Oxygen Demand (C)	368	10	5220 D	04/14/16
Total Suspended Solids (C)	54	5	160.2	04/14/16
Oil & Grease (G)	15	5	1664	04/14/16
Silver (C)	< 0.05	0.05	200.7	04/19/16
Total Phenol (G)	0.017	0.010	420.4	04/19/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

May 5, 2016
Lab No. 16E-0746
Invoice No. 214039

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 04/12/16, 9:35 A.M.
WASTEWATER COMPOSITE, SP005, 04/12/16, 9:40 A.M – 3:40 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.27	----	150.1	04/12/16
Temperature, °C (G)	17.3	----	170.1	04/12/16
Biological Oxygen Demand (C)	139	5	5210 B	04/13/16
Chemical Oxygen Demand (C)	357	10	5220 D	04/14/16
Total Suspended Solids (C)	127	5	160.2	04/14/16
Oil & Grease (G)	6	5	1664	04/14/16
Silver (C)	< 0.05	0.05	200.7	04/19/16
Total Phenol (G)	0.015	0.005	420.4	04/19/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

May 5, 2016
Lab No. 16E-0746
Invoice No. 214039

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 04/12/16, 9:05 A.M.
WASTEWATER COMPOSITE, SP007, 04/12/16, 9:05 A.M – 3:15 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.03	----	150.1	04/12/16
Temperature, °C (G)	22.0	----	170.1	04/12/16
Biological Oxygen Demand (C)	120	5	5210 B	04/13/16
Chemical Oxygen Demand (C)	216	10	5220 D	04/14/16
Total Suspended Solids (C)	85	5	160.2	04/14/16
Oil & Grease (G)	< 5	5	1664	04/14/16
Silver (C)	< 0.05	0.05	200.7	04/19/16
Total Phenol (G)	0.013	0.005	420.4	04/19/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2016
Lab No. 16E-0746
Invoice No. 214039

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 04/12/16, 9:25 A.M.
WASTEWATER COMPOSITE, SP008, 04/12/16, 9:25 A.M – 3:25 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.72	----	150.1	04/12/16
Temperature, °C (G)	19.1	----	170.1	04/12/16
Biological Oxygen Demand (C)	610	5	5210 B	04/13/16
Chemical Oxygen Demand (C)	1508	40	5220 D	04/14/16
Total Suspended Solids (C)	723	15	160.2	04/14/16
Oil & Grease (G)	25	5	1664	04/14/16
Silver (C)	< 0.05	0.05	200.7	04/19/16
Total Phenol (G)	0.140	0.005	420.4	04/19/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2016
Lab No. 16E-0746
Invoice No. 214039

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 04/13/16, 9:10 A.M.
WASTEWATER COMPOSITE, SP009, 04/13/16, 9:10 A.M – 3:10 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.28	----	150.1	04/13/16
Temperature, °C (G)	21.3	----	170.1	04/13/16
Biological Oxygen Demand (C)	263	5	5210 B	04/14/16
Chemical Oxygen Demand (C)	505	10	5220 D	04/14/16
Total Suspended Solids (C)	158	5	160.2	04/14/16
Oil & Grease (G)	22	5	1664	04/14/16
Silver (C)	< 0.05	0.05	200.7	04/19/16
Total Phenol (G)	0.030	0.005	420.4	04/19/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

MEMBER ACIL
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Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2016
Lab No. 16E-0746
Invoice No. 214039

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 04/28/16, 9:40 A.M.
WASTEWATER COMPOSITE, SP010, 04/28/16, 9:40 A.M – 3:40 P.M.

Units: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.50	----	150.1	04/28/16
Temperature, °C (G)	21.2	----	170.1	04/28/16
Biological Oxygen Demand (C)	169	5	5210 B	04/29/16
Chemical Oxygen Demand (C)	354	10	5220 D	05/04/16
Total Suspended Solids (C)	27	5	160.2	04/29/16
Oil & Grease (G)	15	5	1664	05/02/16
Silver (C)	< 0.05	0.05	200.7	05/02/16
Total Phenol (G)	0.216	0.005	420.4	04/29/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

May 5, 2016
Lab No. 16E-0746
Invoice No. 214039

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 04/28/16, 9:20 A.M.
WASTEWATER COMPOSITE, SP011, 04/28/16, 9:20 A.M – 3:20 P.M.

Units: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.46	----	150.1	04/28/16
Temperature, °C (G)	22.8	----	170.1	04/28/16
Biological Oxygen Demand (C)	215	5	5210 B	04/29/16
Chemical Oxygen Demand (C)	454	10	5220 D	05/04/16
Total Suspended Solids (C)	294	5	160.2	04/29/16
Oil & Grease (G)	< 5	5	1664	05/02/16
Silver (C)	< 0.05	0.05	200.7	05/02/16
Total Phenol (G)	0.008	0.005	420.4	04/29/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/ss

Steve Root, Manager
Environmental Testing

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SEE REVERSE FOR CONDITIONS.

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 5/5/16

RECEIVED

MAY 06 2016

DIVISION OF
ENVIRONMENTAL COMPLIANCE

Scott Rehmer

From: Isringhausen, Livi <isringhausenm@wustl.edu>
Sent: Wednesday, May 04, 2016 9:49 AM
To: Scott Rehmer
Subject: FW: Sewer disposal
Attachments: 4072.pdf

Passed to Steve Grace on 5-4-16 as a One-Time Special Discharge.

Good morning! Hope you are enjoying the sunshine. Did you ever get a chance to look at this??

1024-3530-00

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St. Louis
Environmental Health & Safety

From: Isringhausen, Livi
Sent: Monday, April 18, 2016 8:41 AM
To: Scott Rehmer (srehmer@stlmsd.com)
Subject: Sewer disposal

Good Morning! Looking for a little advice this morning. We have some HVAC heating water piping that has been idle for a couple of years and they need to flush and clean before putting it back into service. Facilities has sent me this proposal for flushing and cleaning the piping.

They estimate 830 gallons of water will be cleaned with a .02% of Chemtron 4072 (see MSDS). They will need to gravity drain the mixture from the piping and there is no nearby floor drain. They are proposing to run a drain hose from the low point chase on the first floor of the West Building, out the exterior door at grade on the northeast corner of the West Building, down the drive located between BJCIH and the West Building, and into one or more of the drive's trench drains. This would be right next to sample point 3.

Recommendations??

Livi Isringhausen
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Washington University in St. Louis
Environmental Health & Safety

METROPOLITAN SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No: 1024-3530-00

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2016** [X] (JAN-MAR) [ ] (APR-JUN) [ ] (JUL-SEP) [ ] (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
C-14	0.1480
Ca-45	0.0200
H-3	10.2294
I-125	0.0941
P-32	0.0861
S-35	0.0307
U-238	0.0300
Zn-65	0.0025
TOTAL ACTIVITY DISCHARGED	**10.6407**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

[✓] I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist Telephone: (314) 362-4968

Signature: [signature] Date: 04/18/2016

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL FACILITY INSPECTION REPORT

Company: Washington University Medical School — Account #: 1024353000
Premise Address: 660 S. Euclid — Zip Code: 63110
MSD Classes: SIU ☒ Non-Significant CIU ☐ CIU ☐ Surcharge ☐ Non-Toxic Process Water/Wastes ☐
Toxics-Bearing Waste ☒ No Process Discharge ☐ Multi-User ☐ Special Handling/Billing ☐
Company Representative: Livi Isringhausen
Title: Environmental Compliance Manager — Phone#: 314-362-6735
Inspector: Mike Kynion
Others Present: None
Inspection Date: **3/23/16** Time: From 08:45 AM To 10:35 AM (Last Insp. 2/23/15)

NOTE: ALL ITEMS ARE TO BE COMPLETED BASED ON EVENTS SINCE LAST INSPECTION. ANSWERS ARE BASED ON INFORMATION OBTAINED OR PROVIDED BY COMPANY DURING INSPECTION, AS WELL AS INFORMATION IN FILE.

***** DATABASE ALSO UPDATED WITH APPROPRIATE CHANGES - see attached database reports *****

1. A. ARE THERE ADDITIONAL NON-STORMWATER ACCOUNT NUMBERS? Yes ☒ No ☐
List them, note any changes: 1024352900 - this account is no longer associated with Wash U Med and has been removed from PIMS; 1024353900 is inactive and the account for the former EHS bldg and has been removed from PIMS and replaced by 1055344000; The current active accounts are: 1024353200, 1024353300, 1024353900, 1037377700, 1048106300, 1052452801, 1055344000.

B. Were any changes (including to the primary or changes only to suffixes) for acct no's with RFs? NA ☐ Yes ☐ No ☒

C. If yes to B, was Cost Recovery Unit informed of the change(s)? NA ☒ Yes ☐ No ☐

D. Did all acct no's have water usage on PIMS? ✓ ✓ Yes ☐ No ☒

E. If no to D, explain: The utility def alpha #s have been entered for 1052452801 and 1055344000 and should import on the next data update.

2. PROCESSES & CLEANUP/WASHDOWN:

	Cont/ Batch?	Water/Liquids Used?	DISCHARGE Frequency (or how else disposed?)	Sample pt.
Research and testing labs	Batch	Yes	Daily	001, 003, 005, 007, 008, 009, 011
Research mice and other animals (housing/care with cage washing)	Batch	Yes	Daily	003, 005, 007, 008, 009
Hazardous material cleanup (lab pack, bulking, prep for shipments)	Batch	Yes	Daily	010
Kitchen services	Batch	Yes	Daily	005
	(None)	N/A		
	(None)	N/A		

3. PRETREATMENT (other than grease traps) - describe:

	Sample pt.
pH adjust/neutralization	001, 003, 005, 007, 008, 009, 010
Silver recovery	001, 003, 005, 008, 009, 011

4. DOES COMPANY HAVE ANY GREASE TRAPS? Yes☒ No☐

If yes:
- A. List sample points: 005
- B. What is the frequency for cleaning & maintenance? Quarterly
- C. Are any additives used in traps? Yes☐ No☒
- D. If yes to C, was company warned MSD will bill them for blockages they cause? Yes☐ No☐
- E. Was company informed that MSD performs separate grease trap inspections? Yes☒ No☐

5. HAS COMPANY CONSTRUCTED NEW BLDGS/ADDITIONS WITH SEWERS SINCE LAST INSPECTION? Yes☐ No☒

If yes:
- A. Ask company: Did they notify MSD's Plan Review group? Unknown☐ Yes☐ No☐
- B. If no or unknown, has inspector notified Plan Review group? Yes☐ No☐
- C. Comments: _____

6. HAS COMPANY BEGUN DISCHARGING ANY NEW POLLUTANTS SINCE THE LAST INSPECTION? Yes☐ No☒

If yes:
- A. List pollutants & process: _____
- B. Will MSD STP exceed existing NPDES discharge limit(s)? Yes☐ No☐
- C. Will MSD STP's discharge exceed 0.1 mg/l for any new pollutant? Yes☐ No☐
  (MSD must notify MDNR if B or C is yes and discharge will continue [40CFR122.42(b)].)
- D. Comments: _____

7. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS THAT ARE "NOT APPLICABLE"? Yes☐ No☒
(including those that are 'No PSES' and 'General Stds Only')

If yes:
- A. List regulation & describe operations (including any discharge):
  _____
- B. Explain why it is N/A: _____

8. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS SUBJECT TO DISCHARGE LIMITS? Yes☐ No☒

If yes:
- A. List regulation & describe operations (including any discharge):
  _____
- B. Is maximum daily categorical discharge ≤ 100 GPD? (includes batch discharges) Yes☐ No☐

If yes to B:
- C. Batch ☐ or Continuous ☐? Volume verified how? _____
- D. Does company ever discharge untreated, concentrated categorical wastewater? Yes☐ No☐
- E. Was company in SNC during any part of the previous **24** months? Yes☐ No☐
- F. Date of last NSCIU Certification Statement: _____ or not currently NSCIU ☐
  (If no to B, yes to D or E, or Cert. Statement not submitted as required, company is not eligible to be an NSCIU)

9. HAS COMPANY CERTIFIED TO THE ABSENCE OF SPECIFIC CATEGORICAL POLLUTANTS? Yes☐ No☒
(New certification also is required for each permit renewal)

If yes:
- A. Certification date: _____
- B. Pollutants accepted by MSD as absent: _____
- C Were any requested "absent" pollutants rejected by MSD? Yes☐ No☐

  If yes to C: D. List them and explain why: _____
- E. Were all the accepted pollutants non-detect in all monitoring since certification was approved? Yes☐ No☐
  (If compared to intake water levels, explain details below)

  If no to E: F. Explain: _____
  G. Does Wastewater Discharge Permit need to be updated to remove detected pollutants? Yes☐ No☐
- H. Comments: _____

10. DOES CATEGORICAL WASTEWATER COMBINE WITH NON-CATEGORICAL WW PRIOR TO SAMPLING? Yes☐ No☒

If yes:
- A. At which points? _____
- B. Current applied factor: _____ Is it correct? Yes☐ No☐
- C. If no, list correct factor/explain? _____

11. IS ANY WASTEWATER SUBJECT TO PRODUCTION ☐ OR MASS ☐ BASED STANDARDS? Yes☐ No☒

If yes:
- A. At which points? _____
- B. Since calculation of the current limits, has the long term avg production rate or discharge volume changed by 20% or more? Yes☐ No☐
- C. If yes to B, explain: _____

12. ARE ANY RADIOACTIVE MATERIALS HANDLED? Yes☒ No☐

If yes: A. Describe operations & disposal: Radioactive materials for laboratory research is collected from laboratories and sent to the EHS bldg at 4522 McKinley for disposal. Some liquid rad waste is decayed on-site and sewered. Solids are hauled.

B. If non-exempt & disposed to sewer, does company submit quarterly reports to MSD? NA☐ Yes☒ No☐
(If No to B, write company & require quarterly reports of discharge to sewer – or have permit revised as needed)

C. Amount discharged in most recent four complete calendar quarters: 40.5238 mCi

D. Is company in compliance with requirements of sewer use ordinance prohibition? Yes☒ No☐

13. DOES COMPANY GENERATE WASTES/WASTEWATER BY GENETIC ENGINEERING RESEARCH? Yes☐ No☒

If yes: A. Does company render wastes/wastewater innocuous? Yes☐ No☐

B. If yes, describe how: _____

C. Does company have MSD authorization for disposal to sewer? NA☐ Yes☐ No☐

D. Most recent authorization date: _____

14. DOES PROCESS or P&E WASHDOWN WATER USE APPEAR EXCESSIVE? Yes☐ No☒
(IS COMPANY USING DILUTION TO MEET DISCHARGE LIMITATIONS?)

A. Explain how use was verified & any needed changes:
No excessive water usage was identified at the time of inspection. Majority of the process usage is generated from lab activities and animal care/cage washing. Information obtained from water records and the site contact confirm the large volume usage from multiple small labs across the campus is consistent with the activities conducted.

15. BASED ON OBSERVATIONS DURING INSPECTION, DOES COMPANY APPEAR TO HAVE SOME WATER THAT IS NOT DISCHARGED TO SEWER? Yes☒ No☐

If yes: A. Describe: Evaporative loss from HVAC systems.

B. Was "Return Factor Program" brochure given to company? Yes☒ No☐
(regardless of whether some water is not discharged to sewer)

16. HAS COMPANY BEEN GRANTED A VARIANCE FROM DISCHARGE LIMITATIONS CONTAINED IN THE SEWER USE ORDINANCE? Yes☐ No☒

If yes: A. Pollutant(s) and variance limit: _____

B. Latest approval date: _____

C. Is the approved variance more than 5 years old? Yes☐ No☐
(If yes to C, a new variance must be requested – write company)

17. HAVE ANY NUMERICAL LIMITATIONS BEEN APPLIED TO COMPANY, IN ADDITION TO THOSE ALREADY CONTAINED IN THE SEWER USE ORDINANCE? Yes☐ No☒

If yes: A. Pollutant(s) and discharge limit: _____

B. Date originally applied: _____, or as part of variance above? ☐

18. HAS COMPANY EXCEEDED ORDINANCE DISCHARGE LIMITS SINCE LAST INSPECTION OR WITHIN THE LAST 12 MONTHS (if last insp <12 months ago)? Yes☐ No☒

If yes: A.

Pollutant	When	Sample Points	Is problem resolved? Y/N	Describe
			N/A	
			N/A	
			N/A	
			N/A	
			N/A	

B. Comments: _____

19. HAS COMPANY EXCEEDED CATEGORICAL PRETREATMENT LIMITS SINCE THE LAST INSPECTION OR WITHIN LAST 12 MONTHS (if last insp <12 months ago)? NA☒ Yes☐ No☐

If yes: A.

Pollutant	When	Sample Points	Is problem resolved? Y/N	Describe
			N/A	
			N/A	
			N/A	
			N/A	
			N/A	

B. Comments: _____

20. HAVE THERE BEEN ANY PROBLEM DISCHARGES SINCE LAST INSPECTION? Yes☒ No☐

If yes: A. Upsets? ☐ Bypasses of pretreatment facilities? ☐
Spills? ☒ Slug discharges? ☐ Other? _____

B. Explain any marked: An oil spill occurred on 9/23/15 in the dock area of the CSRB bldg. Approximately 10 gallons of cooking oil from Children's Hospital. A drain by the dock area was blocked by trash which prevented majority of the oil from reaching the sewer. The drain and spill was cleaned. Spill documented in PIMS and email on 10/6/15.

21. COULD SPILLS OR LEAKS OF ANY PROCESS TANKS, OR STORAGE TANKS, OR STORED WASTES, OR STORED CHEMICALS EASILY REACH SANITARY SEWERS OR STORM DRAINS? Yes☐ No☒

If yes: A. What needs to be done?

_____

If no: B. How are they controlled?
Hazardous waste is stored in the EHS bldg at 4522 McKinley. The EHS bldg is equipped with sloped floors, containment pallets, contained rooms, spill kits, etc. Flammable cabinets and spill kits are available in applicable areas throughout the campus.

22. BASED ON OBSERVATIONS DURING INSPECTION, ARE THERE ANY AREAS WHERE COMPANY ACTIVITIES APPEAR TO IMPAIR STORMWATER RUNOFF? Yes☐ No☒

If yes: A. Describe: _____
B. What needs to be done? _____
C. Was "Illicit Stormwater Discharges" brochure given to company? Yes☒ No☐
(regardless of whether there are any problem areas)

23. DOES COMPANY HAVE ANY WRITTEN SLUG DISCHARGE CONTROL (INCLUDES SPILLS) PLANS [40CFR403.8(f)(2)(vi)]? Yes☒ No☐

If yes: A.

	Title (actual title, NOT "SPCCP")	Last Update
1.	Contingency Plan	3/1/16
2.	SPCCP	2/13/14

B. Were Plans reviewed for completeness, especially regarding batch discharges/slugs and Q.19/20/21? (must be done) Yes☒ No☐
C. Are updates needed to existing Plans? (If yes, write company & require) Yes☐ No☒
D. Are any Plans needed (either in addition to those listed in Part A, or if there currently are no written control plans)? (If yes, write company & require) Yes☐ No☒
E. Explain why/why not for C or D: Plans cover emergency contacts, spill prevention, spill containment/cleanup, disposal, etc. Wash U Med is currently in the process of updating their SPCCP.

24. DOES COMPANY HAVE ANY MAINTENANCE SHOP PARTS WASHERS? Yes☐ No☒

If yes: A. Parts washer solvent name: _____
B. Priority pollutants (or "none"): _____
C. How is spent solvent disposed? _____
(These solvents are not included in database's priority pollutants list, nor monitored for unless conditions show potential discharges)

25. ARE ANY ORGANICS OR SOLVENTS USED (OTHER THAN IN PARTS WASHERS)? Yes☒ No☐

If yes: A. Solvent name/ components

Solvent name/ components	Used for?	413/433/469 Process?	How disposed?	Priority Pollutant?
Multiple laboratory solvents (see PP list in PIMS)	Lab reagents	Yes☐ No☒	Evaporates or hauled	Yes☒ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐

26. DOES COMPANY HAVE A 413/433/469-REGULATORY "SOLVENT MANAGEMENT PLAN"? Yes☐ No☒
(Applies if co. has 413/433/469 processes, whether or not solvents used)

If yes:
- A. Is it part of a Spill/Slug Control Plan listed above? Yes[1.☐ 2.☐] No☐
- B. If no to A, date of last update for SMP: _____
- C. Is there a copy of the Spill/Slug Plan or SMP in the files? Yes☐ No☐
- D. Does SMP address all 413/433/469 solvents? (or verify "none" ☐) Yes☐ No☐
  (If no to C or D, write company and require submittal and/or update)

27. ARE EMERGENCY NOTIFICATION PROCEDURES POSTED THAT INCLUDE MSD CONTACTS? Yes☒ No☐
- A. Was company provided notification cards & told to post where emergency response personnel can locate them? Yes☒ No☐
  (Must post if company generates process wastewater or stores chemicals of concern)

28. IS COMPANY REQUIRED TO SELF-MONITOR ANY OF THEIR DISCHARGES? Yes☒ No☐

If yes:
- A. Is requirement contained in permit ☒ or other document ☐.
- B. If other document, date & description: _____
- C. How frequently is sampling required? Quarterly
- D. How frequently are reports required? Quarterly
- E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐
- F. If no, explain: _____

29. DOES COMPANY SELF-MONITOR ITS WASTEWATER DISCHARGE? Yes☒ No☐

If yes:
- A. Does sample collection time period match co's production shifts? Yes☒ No☐
- B. Are representative grab/comp samples collected? Yes☒ No☐
- C. Are EPA-approved 40 CFR 136 wastewater test methods used? Yes☒ No☐
- D. Does company measure pH and/or temperature itself? Yes☐ No☒

  If yes: E. Have the company show equipment and procedure (meters, calibration stds, etc.). Is measurement performed properly? Yes☐ No☐
- F. If no to A,B,C, or E, _____ explain needed changes:

30. DOES COMPANY CONTINUOUSLY MONITOR AT SAMPLE POINT AND KEEP A PERMANENT RECORD FOR: pH ☐, TEMP ☐, LEL ☐? Yes☐ No☒

If yes:
- A. At which SPs? _____
- B. Are discharge limits in PIMS "alert only"? (If not, change to that & make note: _____) Yes☐ No☐
- C. Does company submit quarterly summaries? Yes☐ No☐
- D. If no, explain: _____

31. DOES MSD SPLIT SAMPLES WITH THE COMPANY? Yes☐ No☒

If yes: A. Is company having the samples analyzed Yes☐ No☐

B. How does company insure proper preservation, holding times & analytical methods?

_____

C. Has company submitted results of all split sample analyses since the last insp? Yes☐ No☐

D. Have results been submitted within 28 days of the collection's calendar quarter? Yes☐ No☐

E. If no to C, or D, explain: _____

F. Does company still want to split samples? Yes☐ No☐

G. Comments: _____

32. IS COMPANY REQUIRED TO REGULARLY SUBMIT ANY REPORTS OTHER THAN SELF-MONITORING REPORTS? Yes☒ No☐

If yes: A. Is requirement contained in permit ☒ or other document ☐.

B. If other document, date & description: _____

C. What is required to be reported? Radioactive Material Discharge

D. How frequently are reports required? Quarterly

E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐

F. If no, explain: _____

33. IS COMPANY UNDER ANY ENVIRONMENTAL ENFORCEMENT ORDERS OR REQUIREMENTS TO SUBMIT COMPLIANCE SCHEDULE REPORTS? Yes☐ No☒

If yes: A. Type and date: _____

B. Have the reports & actions been on-time & complete? Yes☐ No☐

C. If no, explain: _____

34. ASK COMPANY: IS COMPANY IN COMPLIANCE W/APPLICABLE NESHAP REGULATIONS FOR WW DISCHARGES? Yes☒ No☐

[To see if 40CFR63 applies to MSD plant, per §§63.1580(b) & 63.1582(a). Some MDNR-issued Title V air permits for specific processes allow pre-approved WW discharge. City/County-issued air permits are not NESHAP permits.]

If no: A. Describe: _____

B. Was MDNR Air Pollution Control informed? (must be done) Yes☐ No☐

35. DOES COMPANY RETAIN ALL WASTEWATER RECORDS FOR AT LEAST 5 YEARS? Yes☒ No☐

If no: A. How long does company retain records? _____

B. Was company told to retain for at least 5 years, per ordinance? Yes☐ No☐

C. Where are they kept? In the EHS bldg files at 4522 McKinley Avenue.

36. IS COMPANY CLASSIFIED AS A SIGNIFICANT INDUSTRIAL USER (SIU)? Yes☒ No☐

If yes: A. Check & explain applicable criteria:

☐ Process subject to categorical stds under 40 CFR 403.6. Which cat. stds? _____

☒ Process discharge => 25,000 GPD Total process volume: 219,661 GPD

☐ Process discharge => 5% of TP ADW hydraulic capacity TP ADW hydraulic capacity: _____. Percent: _____

☐ Process discharge => 5% of TP ADW organic capacity Which organic pollutant? _____

TP ADW organic capacity: _____. Percent: _____

☐ Reasonable potential for adverse effect on operations Why? _____

☐ Reasonable potential for violating PT std or req't Which ones & why? _____

B. Does company own its bldg (is it listed as the owner in E-CIS)? Yes☒ No☐

If no: C. What is Bldg owner name (use DBA if avail.)? _____
(check E-CIS CAPS Customer Info)

D: What is Bldg owner mailing address? _____
(check E-CIS CAPS Customer Info)

37. DO MSD CLASSIFICATIONS NEED TO BE REVISED? Yes☐ No☒

If yes: A. Indicate correct classifications:

SIU ☐ Non-Significant CIU ☐ CIU ☐ Surcharge ☐ Non-Toxic Process Water/Wastes ☐

Toxics-Bearing Waste ☐ No Process Discharge ☐ Multi-User ☐ Special Handling/Billing ☐

B. Explain changes: _____

38. IS COMPANY CLASSIFIED AS "Multi-User"? Yes☐ No☒

If yes:
- A. Is company's discharge segregated from other tenants' discharge? Yes☐ No☐
- B. If no to A, does the company own the bldg/receive the MSD bills? Yes☐ No☐
- C. If yes to B, was company informed it is responsible for total discharge, or else must provide segregated sample points? Yes☐ No☐
- D. If no to B, are any Process/P&E Wash-type wastes discharged? Yes☐ No☐
- E. If yes to D, are the wastes completely innocuous? Yes☐ No☐
  (And explain why/why not: _____)
- F. If yes to D, and no to E, company must accept responsibility or provide segregated SP.
  Acceptance letter date: _____ Or write company with requirement ☐
- G. If no to D or yes to E, are limits "alert only" on PIMS? Yes☐ No☐
- H. Comments: _____

39. IS COMPANY CLASSIFIED AS "Special Handling/Billing"? Yes☐ No☒

If yes:
- A. Why? _____
- B. Are any changes needed to reasons/details? Yes☐ No☐
- C. If yes, explain: _____
- D. Were company records reviewed & verified for special handling/billing reports? NA☐ Yes☐ No☐

40. SAMPLE POINTS

						Auto-sampler ready?	DJ (y/n)
SP #	001	Fed.Reg.	N/A	Components:	Sanitary + P&E wash + Process + RO reject + Lab waste + CT blowdown + Storm water	Yes	No
SP #	003	Fed.Reg.	N/A	Components:	Sanitary + P&E wash + Process + Lab waste + CT blowdown + Storm water	Yes	No
SP #	005	Fed.Reg.	N/A	Components:	Sanitary + RO reject + Boiler blowdown + P&E wash + Process + Lab waste + Kitchen waste + CT blowdown + Storm water	Yes	No
SP #	007	Fed.Reg.	N/A	Components:	Sanitary + Lab waste + P&E wash + CT blowdown + Storm water	Yes	No
SP #	008	Fed.Reg.	N/A	Components:	Sanitary + Process + Lab waste + P&E wash + RO reject + CT blowdown + Storm water	Yes	No
SP #	009	Fed.Reg.	N/A	Components:	Sanitary + Process + Lab waste + P&E wash + RO reject + CT blowdown + Storm water	Yes	No
SP #	010	Fed.Reg.	N/A	Components:	Sanitary + P&E wash	Yes	No
SP #	011	Fed.Reg.	N/A	Components:	Sanitary + Process + Lab waste + P&E wash + RO reject + CT blowdown + Storm water	Yes	No

41. ARE ANY SAMPLE POINTS TRAPPED VENTS? Yes☒ No☐

If yes:
- A. List SPs: SP010
- B. Was co. informed that T-vents are preferred, and told why? Yes☒ No☐

42. ARE DISCHARGES AT ANY SPs SMALL/IRREGULAR ENOUGH TO ALLOW GRAB SAMPLES? Yes☐ No☒

If yes:
- A. List SPs and reasons: _____

43. ARE THERE ANY UNSAMPLED DISCHARGES? (list each lateral separately) Yes☐ No☒

Dummy SP #		Components:	
Dummy SP #		Components:	

If yes:
- A. Was company informed that SPs may be required in the future if the discharges change? Yes☐ No☐
- B. Are all unsampled discharges very low flow and/or innocuous? Yes☐ No☐
- C. If No to B, explain:_____

(Must also write company and require installation of SP)

44. DO ANY SAMPLE POINTS (including Unsampled/Dummy SPs) RECEIVE STORMWATER? Yes☒ No☐

If yes: A. List Sample Points: 001, 003, 005, 007, 008, 009, 011

45. WERE ALL SAMPLE POINTS (except Dummy SPs) OPENED & INSPECTED? No SPs☐ Yes☒ No☐

A. If any SPs cannot be located or opened, explain: _____

B. If any SP descript's need to be changed, explain: _____

C. Was ANY grease or other problem/debris observed in any SP? Yes☐ No☒

D. If yes to C, list SPs & describe: _____

E. If yes to C, was company directed to take corrective actions? Yes☐ No☐

46. REVIEW THE SAMPLE POINT MAP! Last map revision date: 9/29/15

A. Is the map correct and accurate in all its details? Yes☒ No☐

B If no, what changes are needed: _____

47. DO INSTRUCTIONS FOR "Contact Prior to Sampling" or FIELD VISIT "Special Instructions" NEED REVISION? Yes☐ No☒

If yes: A. List needed changes: _____

USE THIS SPACE FOR ANY OTHER COMMENTS/OBSERVATIONS PERTINENT TO YOUR INSPECTION OF THIS SITE.

Washington University Medical School is comprised of multiple research laboratories and teaching facilities. Lab waste, hazardous materials and radioactive materials are sent to the EHS/Hazardous Materials Building located at 4522 McKinley Avenue where the waste is processed and shipped out.

Sample points and associated buildings:

SP001: 4533 Clayton, HAP, 4560 Clayton, CID

SP003: Wohl Clinic, Wohl Hospital, Barnard, Renard, Mallinkrodt Institute of Radiology, Maternity, McMillian, IWJ, West

SP005: Power Plant, FLTC, North, Cancer Research, South, Becker Library, McDonnell Medical Sciences, Olin, East McDonnell, Library Annex, Biotech, East, East Imaging

SP007: Biomedical Computing Lab, Shriner's, SIRF, SIRF east

SP008: BJCIH, Peds, CSRB North Tower, Northwest Tower

SP009: BJCIH

SP010: EHS and Hazardous Waste Bldg.

SP011: SMRB

Lab waste is temporarily stored in hoods or drums with containment depending on the size of the lab. Lab waste is reportedly picked up daily at various campus locations. Once the waste has been picked up by the Environmental Dept. it is transported to 4522 McKinley. The waste is reportedly disposed of or hauled off site within 10 days of being received by the Environmental Department.

Wash U Med School recently demolished the Storz Building near Children's Place and Euclid. Wash U Med plan to construct a new office building (Mid Campus Center) in this location. Ms. Isringhausen will keep MSD updated on the construction of the new building.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

INDUSTRIAL USER CLASSIFICATIONS

01/12/1999	SIU
06/09/1998	TOX

WUNNENBERG INFO.

Base Map 19G3
Wun:St. Louis City & Co.
Grid: J 20 Page 26

SIU CRITERIA

PR25 Process Disch => 25,000 GPD

GENERAL INFORMATION

Office Mailing Address
660 S. Euclid Ave., Campus Box 8229
St. Louis, MO. 63110

Billing Address
660 S. Euclid Ave.
St Louis, MO. 63110

INSPECTION INFORMATION

Next Due	Insp Rslt	
03/23/2016	RIN	Mike Kynion

PERMIT INFORMATION

Issue Date:	01/01/2013
Expire Date:	12/31/2017
Extended Date:	09/30/2015
Writer	Scott Rehmer
Issue Date:	10/01/2015
Expire Date:	12/31/2017
Extended Date:	
Writer	

IUQ INFORMATION

IUQ Recvd Date:	08/19/2002
Reviewer:	Fabian Grabski
IUQ Recvd Date:	06/28/2007
Reviewer:	James Goodall
IUQ Recvd Date:	07/13/2012
Reviewer:	Jason Gill
IUQ Recvd Date:	
Reviewer:	Mike Kynion

CONTACTS

BILL	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
FLD1	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
	Livi Isringhausen	Environmental Compliance Manager	CELL	(618) 410-6140 Ext.
	Livi Isringhausen	Environmental Compliance Manager	FAX	(314) 362-1095 Ext.
FLD2	Linda Vishino	Environmental Compliance Officer	OFF	(314) 935-7864 Ext.
FLD3	Ted Reising	Environmental Professional IV	CELL	(314) 277-0423 Ext.
	Ted Reising	Environmental Professional IV	OFF	(314) 362-1095 Ext.
OFF1	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
	Livi Isringhausen	Environmental Compliance Manager	FAX	(314) 362-1095 Ext.

OPERATIONAL INFORMATION

Work Days: 7

				S	M	T	W	T	F	S
1	6,500	09:00AM	8.0	Y	Y	Y	Y	Y	Y	Y
2	600	06:00PM	8.0	Y	Y	Y	Y	Y	Y	Y

Total Emp: 7,100 Hrs: 16.0

OTHER AGENCIES INFORMATION

01/03/1997	Nuclear Regulatory Commission	24-00167-11
01/04/1997	MDNR - Hazardous Waste Program	001591
01/05/1997	EPA - Hazardous Waste Program	MOT300010857
09/28/2005	MSD - Billing Account Number	00377308
09/28/2005	MSD - Billing Account Number	00246496
09/28/2005	MSD - Billing Account Number	00246498
09/28/2005	MSD - Billing Account Number	00246499
07/21/2011	MSD - Billing Account Number	00473620
12/17/2015	MSD - Billing Account Number	01080052
12/17/2015	MSD - Billing Account Number	01080045

NON-SEWERED WASTE

On-Site Storage Y On-Site Disposal N Off-Site Disposal Y

07/13/2012	Other	Lab chemicals/reagents	13,500	LBS
07/13/2012	Solvents/Thinners		53,000	LBS
07/13/2012	Radioactive Waste		1,500	LBS
07/13/2012	Paints or Paint Sludge:		2,700	LBS
07/13/2012	Organic Compounds		27,000	LBS
07/13/2012	Kitchen/Food Service		6,000	LBS
07/13/2012	Infectious Waste		370,200	LBS
07/13/2012	Equipment Oils and/or		8,000	LBS

COMMENTS

RAW MATERIALS

EFF DATE	MATERIAL_DESCRIPTION	QUANTITY	UNIT
05/07/2004	Laboratory chemicals & reagents		

SIC INFORMATION

SIC	DESCRIPTION
0279	Animal Specialties, NEC
8221	Colleges, Universities & Professional Schools
8733	Noncommercial Research Organizations

Report No. PIMS012A 04/27/2016 10:27:55 am
Data Date & Time: 04/27/2016 10:27:55 am

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**

PRIMARY MSD ACCOUNT NO. **1024353000**

Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

PRODUCTS

EFF DATE	DESCRIPTION	UNIT	AVG_PROD	MAX_PROD
05/07/2004	Medical school			
05/07/2004	Research institution			
05/07/2004	Research animal care & housing			

SEWER ACCOUNTS

Sewer Accounts
1024353000
1024353200
1024353300
1037377700
1048106300
1052452801
1055344000

WATER CONSUMPTION AND WASTEWATER DISCHARGE

Start Date = 04/27/2015 End Date = 04/27/2016

Acct. No.			Consumption			Wdays	Cdays	Discharge	
1024353000			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024353000	08/01/2014	05/13/2015	9,469	9,469	A	286	286	286	
1024353000	05/14/2015	08/07/2015	12,965	22,434		86	86	372	
1024353000	08/08/2015	12/02/2015	13,329	35,763		117	117	489	
RF 0.90	Acct. Total		35,763	26,752,584		489	489	49,238	49,238
1024353200			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024353200	03/04/2015	05/21/2015	17,291	17,291	A	79	79	79	
1024353200	05/22/2015	09/09/2015	45,922	63,213		111	111	190	
1024353200	09/10/2015	11/12/2015	25,628	88,841		64	64	254	
RF 0.68	Acct. Total		88,841	66,457,688		254	254	177,918	177,918
1024353300			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024353300	02/19/2015	05/22/2015	112	112	A	93	93	93	
1024353300	05/23/2015	09/08/2015	400	512		109	109	202	
1024353300	09/09/2015	11/13/2015	784	1,296		66	66	268	
RF 1.00	Acct. Total		1,296	969,475		268	268	3,617	3,617
1037377700			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1037377700	02/05/2015	05/05/2015	3,177	3,177	A	90	90	90	
1037377700	05/06/2015	08/04/2015	4,646	7,823		91	91	181	
1037377700	08/05/2015	11/03/2015	7,136	14,959		91	91	272	
RF 0.77	Acct. Total		14,959	11,190,110		272	272	31,678	31,678
1048106300			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1048106300	02/05/2015	05/05/2015	13,950	13,950	A	90	90	90	
1048106300	05/06/2015	11/03/2015	25,881	39,831		182	182	272	
RF 1.00	Acct. Total		39,831	29,795,659		272	272	109,543	109,543
	Facility Total		180,690						

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
01	Sanitary Or Combined	20G2	507C	Trunk Sewer	37 - Western Mill Creek

Description Lateral from buildings located S of McKin

Sewer Route S on Taylor to Clayton Av, E to Boyle, N t

SAMPLE POINT NO. 001 Ordinance **NPDES Outfall No.**

Description Flow from W in MH 30' N, 10' W of NE corner of building 27 (in alley)

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		3,518	GPD		GPD	D	7/13/12
Plant & Equipment		468	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	671	GPD		GPD	D	7/13/12
Sanitary		5,199	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Research labs	1,733	GPD		GPD	D	7/13/12
Cooling Tower Blo		3,250	GPD		GPD	D	2/27/13
	Total Flow Avg =	**14,839**		**Max =**			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
02	Sanitary Or Combined	19G3	229C	Trunk Sewer	37 - Western Mill Creek

Description Lateral from buildings N&S of Scott Av &

Sewer Route S on Taylor to Clayton Av, E to Boyle, N t

SAMPLE POINT NO. 005 Ordinance **NPDES Outfall No.**

Description MH 200' W of Taylor Ave. on S side of Scott Ave. in street

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		32,761	GPD		GPD	D	7/13/12
Boiler Blowdown		39,666	GPD		GPD	D	7/13/12
Plant & Equipment		1,996	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	840	GPD		GPD	D	7/13/12
Sanitary		75,445	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care and formalin s	93,406	GPD		GPD	D	7/13/12
Kitchen Waste		9,176	GPD		GPD	D	7/13/12
Cooling Tower Blo		88,038	GPD		GPD	D	2/27/13
	Total Flow Avg =	**341,328**		**Max =**			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Lemay
03	Sanitary Or Combined	19G3	543C	Trunk Sewer	79 - River des Peres - Upper

Description Lateral N from Building 14 W of Euclid A

Sewer Route W across S Kingshighway Blvd into Fores

SAMPLE POINT NO. 003 Ordinance **NPDES Outfall No.**

Description Flow from S in MH N of building 14 in drive, 6' S of O2 tanks

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment		2,179	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	546	GPD		GPD	D	7/13/12
Sanitary		31,974	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Research labs & animal care	23,284	GPD		GPD	D	7/13/12
Cooling Tower Blo		6,120	GPD		GPD	D	2/27/13

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave. St. Louis MO. 63110

Total Flow Avg = **64,103** **Max =**

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
05	Sanitary Or Combined	20G2	513C	Trunk Sewer	37 - Western Mill Creek

Description Multiple lines from Bldg 63 N to McKinle

Sewer Route E on McKinley to Taylor, S to Clayton, E

SAMPLE POINT NO. 007 Ordinance **NPDES Outfall No.**

Description Manhole in sidewalk E of Bldg 63; 111' N, 2' E of SE corner of building

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment		7,462	GPD		GPD	D	7/13/12
Sanitary		5,248	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care	10,327	GPD		GPD	D	7/13/12
Cooling Tower Blo		413	GPD		GPD	D	2/27/13

Total Flow Avg = **23,450** **Max =**

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Lemay
06	Sanitary Or Combined	19G3	492C	Trunk Sewer	82 - Euclid

Description Line exiting N side of Bldg 4 (425 S. Eucl

Sewer Route Flow N from bldg to main on Children's Pl

SAMPLE POINT NO. 008 Ordinance **NPDES Outfall No.**

Description MH in plaza 27' W, 27' N of NE bldg corner

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		33,618	GPD		GPD	D	7/13/12
Plant & Equipment		4,472	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	6,412	GPD		GPD	D	7/13/12
Sanitary		49,681	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care	16,560	GPD		GPD	D	7/13/12
Cooling Tower Blo		31,057	GPD		GPD	D	2/27/13

Total Flow Avg = **141,800** **Max =**

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Lemay
07	Sanitary Or Combined	19G3	791C	Trunk Sewer	82 - Euclid

Description Line exiting E side of Bldg 4 (425 S. Eucli

Sewer Route Flow E from bldg to main on Euclid, E on

SAMPLE POINT NO. 009 Ordinance **NPDES Outfall No.**

Description MH in E plaza 36' N, 27' E of S NE bldg

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		33,618	GPD		GPD	D	7/13/12
Plant & Equipment		4,472	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	6,412	GPD		GPD	D	7/13/12
Sanitary		49,681	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care	16,560	GPD		GPD	D	7/13/12
Cooling Tower Blo		31,057	GPD		GPD	D	2/27/13

Total Flow Avg = **141,800** **Max =**

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
08	Sanitary Or Combined	20G2	232C	Trunk Sewer	37 - Western Mill Creek

Description Line exiting W side of EHS Bldg to main (

Sewer Route N on Taylor, E along Metro Link, N on Ne

SAMPLE POINT NO. 010 Ordinance **NPDES Outfall No.**

Description 6" trapped vent, 10'W, 36'N of EHS SW bldg corner

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment		485	GPD		GPD	D	9/15/15
Sanitary		550	GPD		GPD	D	9/15/15
	Total Flow Avg =	1,035		Max =			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH		Treatment Area	Bissell Point
09	Sanitary Or Combined	20G2	239C	Trunk Sewer	37 - Western Mill Creek

Description Line exiting N side of 4515 McKinley to n

Sewer Route N on Taylor, E along Metro Link, N on Ne

SAMPLE POINT NO. 011 Ordinance **NPDES Outfall No.**

Description 12" vent 125'W, 30'N of NE bldg corner

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Rejec		15,500	GPD		GPD	D	9/15/15
Plant & Equipment		1,700	GPD		GPD	D	9/15/15
Process Waste	Photographic & teaching labs	2,250	GPD		GPD	D	9/15/15
Sanitary		20,000	GPD		GPD	D	9/15/15
Storm Water		0	GPD		GPD	D	9/15/15
Laboratory Waste	Lab research & animal care	8,250	GPD		GPD	D	9/15/15
Cooling Tower Blo		15,500	GPD		GPD	D	9/15/15
	Total Flow Avg =	63,200		Max =			

PRETREATMENT TYPES

SP	EFF DATE	TYPE	DESCRIPTION
001	07/13/2012	DC37	pH Adjustment/Neutralization
001	09/02/1998	DC32	Metallic Replacement
003	09/02/1998	DC32	Metallic Replacement
003	09/02/1998	DC37	pH Adjustment/Neutralization
005	07/17/2007	DC32	Metallic Replacement
005	06/16/1999	DC28	Grease Trap
005	07/17/2007	DC37	pH Adjustment/Neutralization
007	07/17/2007	DC37	pH Adjustment/Neutralization
008	07/13/2012	DC32	Metallic Replacement
008	07/13/2012	DC37	pH Adjustment/Neutralization
009	07/13/2012	DC37	pH Adjustment/Neutralization
009	07/13/2012	DC32	Metallic Replacement
010	09/15/2015	DC37	pH Adjustment/Neutralization
011	09/15/2015	DC32	Metallic Replacement

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**

PRIMARY MSD ACCOUNT NO. **1024353000**

Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

PRIORITY POLLUTANTS

Pollutant Description	Status	Pollutant Description	Status	Pollutant Description	Status
Cyanide (Total)	KP	Asbestos (Fibrous)	SP	Antimony (Total)	KP
Silver (Total)	KP	Selenium (Total)	KP	Copper (Total)	KP
Cadmium (Total)	KP	Beryllium (Total)	KP	Zinc (Total)	KP
Thallium (Total)	KP	Nickel (Total)	KP	Mercury (Total)	KP
Lead (Total)	KP	Chromium (Total)	KP	Arsenic (Total)	KP
Phenol	KP	Isophorone	KP	4-Nitrophenol	KP
2,4-Dinitrophenol	SP	2-Chlorophenol	KP	Pyrene	KP
Pentachlorophenol	KP	Nitrobenzene	KP	Hexachlorocyclopentadiene	KP
Hexachlorobenzene	SP	Gamma-BHC	KP	Benzo (A) Pyrene	KP
Benzidine	KP	Aldrin	KP	Acrolein	KP
Toluene	KP	Methylene Chloride	KP	Chlorobenzene	KP
1,1,1-Trichloroethane	SP	Chloroform	KP	Carbon Tetrachloride	KP
Benzene	KP	1,2-Dichloroethane	KP	1,1,2-Trichloroethane	SP
Acenaphthylene	KP	Acenaphthene	KP	2,4,6-Trichlorophenol	SP
2,4-Dinitrotoluene	KP	1,2-Diphenylhydrazine	KP	Bis (2-Chloroethoxy) Methane	SP
Anthracene	KP	2,6-Dinitrotoluene	SP	2,4-Dichlorophenol	SP
2-Nitrophenol	KP	Phenanthrene	KP	Naphthalene	KP
Hexachloroethane	KP	Heptachlor Epoxide	KP	Diethyl Phthalate	KP
Dieldrin	KP	Chlordane	SP	Bis (2-Chloroisopropyl) Ether	SP
Bis (2-Chloroethyl) Ether	SP	1,2-Dichlorobenzene	KP	Trichloroethene	SP
Ethylbenzene	KP	Bromoform	KP	Acrylonitrile	KP
1,4-Dichlorobenzene	KP	1,1,2,2-Tetrachloroethane	KP		

EXTRA STRENGTH SURCHARGE INFORMATION

PIMS FACILITY CONTACTS

For Account Number Selected **1024353000** **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
Located at 660 S. Euclid Ave.
St. Louis MO 63110

Address Type / Contact Type	Contact Name	Contact Title	Email	Signatory	Phone Type	Number	Ext.
Billing Address							
Billing Contact	Livi Isringhausen	Environmental Compliance Manager		Y	OFF	(314)362-6735	
Office Mailing Address							
Office Contact - Primary	Livi Isringhausen	Environmental Compliance Manager		Y	FAX	(314)362-1095	
Office Contact - Primary	Livi Isringhausen	Environmental Compliance Manager		Y	OFF	(314)362-6735	
Premise Address							
Field Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wusm.wustl.edu	Y	CELL	(618)410-6140	
Field Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wusm.wustl.edu	Y	FAX	(314)362-1095	
Field Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wusm.wustl.edu	Y	OFF	(314)362-6735	
Field Contact 1st Alt	Linda Vishino	Environmental Compliance Officer		Y	OFF	(314)935-7864	
Field Contact 2nd Alt	Ted Reising	Environmental Professional IV	reisingt@wusm.wustl.edu	N	CELL	(314)277-0423	
Field Contact 2nd Alt	Ted Reising	Environmental Professional IV	reisingt@wusm.wustl.edu	N	OFF	(314)362-1095	

PIMS
REPORT OF FIELD SAMPLING REQUIREMENTS
WASHINGTON UNIVERSITY MEDICAL SCHOOL

Account No Entered **1024353000**

SPN	PREMISE ADDRESS	CITY	ST	ZIP
	660 S. Euclid Ave.	St. Louis	MO	63110

001 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2016
	T237000	pH	Once/year	Grab	06/30/2016
	T247000	Temperature	Once/year	Grab	06/30/2016
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2016
	T257000	Total Phenols	Once/year	Grab	06/30/2016
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2016
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2016
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2016
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2016

003 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2016
	T237000	pH	Once/year	Grab	06/30/2016
	T247000	Temperature	Once/year	Grab	06/30/2016
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2016
	T257000	Total Phenols	Once/year	Grab	06/30/2016
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2016
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2016
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2016
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2016

005 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2016
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2016
	T237000	pH	Once/year	Grab	06/30/2016
	T247000	Temperature	Once/year	Grab	06/30/2016
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2016
	T257000	Total Phenols	Once/year	Grab	06/30/2016
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2016
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2016
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2016
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2016

007 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2016
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2016
	T237000	pH	Once/year	Grab	06/30/2016
	T247000	Temperature	Once/year	Grab	06/30/2016
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2016
	T257000	Total Phenols	Once/year	Grab	06/30/2016
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016

Account No Entered **1024353000**

SPN	PREMISE ADDRESS		CITY	ST	ZIP
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2016
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2016
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2016
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2016

008 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2016
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2016
	T237000	pH	Once/year	Grab	06/30/2016
	T247000	Temperature	Once/year	Grab	06/30/2016
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2016
	T257000	Total Phenols	Once/year	Grab	06/30/2016
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2016
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2016
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2016
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2016

009 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2016
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2016
	T237000	pH	Once/year	Grab	06/30/2016
	T247000	Temperature	Once/year	Grab	06/30/2016
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2016
	T257000	Total Phenols	Once/year	Grab	06/30/2016
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2016
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2016
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2016
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2016

010 Project Code: IM= IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2016
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2016
	T237000	pH	Once/year	Grab	06/30/2016
	T247000	Temperature	Once/year	Grab	06/30/2016
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2016
	T257000	Total Phenols	Once/year	Grab	06/30/2016
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016

PIMS
REPORT OF FIELD SAMPLING REQUIREMENTS
WASHINGTON UNIVERSITY MEDICAL SCHOOL

Account No Entered **1024353000**

SPN	PREMISE ADDRESS		CITY	ST	ZIP	
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab		06/30/2016
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs		06/30/2016
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs		06/30/2016
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab		06/30/2016

011 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2016
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2016
	T237000	pH	Once/year	Grab	06/30/2016
	T247000	Temperature	Once/year	Grab	06/30/2016
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2016
	T257000	Total Phenols	Once/year	Grab	06/30/2016
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2016
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2016
Semi-Volatile Organics - Ba	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2016
Semi-Volatile Organics - Ac	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2016
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-	Once/year	Grab	06/30/2016

SR
3-2-16

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2016 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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MAR 02 2016
DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2016 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

February 3, 2016
Lab No. 16E-0146
Invoice No. 210162

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 01/26/16, 9:07 A.M.
WASTEWATER COMPOSITE, SP001, 01/26/16, 9:07 A.M – 3:07 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.91	----	150.1	01/26/16
Temperature, °C (G)	29.0	----	170.1	01/26/16
Biological Oxygen Demand (C)	79	5	5210 B	02/02/16
Chemical Oxygen Demand (C)	219	10	5220 D	01/28/16
Total Suspended Solids (C)	37	5	160.2	01/28/16
Oil & Grease (G)	11	5	1664	01/29/16
Silver (C)	<0.05	0.05	200.7	02/01/16
Total Phenol (G)	0.011	0.005	420.4	02/02/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

February 3, 2016
Lab No. 16E-0146
Invoice No. 210162

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 01/26/16, 9:45 A.M.
WASTEWATER COMPOSITE, SP003, 01/26/16, 9:45 A.M – 3:45 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.35	----	150.1	01/26/16
Temperature, °C (G)	9.5	----	170.1	01/26/16
Biological Oxygen Demand (C)	105	5	5210 B	02/02/16
Chemical Oxygen Demand (C)	258	10	5220 D	01/28/16
Total Suspended Solids (C)	93	5	160.2	01/28/16
Oil & Grease (G)	25	5	1664	01/29/16
Silver (C)	<0.05	0.05	200.7	02/01/16
Total Phenol (G)	0.027	0.010	420.4	02/02/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

February 3, 2016
Lab No. 16E-0146
Invoice No. 210162

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 01/26/16, 8:45 A.M.
WASTEWATER COMPOSITE, SP005, 01/26/16, 8:45 A.M – 2:45 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.64	----	150.1	01/26/16
Temperature, °C (G)	19.3	----	170.1	01/26/16
Biological Oxygen Demand (C)	130	5	5210 B	02/02/16
Chemical Oxygen Demand (C)	315	10	5220 D	01/28/16
Total Suspended Solids (C)	31	5	160.2	01/28/16
Oil & Grease (G)	14	5	1664	01/29/16
Silver (C)	<0.05	0.05	200.7	02/01/16
Total Phenol (G)	0.110	0.005	420.4	02/02/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

February 3, 2016
Lab No. 16E-0146
Invoice No. 210162

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 01/26/16, 9:15 A.M.
WASTEWATER COMPOSITE, SP007, 01/26/16, 9:15 A.M – 3:15 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.35	----	150.1	01/26/16
Temperature, °C (G)	30.1	----	170.1	01/26/16
Biological Oxygen Demand (C)	83	5	5210 B	02/02/16
Chemical Oxygen Demand (C)	251	10	5220 D	01/28/16
Total Suspended Solids (C)	119	5	160.2	01/28/16
Oil & Grease (G)	6	5	1664	01/29/16
Silver (C)	<0.05	0.05	200.7	02/01/16
Total Phenol (G)	0.011	0.005	420.4	02/02/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

February 3, 2016
Lab No. 16E-0146
Invoice No. 210162

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 01/26/16, 9:30 A.M.
WASTEWATER COMPOSITE, SP008, 01/26/16, 9:30 A.M – 3:20 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.49	----	150.1	01/26/16
Temperature, °C (G)	13.1	----	170.1	01/26/16
Biological Oxygen Demand (C)	516	5	5210 B	02/02/16
Chemical Oxygen Demand (C)	836	40	5220 D	01/28/16
Total Suspended Solids (C)	429	5	160.2	01/28/16
Oil & Grease (G)	11	5	1664	01/29/16
Silver (C)	<0.05	0.05	200.7	02/01/16
Total Phenol (G)	0.098	0.005	420.4	02/02/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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660 South Euclid Ave.
St. Louis, MO 63110

February 3, 2016
Lab No. 16E-0146
Invoice No. 210162

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 01/27/16, 8:55 A.M.
WASTEWATER COMPOSITE, SP009, 01/26/16, 8:55 A.M – 2:55 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.86	----	150.1	01/27/16
Temperature, °C (G)	21.7	----	170.1	01/27/16
Biological Oxygen Demand (C)	238	5	5210 B	02/02/16
Chemical Oxygen Demand (C)	491	10	5220 D	01/28/16
Total Suspended Solids (C)	114	5	160.2	01/28/16
Oil & Grease (G)	24	5	1664	01/29/16
Silver (C)	<0.05	0.05	200.7	02/01/16
Total Phenol (G)	0.081	0.005	420.4	02/02/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

February 3, 2016
Lab No. 16E-0146
Invoice No. 210162

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 01/27/16, 9:05 A.M.
WASTEWATER COMPOSITE, SP010, 01/26/16, 9:05 A.M – 3:05 P.M.

Units: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.75	----	150.1	01/27/16
Temperature, °C (G)	13.4	----	170.1	01/27/16
Biological Oxygen Demand (C)	163	5	5210 B	02/02/16
Chemical Oxygen Demand (C)	366	10	5220 D	01/28/16
Total Suspended Solids (C)	66	5	160.2	01/28/16
Oil & Grease (G)	29	5	1664	01/29/16
Silver (C)	<0.05	0.05	200.7	02/01/16
Total Phenol (G)	0.182	0.025	420.4	02/02/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/ss

Steve Root, Manager
Environmental Testing

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

March 1, 2016
Lab No. 16E-0338
Invoice No. 211266
Page 1 of 1

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 02/22/16, 9:45 A.M.
WASTEWATER COMPOSITE, SP011, 02/22/16, 9:45 A.M – 3:45 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.32	----	150.1	02/22/16
Temperature, °C (G)	16.7	----	170.1	02/22/16
Biological Oxygen Demand (C)	211	5	5210 B	02/29/16
Chemical Oxygen Demand (C)	472	10	5220 D	02/25/16
Total Suspended Solids (C)	186	5	160.2	02/23/16
Oil & Grease (G)	<5	5	1664	02/24/16
Silver (C)	<0.05	0.05	200.7	02/23/16
Total Phenol (G)	0.097	0.005	420.4	02/22/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/ss

Steve Root, Manager
Environmental Testing

MEMBER ACIL

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B DISCHARGE MONITORING REPORT CERTIFICATION

All permittees must sign and complete the information below:

I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print or type name of signing official: Livi Isringhausen

Title: Environmental Compliance Manager Telephone: 314-362-6735

Signature Date: 3/2/2016

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

SP

METROPOLITAN SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No: 1024-3530-00

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2015** ☐ (JAN-MAR) ☐ (APR-JUN) ☐ (JUL-SEP) ☒ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
C-14	0.1520
F-18	0.0000
H-3	4.2649
I-125	0.0487
P-32	0.1501
S-35	0.0406
U-238	0.0030
Zn-65	0.0020
TOTAL ACTIVITY DISCHARGED	**4.6613**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

[KS] I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist

Telephone: (314) 362-4968

Signature: Karla Spafford

Date: 01/19/2016

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

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ENVIRONMENTAL COMPLIANCE

Metropolitan Saint Louis Sewer District
2350 Market Street
Saint Louis, Missouri 63103-2555

WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid Ave.
St Louis, MO 63110

Attn: Livi Isringhausen
Environmental Compliance Manager

INDUSTRIAL WASTEWATER DISCHARGE PERMIT NUMBER 1024353000.

ANNUAL PERMIT FEE NOTICE

For permits in effect as of **10/01/2015**.

Fee will be included in a separate bill from the Metropolitan St. Louis Sewer District.

Explanation of Charges

Fee for Pretreatment Program Discharge Permit covering the period October 1, 2015 through September 30, 2016, issued in accordance with the Metropolitan St. Louis District Ordinance #12413 for the location at **660 S. Euclid Ave**.

Base charge @ $150.00 per permit			$150.00
Volume charge @$0.72 per average daily Ccf	368.19	Ccf(s)	265.10
Sample Point Charge @$100.00 per sample point	8	Point(s)	800.00
		Total Fee Due:	**1,215.10**

For inquiries about the Annual Permit Fee, please call 314-436-8756. For inquiries about payment of the fee, which appears on your monthly bill, please call 1-866-281-5737.

SR
11-3-15

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO; 63110
Monitoring Period: 2015 (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005		007		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached.	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2015 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		008		009		010		011		
Dates on Which Samples Were Collected		G:	See attached	G:	See attached	G:	See attached	G:	See attached	
		C:	See attached	C:	See attached	C:	See attached	C:	See attached	
Times at Which Samples Were Collected		G:	See attached	G:	See attached	G:	See attached	G:	See attached	
		C:	See attached	C:	See attached	C:	See attached	C:	See attached	
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

Attention: Livi Isringhausen

October 28, 2015
Lab No. 15E-2010
Invoice No. 2065972065
P.O. No. 2926272A
Page 1 of 8

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 10/19/15, 9:20 A.M.
WASTEWATER COMPOSITE, SP001, 10/19/15, 9:20 A.M – 3:30 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.95	----	150.1	10/19/15
Temperature, °C (G)	23.6	----	170.1	10/19/15
Biological Oxygen Demand (C)	102	5	5210 B	10/26/15
Chemical Oxygen Demand (C)	193	10	5220 D	10/23/15
Total Suspended Solids (C)	91	5	160.2	10/23/15
Oil & Grease (G)	< 5	5	1664	10/19/15
Silver (C)	< 0.05	0.05	200.7	10/23/15
Total Phenol (G)	0.017	0.005	420.4	10/23/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

October 28, 2015
Lab No. 15E-2010
Invoice No. 206597
P.O. No. 2926272A

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 10/19/15, 9:50 A.M.
WASTEWATER COMPOSITE, SP003, 10/19/15, 9:50 A.M. – 4:00 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.12	----	150.1	10/19/15
Temperature, °C (G)	20.4	----	170.1	10/19/15
Biological Oxygen Demand (C)	47	5	5210 B	10/26/15
Chemical Oxygen Demand (C)	69	10	5220 D	10/23/15
Total Suspended Solids (C)	< 5	5	160.2	10/23/15
Oil & Grease (G)	7	5	1664	10/19/15
Silver (C)	< 0.05	0.05	200.7	10/23/15
Total Phenol (G)	0.039	0.010	420.4	10/23/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

October 28, 2015
Lab No. 15E-2010
Invoice No. 206597
P.O. No. 2926272A

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 10/19/15, 9:00 A.M.
WASTEWATER COMPOSITE, SP005, 10/19/15, 9:00 A.M. – 3:20 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.92	----	150.1	10/19/15
Temperature, °C (G)	24.4	----	170.1	10/19/15
Biological Oxygen Demand (C)	75	5	5210 B	10/26/15
Chemical Oxygen Demand (C)	198	10	5220 D	10/23/15
Total Suspended Solids (C)	46	5	160.2	10/23/15
Oil & Grease (G)	8	5	1664	10/19/15
Silver (C)	< 0.05	0.05	200.7	10/23/15
Total Phenol (G)	0.041	0.005	420.4	10/23/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

October 28, 2015
Lab No. 15E-2010
Invoice No. 206597
P.O. No. 2926272A

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 10/19/15, 9:30 A.M.
WASTEWATER COMPOSITE, SP007, 10/19/15, 9:30 A.M. – 3:40 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.11	----	150.1	10/19/15
Temperature, °C (G)	26	----	170.1	10/19/15
Biological Oxygen Demand (C)	42	5	5210 B	10/26/15
Chemical Oxygen Demand (C)	67	10	5220 D	10/23/15
Total Suspended Solids (C)	53	5	160.2	10/23/15
Oil & Grease (G)	< 5	5	1664	10/19/15
Silver (C)	< 0.05	0.05	200.7	10/23/15
Total Phenol (G)	0.007	0.005	420.4	10/23/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

Attention: Livi Isringhausen

October 28, 2015
Lab No. 15E-2010
Invoice No. 206597
P.O. No. 2926272A
Page 5 of 8

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 10/19/15, 9:40 A.M.
WASTEWATER COMPOSITE, SP008, 10/19/15, 9:40 A.M. – 3:50 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.47	----	150.1	10/19/15
Temperature, °C (G)	25.8	----	170.1	10/19/15
Biological Oxygen Demand (C)	448	5	5210 B	10/26/15
Chemical Oxygen Demand (C)	740	10	5220 D	10/23/15
Total Suspended Solids (C)	417	5	160.2	10/23/15
Oil & Grease (G)	28	5	1664	10/19/15
Silver (C)	< 0.05	0.05	200.7	10/23/15
Total Phenol (G)	0.127	0.005	420.4	10/23/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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October 28, 2015
Lab No. 15E-2010
Invoice No. 206597
P.O. No. 2926272A
Page 6 of 8

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 10/20/15, 8:50 A.M.
WASTEWATER COMPOSITE, SP009, 10/20/15, 8:50 A.M. – 3:50 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.23	----	150.1	10/20/15
Temperature, °C (G)	27.1	----	170.1	10/20/15
Biological Oxygen Demand (C)	238	5	5210 B	10/26/15
Chemical Oxygen Demand (C)	509	10	5220 D	10/23/15
Total Suspended Solids (C)	185	5	160.2	10/23/15
Oil & Grease (G)	8	5	1664	10/21/15
Silver (C)	< 0.05	0.05	200.7	10/23/15
Total Phenol (G)	0.044	0.005	420.4	10/23/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

AN OFFICIAL COPY OF THIS REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST.
NOT OFFICIAL WITHOUT THE RAISED SEAL OF ST. LOUIS TESTING LABORATORIES, INC.
SEE REVERSE FOR CONDITIONS.

Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

October 28, 2015
Lab No. 15E-2010
Invoice No. 206597
P.O. No. 2926272A
Page 7 of 8

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 10/20/15, 9:00 A.M.
WASTEWATER COMPOSITE, SP010, 10/20/15, 9:05 A.M. – 4:00 P.M.

Units: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.32	----	150.1	10/20/15
Temperature, °C (G)	20.6	----	170.1	10/20/15
Biological Oxygen Demand (C)	462	5	5210 B	10/26/15
Chemical Oxygen Demand (C)	699	10	5220 D	10/23/15
Total Suspended Solids (C)	95	5	160.2	10/23/15
Oil & Grease (G)	6	5	1664	10/26/15
Silver (C)	< 0.05	0.05	200.7	10/23/15
Total Phenol (G)	0.140	0.025	420.4	10/23/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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OCT 29 2015
DIVISION OF
ENVIRONMENTAL COMPLIANCE

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

October 28, 2015
Lab No. 15E-2010
Invoice No. 206597
P.O. No. 2926272A

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 10/22/15, 3:30 P.M.
WASTEWATER COMPOSITE, SP011, 10/22/15, 9:00 A.M. – 3:30 P.M.

Units: mg/L except as noted

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.73	----	150.1	10/22/15
Temperature, °C (G)	24.4	----	170.1	10/22/15
Biological Oxygen Demand (C)	89	5	5210 B	10/28/15
Chemical Oxygen Demand (C)	190	10	5220 D	10/23/15
Total Suspended Solids (C)	92	5	160.2	10/23/15
Oil & Grease (G)	< 5	5	1664	10/26/15
Silver (C)	< 0.05	0.05	200.7	10/23/15
Total Phenol (G)	0.030	0.025	420.4	10/23/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/al

Steve Root, Manager
Environmental Testing

AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST.
NOT OFFICIAL WITHOUT THE RAISED SEAL OF ST. LOUIS TESTING LABORATORIES, INC.
SEE REVERSE FOR CONDITIONS.

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature Date: 10/29/2015

RECEIVED
OCT 29 2015
DIVISION OF
ENVIRONMENTAL COMPLIANCE

SR

METROPOLITAN SEWER DISTRICT

INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION 1024-[illegible]-00 3530

Company Name: Washington University Medical School

Permit No:

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2015** ☐ (JAN-MAR) ☐ (APR-JUN) ☒ (JUL-SEP) ☐ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
C-14	0.1300
Ge-68	0.0010
H-3	15.8279
I-125	0.1050
I-125V	0.0237
P-32	0.0994
S-35	0.0751
Zn-65	0.0316
TOTAL ACTIVITY DISCHARGED	**16.2936**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

[illegible] I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist

Telephone: (314) 362-4968

Signature: [illegible]

Date: 10/19/2015

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

RECEIVED
OCT 21 2015
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Scott Rehmer SR

From: Isringhausen, Mary <isringhausenm@wusm.wustl.edu>
Sent: Tuesday, October 06, 2015 8:56 AM
To: Scott Rehmer
Subject: Cooking Oil Spill

On September 23, 2015 Washington University School of Medicine discovered an oil spill in the dock area of our CSRB Building. In this dock area, there was a drain that connected to the sewer system. The spill consisted of about 10 gallons of cooking oil generated by Children's Hospital. Children's Hospital had a new vendor picking the cooking oil up. This vendor put the oil into the wrong container in the dock area creating the spill. The drain was discovered to be blocked by trash. WUSM cleaned the drain and most of the oil prior to any being released to the sewer. The cleanup consisted of using Quikrete concrete being used as an absorbent, therefore any washing of the area with water was not utilized.

WUSM is working with Children's Hospital to create a better way of communicating location of oil containers to vendors.

Please let me know if you need anything else.

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wusm.wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St. Louis
Environmental Health & Safety

1024-3530-00

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DEPARTMENT OF ENVIRONMENTAL COMPLIANCE
MEMORANDUM

MEMO TO: WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000]

FROM: Mike Kynion MK

DATE: 9-29-15

SUBJECT: **Sample Point 010 and 011 Additions**

On September 15, 2015, I met with Livi Isringhausen of Wash U Med School to identify and set sample point for two newly constructed buildings.

The SMRB building located at 4515 McKinley Ave is comprised of laboratory and teaching labs. According to Ms. Isringhausen, discharges from 4515 McKinley will be similar in nature to discharges at SP009. Based on a review of engineering plans submitted by Wash U Med and the structures identified during the site visit, SP011 was added to PIMS for the discharges at 4515 McKinley Ave.

The second building located at 4522 McKinley Avenue is the new EHS building. In addition to housing EHS this building also houses the new mail center for Wash U Med School. Based on a review of engineering plans and information obtained during the site visit, SP010 was added to PIMS for the discharges at 4522 McKinley. Please note the former EHS building located at 4500 Parkview is now closed and vacated. Wash U Med does not have future plans for this building and plans to demolish the building at some point. As a result SP006 has been deactivated in PIMS. All discharges at the new SP010 should be similar to discharges from the closed SP006.

The building at 4515 McKinley has a separate water account (MSD premise number 1052452801). The building at 4522 McKinley has a separate water account as well (MSD premise number 1055344000). The Utility Def Alpha field will need to be entered for 1052452801 and 1055344000.

As there is not a reliable history of water usage for the new buildings, usage and discharges were based on information provided by the site contact and estimates from similar operations at Washington University Medical School.

A special discharge file for Washington University – Scott McKinley Research Building was assigned the premise number 1052452800. This account is now associated with the newly constructed SMRB building at 4515 McKinley. Therefore, the special discharge file will be incorporated into the primary file for WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000].

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

June 11, 2015

Alex Chambers
ICON MECHANICAL
1616 Cleveland Blvd.
Granite City, IL 62040

Re: Wastewater User Charge Billing for Special Discharge

Dear Mr. Chambers:

This is to advise you of the wastewater user charges applicable to an on-site special discharge approved in our letter to you dated April 7, 2015. That charge was determined using the propylene glycol concentration in your application for special discharge. The discharge dates and quantities are from information submitted by you in an email dated June 11, 2015.

Our Finance Department will bill you by invoice for the charges described below. These charges are based on the rates in MSD Wastewater User Charge Ordinance 13758. For your convenience, using the volume and strength of the waste discharged, the ordinance rates have been converted to a per-gallon basis.

PARTY TO BILL: Addressee

BILLING IS FOR: On-Site Special Discharge

DISCHARGE PERIOD: April 8, 2015

SOURCE OF WASTE: 15% propylene glycol and water mixture generated from the flushing of the winterized heating water system at the Washington University – Scott McKinley Research Building located at 4515 McKinley Avenue, St. Louis, Missouri.

Discharge Period	Billing Item	Quantity	Units	Rate	Charge
4/8/15	Extra-Strength Surcharge	1.000	Gal	$0.19	$190.00
Total:	------	**1,000**	Gal	-----	**$190.00**

Please do not pay until you receive our invoice. If you have any questions, please contact me at (314) 436-8755.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Steven M. Grace

Steve Grace
Environmental Assistant Engineer

bv

ec: Chris Verplancke, Cynthia Chalk, Laura Joiner – Finance Dept.
Doug Mendoza, Brian Gibson

File: ~~SD, WASH U - SCOTT MCKINLEY RESEARCH BUILDING [1052-4528-00], 4515 McKinley Ave.~~
IU

Steve Grace

From: Alex Chambers <AChambers@iconmech.com>
Sent: Wednesday, June 10, 2015 6:25 PM
To: Steve Grace
Subject: RE: Wash U - Scott McKinley Research Bldg. (4515 McKinley Ave.) SP801 4-7-15.docx

Steve,

The volume discharged was 1000gal of 15% mixture.

Thanks

ALEX CHAMBERS

Icon Mechanical

1982 Innerbelt Business Center Dr.
St. Louis, MO 63114
Mobile: 618-610-1436
Office: 618-452-0035

From: Steve Grace [mailto:sgrace@stlmsd.com]
Sent: Wednesday, June 10, 2015 5:06 PM
To: Alex Chambers
Subject: FW: Wash U - Scott McKinley Research Bldg. (4515 McKinley Ave.) SP801 4-7-15.docx

Hello Alex,

As outlined below, the approval for this discharge expired in early May...with a volume report to be submitted on or before this week. If this charge has been completed, please submit the volume report at your earliest convenience. I would like to issue any invoice associated with this discharge and close out the approval this week.

Contact me with any questions.

Thanks,
Steve Grace

From: Rebecca Vitelli
Sent: Wednesday, April 08, 2015 3:09 PM
Cc: Steve Grace; Brian G. Gibson; Doug Mendoza
Subject: Wash U - Scott McKinley Research Bldg. (4515 McKinley Ave.) SP801 4-7-15.docx

April 7, 2015

Alex Chambers
ICON MECHANICAL
1616 Cleveland Blvd.
Granite City, IL 62040

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

April 7, 2015

Alex Chambers
ICON MECHANICAL
1616 Cleveland Blvd.
Granite City, IL 62040

Dear Mr. Chambers:

We have reviewed your application, submitted on behalf of Washington University, dated April 7, 2015 requesting approval to discharge 1,000 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater consists of a 15% propylene glycol and water mixture generated from the flushing of the winterized heating water system at the Washington University – Scott McKinley Research Building located at 4515 McKinley Avenue, St. Louis, Missouri.

Based on the information you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary or combined sewer on site. **This approval is valid for 30 days from the date of this letter.**

You must be certain the waste is discharged into a sanitary or combined sewer inlet only. This letter does not authorize any discharge to a separate storm sewer, or to any watercourse, as any such discharge would be in violation of state and federal laws. **Please notify me at the number below when the discharge is to commence, and please ensure the onsite personnel discharging the wastewater in question are provided with a copy of this letter.**

For billing purposes associated with this high strength wastewater, you must confirm the volume of this wastewater discharged to us, in writing, at the completion of the discharge. This report is due no later than 28 days after this approval expires. Please refer to this letter and include the date of the discharge when providing that figure. Under the provisions of Ordinance 13758, you will be billed by invoice at the billing rate in effect at the time of discharge. The current rate contained in MSD Ordinance 13758 is $310.07 per ton for COD over 600 mg/L. Using the assumed COD concentration based on the percent of propylene glycol contained in the wastewater in question, and the proposed discharge volume provided in your application, it is estimated that you will be discharging under one ton of COD over 600 mg/L. (Our quantitative estimate is 0.62 tons COD times $310.07.) Please do not pay this amount until you receive our invoice.

This discharge has been approved based upon the information and sample analysis you provided, and is subject to the conditions stated above. This approval may be revoked by the District at any time if any of the information is found to be incorrect, or if the conditions of this approval are violated. Also, if the discharge causes any operational or maintenance problem within the District's collection or treatment system, or results in violations of any conditions of the District's NPDES permit, Icon Mechanical and the property owner, Washington University, will be considered responsible for damages. If you have any questions, please call me at (314) 436-8755.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Steven M. Grace
Steve Grace
Environmental Assistant Engineer

bv

ec: Brian Gibson
Doug Mendoza

~~File: SD (new), WASH U - SCOTT MCKINLEY RESEARCH BUILDING [1052452800], 4515 McKinley Ave.~~

JU

C1A

SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Wash U-Scott McKinley Bldg. Research Evaluated by: SMG

Premise Address: 4515 McKinley Ave. Date: 4/7/15

Send approval letter to applicant

Application Dated: 4/7/15 Received: 4/7/15 All Requested Info. Received: 4/7/15

SOURCE FILING/DESCRIPTION

1 - Source in PIMS? Y / (N)
2 - If No, on IU Cross-Ref list? * Y / (N)
3 - If No, MSD Account # from E-CIS? Y / (N)
4 - If none, on "Source" list (pre-IMS)? ** Y / (N)
5 - If No, assigned SOUR# from PIMS.

SOURCE TYPE (circle): IU / Dead IU / (SD)

INDUSTRY ID: 1052452800

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 801 Description: 15% propylene glycol/water mixture from flushing of heating water system

Normal WW flow from premise? (N/A) _____ ccf/month, _____ GPD, _____ GPH.

REGULATORY STATUS

Is waste a Hazardous Waste? (N) / Y _____

Categorical standards apply? (N) / Y _____

Contain PCB/ asbestos/ radioactive/ dioxin/ used oil? (N) / Y _____

Regulatory Agency Oversight? (N) / Y _____

DISCHARGE CONSIDERATIONS At MSD's connection:

Ordinance Limits (12559, p. 32) exceeded? (N) / Y _____

Ordinance other limits exceeded (dye, flash pt <140° F, temp >140° F, obstruction, nuisance foaming/odor, corrosion causing): (N) / Y _____

Water Quality Standard exceeded? (N) / Y _____

Fumes in sewer exceed PEL/TLV limits? (N) / Y _____

Vapors in sewer exceed 10% of LEL? (N) / Y _____

RECOMMENDATION: (APPROVE) / DENY (cc WWTP Mgr for timed discharge)

APPROVAL CONDITIONS:

Timed Discharge (COD/BOD/WQ/foam): (N) / Y Limit = _____ gal/hour

Require Treatment before Discharge? (N) / Y _____

Laboratory analysis fee due? (N) / Y $_____

SMR required? (N) / Y Frequency/analysis: _____

SMR log: (N/A) / Remediation.xls / Nonremediation.xls

Volume Billing applies (water unmetered or credited)? (N) / Y

Bill High Strength? N / (Y) Yes, If use >60,000 gal/month water ✓ and, > norm WW strgth

Surcharge calculation attached: N/A / N / (Y)

Expiration log updated: (N/A) / N / Y

O:\CostRecovery\Special Discharge\C1a.Checklist.doc

Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

APPLICATION FOR SPECIAL DISCHARGE APPROVAL

I. WASTEWATER SOURCE IDENTIFICATION:

Site Name: WASH U SCOTT MCKINLEY RESEARCH BUILDING
Premise Address: 4515 MCKINLEY AVE
City: ST. LOUIS State: MO Zip: 63110
Owner: WASHINGTON UNIVERSITY
Contact Person: GREG JANSEN
Title: PROJECT MANAGER
Phone: 314-278-9850 Fax:

II. APPLICANT (mailing information):

Applicant Name: ALEX CHAMBERS
Title: PROJECT MANAGER
Company Name: ICON MECHANICAL
Mailing Address: 1616 CLEVELAND BLVD
City: GRANITE CITY State: IL Zip: 62040
Phone: 618-610-1436 Fax:

III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):

1. Wastewater description/location: PROPYLENE GLYCOL AND WATER MIXUTRE
2. Process/activity generating wastewater: FLUSHING OF GLYCOL/WATER MIXTURE USED IN WINTERIZATION OF HEATING WATER SYSTEM
3. Physical and chemical composition: List all constituents, and known or potentially present regulated contaminants below.
   ☐ See separate listing enclosed, and/or ☐ See analytical results enclosed, and/or ☒ Material Safety Data Sheet enclosed.

DESCRIPTION	RANGE	UNIT
Propylene glycol	15	%
Water	85	%
per info. on next page - SMG		

DESCRIPTION *(continued)*	RANGE	UNIT

4. Is this wastewater from a process subject to EPA's categorical standards in 40 CFR Subchapter N? ☐ Yes ☒ No
   a. If yes, the applicable standards are in: 40 CFR Part _____, Subpart _____ ☐ Existing source ☐ New source
5. Does this wastewater contain polychlorinated biphenyls, asbestos or radioactive material? ☐ Yes ☒ No
   a. If yes, describe: _____
6. Representative sample: ☐ Laboratory results attached, and/or ☐ Sample provided (1/2 gallon minimum, clear container)
   a. Sample collection point/location: _____ Collection method: _____
   b. Sampler's name/Co.: _____ Sample date/time: _____
   c. Attach chain of custody as available
7. Discharge will occur over the following time period: ☒ < 30 days ☐ ≥ Two years ☐ Other: _____
   a. Expected total volume of wastewater to be discharged over the time period above: ≈1000 Gallons
   b. Proposed discharge volume: _____ Gallons, at a frequency of: ☐ One time ☐ Daily ☐ Weekly ☐ Monthly ☐ Once/three months ☐ Once/six months ☒ Other: APPROX. 250gal PER DAY FOR 4 DAYS
8. Pretreatment of wastewater prior to discharge: ☒ None ☐ Yes, describe: _____
   a. If yes, attach site plan, pretreatment system schematic, and design specifications.
9. Wastewater from a remediation project under: ☐ Superfund/CERCLA ☐ RCRA ☐ Voluntary program ☐ UST ☒ Not applicable
   a. If from a remediation project, briefly describe the past and present utilization of the property: _____

III.B. MATERIAL FROM UNDERGROUND STORAGE TANK SOURCE

☒ **Not applicable (go to Section IV)**

Please answer the following questions if you are requesting to discharge wastewater associated with an underground storage tank system.

1. a. Wastewater from: ☐ Inside UST(s) ☐ UST system pit ☐ Excavation outside UST system pit ☐ Monitoring well ☐ Groundwater remediation system

   b. UST project involves wastewater from: ☐ UST(s) closed in place ☐ UST(s) removed ☐ Remediation ☐ Upgrade ☐ Maintenance activities ☐ Well monitoring ☐ Other, explain: _____

   c. If wastewater is from a closure project, how long has UST(s) been out of service: _____ years

2. a. State assigned UST site identification number: _____ ☐ Not applicable

   b. Number of USTs affected: _____ ☐ Unknown

   c. For the UST(s) involved, their state identification number(s): _____ ☐ Not applicable

   d. Service Station Identification Number, as applicable: _____

3. Tank contents/former contents: ☐ Gasoline ☐ #2 diesel ☐ Used oil ☐ Unknown ☐ Other: _____

IV. DISCHARGE LOCATION

1. ☒ On-site. Describe proposed point of entry to sewer and the discharge rate (must be a sanitary or combined sewer): _____

   SANITARY DRAIN IN MECHAINCAL ROOM AT 250gal/day FOR 5 DAYS. Note: Range of discharge must not surcharge sewer line.

2. ☐ Haul to MSD Bissell Point Hauled Waste Receiving Station at 10 E. Grand, St. Louis, MO.

   a. Transporters Name: _____ and MSD Hauler ID Number: _____

   b. Hazardous Waste Certification:

   For wastewater which is hauled to MSD's Bissell Point Hauled Waste Receiving Station, I hereby certify that to the best of my knowledge and belief, the above hauled waste is not classified as a RCRA "hazardous waste" as defined by the MDNR in 10 CSR 25 or USEPA in 40 CFR Part 261.

   Applicant Name (print): _____

   Signature: _____ **Date:** _____

ADDITIONAL INFORMATION:

THE AMOUNT OF PROPYLENE GLYCOL/WATER MIXTURE TO BE DISCHARGED IS ≈1000 GALLONS. HOWEVER, THE TOTAL AMOUNT OF PROPYLENE GLYCOL TO BE DISCHARGED IS ≈150 GALLONS, AS THE CONCENTRATION OF PROPYLENE GLYCOL IN THE MIXTURE IS ONLY 15%. THE 15% WAS READ FROM A REFRACTOMETER.

V. APPLICANT SIGNATURE AND CERTIFICATION

This application must be signed by the applicant: either the source contact, or a contractor or agent directly responsible for site activities.

I hereby certify that I am directly responsible for activities at the site regarding the wastewater to be discharged, and to the best of my knowledge and belief, based on appropriate inquiry, the information in this application is true, complete, and accurate. The samples or analyses submitted are representative of the materials to be discharged. If granted approval to discharge, I agree to abide by the MSD Ordinances, and all applicable federal, state and local regulations. I agree to pay the costs of any pre-approval analyses performed by MSD and to pay any applicable disposal charges for the volume and strength of the wastes discharged.

Applicant Name (print): ALEX CHAMBERS

Signature: Alexy R Chambers **Date:** 4/7/15

FOR MSD USE ONLY:

File Name: Washington University- ID No. 1052452800 Sample Point No 801

Rev. 1/2/08 Scott McKinley Research Building

On-Site Special Discharge High Strength Flow Rate and Surcharge Calculator

1 GENERAL INFORMATION:

Date: 04/07/15
Calculated by: Steve Grace
Source name: WASHINGTON UNIVERSITY - SCOTT MCKINLEY RESEARCH BUILDING [1052452800]
Waste material: flushed glycol/water mixture from winterization of heating water system
Discharge volume: 1,000 gallons

2 STRENGTH INFORMATION:

Sample BOD =	0	mg/l =	0	lbs BOD to be discharged
Sample COD =	150,000	mg/l =	1251	lbs COD to be discharged
Sample TSS =	50	mg/l =	for surcharge calculation only	

3 PLANT DATA: 2007

Treatment area: Bissell

	Flow (MGD)	BOD (mg/L)	COD (mg/L)	BOD (lb/hr)	COD (lb/hr)	Max Loading = 10% BOD (lb/hr)	COD (lb/hr)
Bissell	**119**	**174**	**348**	**7,171**	**14,341**	**717**	**1,434**
Coldwater	23	226	452	1,768	3,535	177	354
Fenton	5	307	614	482	964	48	96
Grand Glaize	16	152	399	830	2,183	83	218
Lemay	122	81	228	3,438	9,610	344	961
Lower Meramec	10	124	364	452	1,326	45	133
Missouri River	28	281	561	2,732	5,465	273	546

4 MINIMUM REQUIRED FLOW RATE:

	BOD (hours)	BOD (gpm)	COD (hours)	COD (gpm)
Bissell	**0.00**	**0**	**0.87**	**19**
Coldwater	0.00	0	3.54	5
Fenton	0.00	0	12.97	1
Grand Glaize	0.00	0	5.73	3
Lemay	0.00	0	1.30	13
Lower Meramec	0.00	0	9.43	2
Missouri River	0.00	0	2.29	7

5 SURCHARGE AND VOLUME BILLING

Is volume subject to billing? no (yes/no)
Ratio of BOD/COD = 0.00

(Sample BOD) - 300 = 0 mg/l subject to surcharge
(sample COD) - 600 = 149400 mg/l subject to surcharge
(sample TSS) - 300 = 0 mg/l subject to surcharge

If BOD/COD ratio <= 0.35, the following calculations use the COD value. Otherwise they use the BOD value

Current rates under Ordinance: 13758

Volume =	$	2.82	/CcF
BOD =	$	620.14	/ton
COD =	$	310.07	/ton
TSS =	$	244.03	/ton

Flow charge = $ - based on volume = 1.3 CcF
BOD surcharge = $ -
COD surcharge = $ 193.23
TSS surcharge = $ -
Total discharge charge = $ 193.23
Customer charge = $ 193.23 DEC charges special discharge customers for total charges > $20.00
Approximate charge/gallon = $ 0.193

Comments

require volume report for billing purposes. Smg

PIMS - Pretreatment Information Management System [PIMS St. Louis (PIMS)]

File Edit Records Worklists Reports/Letters Tools Window Help

General Info | Sample Points | Metering | Monitoring | Permits | Results | Compliance | Enforcement | Water Use | Spec Dischrg

Facility ID: 1024353000 Name: WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000] SIU: ☑ Class: Significant Industrial User

General Info

General | **Contacts** | Hours | Waste | Ext Ref

Address: Premise Address - 660 S. Euclid Ave., St. Louis, MO 63110

Contacts

Contact Type: Field Contact - Primary
Job Title: Environmental Compliance Man.
Title: Ms. First: Livi Last: Isringhausen
Suffix:
Email: isringhausenm@wusm.wustl.edu
Authorized Signatory: ☑

Contact Type: Field Contact 1st Alt
Job Title: Environmental Compliance Offic
Title: Ms. First: Linda Last: Vishino
Suffix:
Email:
Authorized Signatory: ☑

Results

Start Date: 01/01/2015 End Date: Apply

Events | Inspections | Sampling | Limit Comp | Violations | SMDE | Gen Rpts | **Notifications** | Surcharge | Surcharge Export

Notification Type	Date
Problem Discharge - Immediate Notice	09/23/2015

Text

Call from Livi Isringhausen. Inadvertently spilled ~ 10 gallons of used cooking oil down drain.
This drain was blocked previously, so the oil will most likely not make into the collection system.
They're planning on cleaning the oil out today, removing what caused the blockage, then flushing with water.
She said they will provide MSD with written follow-up of cause and correction within five days. SR

SR

Ready Sep 23, 2015 12:55:00 PM

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

September 22, 2015

Eric Page
ENVIRONMENTAL OPERATIONS, INC.
1530 S. 2nd St.
St. Louis, MO 63104

Dear Mr. Page:

This is to advise you of the wastewater user charges applicable to an on-site special discharge originally approved in our letter to you dated July 14, 2015. The discharge dates and quantities are from information submitted by you in a letter dated September 16, 2015.

Our Finance Department will bill you by invoice for the charges described below. These charges are based on the rates in MSD Wastewater User Charge Ordinance 13758.

PARTY TO BILL: Addressee

BILLING IS FOR: On-Site Special Discharge

DISCHARGE PERIOD: July 15 – August 3, 2015

SOURCE OF WASTE: Groundwater/rainwater from an excavation pit associated with underground storage tank (UST) removal activities at the Storz Building in the Washington University School of Medicine complex located at 4570 Childrens Place, St. Louis, Missouri.

Discharge Period	Billing Item	Quantity	Units	Rate	Charge
7/15 – 8/3/15	Volume	38	CcF	$3.21	$121.98
Total:	------	**38**	**CcF**	-----	**$121.98**

Please do not pay until you receive our invoice. If you have any questions, please contact me at (314) 436-8755.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Steven M. Grace

Steve Grace
Environmental Assistant Engineer

bv

ec: Cynthia Chalk , Laura Joiner – Finance Dept.
Doug Mendoza
Brian Gibson

File: IU, WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000], 660 S. Euclid Avenue, St. Louis

Environmental Operations, Inc.
CLEARING THE WAY

September 16, 2015

Project #5711

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

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SEP 18 2015
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Re: Wastewater Volume Report
Washington University School of Medicine
Storz Building
4570 Children's Place
St. Louis, Missouri

Mr. Grace:

The following presents the wastewater volume report for direct discharge at the above referenced site. On July 10, 2015 EOI submitted an application for special discharge to the Metropolitan St. Louis Sewer District (MSD). This application was for tank pit water and was approved by MSD letter dated July 14, 2015.

Between July 15, 2015 and August 3, 2015, tank pit water was pumped to an onsite sanitary sewer inlet designated by MSD. A total of 28,500 gallons of tank pit water were discharged. The tank pit volume was calculated by multiplying the estimated pumping rate by the measured duration of the pumping period.

If you have any questions or comments regarding the discharge at the subject site, please call me at (314) 241-0900.

Sincerely,

Eric J. Page, RG
Vice President

sR
9-2-15

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: **IDENTIFYING INFORMATION** 1024-3530-00

Company Name: Washington University School of Medicine
Permit No: 51122162-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2015 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: **ANALYTICAL RESULTS OF SELF MONITORING**

MSD Sample Point Reference Number		001		003		005		
Dates on Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
Times at Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow						Units
Flow	***	E	28,250	E	55,500	E	450,000	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	G	see attatched	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched	mg/L
		001		003		005		
		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	0	see attatched	mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L

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Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Toluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched		see attatched		see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched		see attatched		see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844		see attatched		see attatched		see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L

You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 5112262-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2015 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		006		007		008		009		
Dates on Which Samples Were Collected		G:	see attatched	G:	see attatched	G:	see attatched	G:	see attatched	
		C:	see attatched	C:	see attatched	C:	see attatched	C:	see attatched	
Times at Which Samples Were Collected		G:	see attatched	G:	see attatched	G:	see attatched	G:	see attatched	
		C:	see attatched	C:	see attatched	C:	see attatched	C:	see attatched	
PARAMETER		Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	LIMIT	E	24,000	E	8,900	E	131,850	E	131,850	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
		006		007		008		009		
		G:	see attatched	G:	see attatched	G:	see attatched	G:	see attatched	
		G:	see attatched	G:	see attatched	G:	see attatched	G:	see attatched	
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L

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Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Toluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

Attention: Livi Isringhausen

August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 7/29/15, 9:20 A.M.
WASTEWATER COMPOSITE, SP001, 7/29/15, 9:20 A.M – 3:20 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.91	----	150.1	7/29/15
Temperature, °C (G)	24.4	----	170.1	7/29/15
Biological Oxygen Demand (C)	26	5	5210 B	8/5/15
Chemical Oxygen Demand (C)	57	10	5220 D	7/31/15
Total Suspended Solids (C)	13	5	160.2	8/3/15
Oil & Grease (G)	ND	5	1664	7/31/15
Total Cyanide (G)	ND	0.01	335.4	8/3/15
Cadmium (C)	ND	0.01	200.8	8/3/15
Chromium (C)	0.010	0.01	200.8	8/3/15
Copper (C)	0.012	0.01	200.8	8/3/15
Lead (C)	0.013	0.01	200.8	8/3/15
Nickel (C)	ND	0.01	200.8	8/3/15
Selenium (C)	ND	0.01	200.8	8/3/15
Silver (C)	ND	0.01	200.8	8/3/15
Thallium (C)	ND	0.01	200.8	8/3/15
Zinc (C)	0.031	0.01	200.8	8/3/15
Mercury (C)	ND	0.005	200.8	8/3/15

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 7/29/15, 9:20 A.M. ✓

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP001	MQL	ANALYTE	SP001	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.0032 (J)	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	0.019	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	0.0028 (J)	0.005	Trichloroethene	ND	0.005
Bromoform	0.194	0.05			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(J): Analyte Detected Below the MQL

Test Method: EPA 600/624
Date of Analysis: 8/3/15
Dilution Factor: 1

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August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 7/29/15, 9:20 A.M. ✓

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP001	MQL	ANALYTE	SP001	MQL
1,2,4-Trichlorobenzene	ND	0.095	Benzidine	ND	0.379
1,2- Diphenylhydrazine	ND	0.095	Benzo(a)pyrene	ND	0.095
2,4,6-Trichlorophenol	ND	0.095	Bis(2-chloroethoxy)methane	ND	0.095
2,4-Dichlorophenol	ND	0.095	Bis(2-chloroethyl)ether	ND	0.095
2,4-Dimethylphenol	ND	0.095	Bis(2-chloroisopropyl)ether	ND	0.095
2,4-Dinitrophenol	ND	0.189	Diethyl phthalate	ND	0.095
2,4-Dinitrotoluene	ND	0.095	Hexachlorobenzene	ND	0.095
2,6-Dinitrotoluene	ND	0.095	Hexachlorocyclopentadiene	ND	0.189
2-Chlorophenol	ND	0.095	Hexachloroethane	ND	0.095
2-Nitrophenol	ND	0.189	Isophorone	ND	0.095
3,3-Dichlorobenzidine	ND	0.095	Naphthalene	ND	0.095
4,6-Dinitro-2-methylphenol	ND	0.189	Nitrobenzene	ND	0.095
4-Chloro-3-methylphenol	ND	0.189	N-Nitrosodimethylamine	ND	0.189
4-Nitrophenol	ND	0.189	Pentachlorophenol	ND	0.189
Acenaphthene	ND	0.095	Phenanthrene	ND	0.095
Acenaphthylene	ND	0.095	Phenol	ND	0.047
Anthracene	ND	0.095	Pyrene	ND	0.095
Anzobenzene	ND	0.095			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 8/3/15
Dilution Factor: 10

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Attention: Livi Isringhausen

August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 7/29/15, 9:20 A.M.

Units: µg/L (ppb)

PESTICIDES

ANALYTE	SP001	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 8/4/15
Dilution Factor: 1

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Attention: Livi Isringhausen

August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 7/30/15, 9:45 A.M.
WASTEWATER COMPOSITE, SP003, 7/30/15, 9:45 A.M. – 3:45 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.66	----	150.1	7/30/15
Temperature, °C (G)	28.5	----	170.1	7/30/15
Biological Oxygen Demand (C)	45	5	5210 B	8/5/15
Chemical Oxygen Demand (C)	103	10	5220 D	7/31/15
Total Suspended Solids (C)	30	5	160.2	8/3/15
Oil & Grease (G)	ND	5	1664	7/31/15
Total Cyanide (G)	0.013	0.01	335.4	8/4/15
Cadmium (C)	ND	0.01	200.8	8/3/15
Chromium (C)	ND	0.01	200.8	8/3/15
Copper (C)	0.014	0.01	200.8	8/3/15
Lead (C)	0.013	0.01	200.8	8/3/15
Nickel (C)	ND	0.01	200.8	8/3/15
Selenium (C)	ND	0.01	200.8	8/3/15
Silver (C)	ND	0.01	200.8	8/3/15
Thallium (C)	ND	0.01	200.8	8/3/15
Zinc (C)	0.036	0.01	200.8	8/3/15
Mercury (C)	ND	0.005	200.8	8/3/15

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite

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Invoice No. 203151
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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 7/30/15, 9:45 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.0097	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	0.236	0.050
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	0.0016 (J)	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(J): Analyte Detected Below the MQL

Test Method: EPA 600/624
Date of Analysis: 8/3/15
Dilution Factor: 1

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Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 7/30/15, 9:45 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,2,4-Trichlorobenzene	ND	0.096	Benzidine	ND	0.383
1,2- Diphenylhydrazine	ND	0.096	Benzo(a)pyrene	ND	0.096
2,4,6-Trichlorophenol	ND	0.096	Bis(2-chloroethoxy)methane	ND	0.096
2,4-Dichlorophenol	ND	0.096	Bis(2-chloroethyl)ether	ND	0.096
2,4-Dimethylphenol	ND	0.096	Bis(2-chloroisopropyl)ether	ND	0.096
2,4-Dinitrophenol	ND	0.191	Diethyl phthalate	ND	0.096
2,4-Dinitrotoluene	ND	0.096	Hexachlorobenzene	ND	0.096
2,6-Dinitrotoluene	ND	0.096	Hexachlorocyclopentadiene	ND	0.191
2-Chlorophenol	ND	0.096	Hexachloroethane	ND	0.096
2-Nitrophenol	ND	0.191	Isophorone	ND	0.096
3,3-Dichlorobenzidine	ND	0.096	Naphthalene	ND	0.096
4,6-Dinitro-2-methylphenol	ND	0.191	Nitrobenzene	ND	0.096
4-Chloro-3-methylphenol	ND	0.191	N-Nitrosodimethylamine	ND	0.191
4-Nitrophenol	ND	0.191	Pentachlorophenol	ND	0.191
Acenaphthene	ND	0.096	Phenanthrene	ND	0.096
Acenaphthylene	ND	0.096	Phenol	ND	0.048
Anthracene	ND	0.096	Pyrene	ND	0.096
Anzobenzene	ND	0.096			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 8/3/15
Dilution Factor: 1

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 7/30/15, 9:45 A.M.

PESTICIDES

Units: µg/L (ppb)

ANALYTE	SP003	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis:8/4/15
Dilution Factor: 1

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August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 7/29/15, 9:05 A.M.
WASTEWATER COMPOSITE, SP005, 7/29/15, 9:05 A.M. – 3:05 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.42	----	150.1	7/29/15
Temperature, °C (G)	27.5	----	170.1	7/29/15
Biological Oxygen Demand (C)	56	5	5210 B	8/5/15
Chemical Oxygen Demand (C)	180	10	5220 D	7/31/15
Total Suspended Solids (C)	65	5	160.2	8/3/15
Oil & Grease (G)	ND	5	1664	8/6/15
Total Cyanide (G)	0.024	0.01	335.4	8/4/15
Cadmium (C)	ND	0.01	200.8	8/3/15
Chromium (C)	0.026	0.01	200.8	8/3/15
Copper (C)	0.027	0.01	200.8	8/3/15
Lead (C)	ND	0.01	200.8	8/3/15
Nickel (C)	ND	0.01	200.8	8/3/15
Selenium (C)	ND	0.01	200.8	8/3/15
Silver (C)	ND	0.01	200.8	8/3/15
Thallium (C)	ND	0.01	200.8	8/3/15
Zinc (C)	0.060	0.01	200.8	8/3/15
Mercury (C)	ND	0.005	200.8	8/3/15

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 7/29/15, 9:05 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.0061	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.050
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	0.049 (J)	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(J): Analyte Detected Below the MQL

Test Method: EPA 600/624
Date of Analysis: 8/3/15
Dilution Factor: 1

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 7/29/15, 9:05 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,2,4-Trichlorobenzene	ND	0.10	Benzidine	ND	0.40
1,2- Diphenylhydrazine	ND	0.10	Benzo(a)pyrene	ND	0.10
2,4,6-Trichlorophenol	ND	0.10	Bis(2-chloroethoxy)methane	ND	0.10
2,4-Dichlorophenol	ND	0.10	Bis(2-chloroethyl)ether	ND	0.10
2,4-Dimethylphenol	ND	0.10	Bis(2-chloroisopropyl)ether	ND	0.10
2,4-Dinitrophenol	ND	0.20	Diethyl phthalate	ND	0.10
2,4-Dinitrotoluene	ND	0.10	Hexachlorobenzene	ND	0.10
2,6-Dinitrotoluene	ND	0.10	Hexachlorocyclopentadiene	ND	0.20
2-Chlorophenol	ND	0.10	Hexachloroethane	ND	0.10
2-Nitrophenol	ND	0.20	Isophorone	ND	0.10
3,3-Dichlorobenzidine	ND	0.10	Naphthalene	ND	0.10
4,6-Dinitro-2-methylphenol	ND	0.20	Nitrobenzene	ND	0.10
4-Chloro-3-methylphenol	ND	0.20	N-Nitrosodimethylamine	ND	0.20
4-Nitrophenol	ND	0.20	Pentachlorophenol	ND	0.20
Acenaphthene	ND	0.10	Phenanthrene	ND	0.10
Acenaphthylene	ND	0.10	Phenol	ND	0.05
Anthracene	ND	0.10	Pyrene	ND	0.10
Anzobenzene	ND	0.10			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 8/3/15
Dilution Factor: 10

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St. Louis, MO 63110

Attention: Livi Isringhausen

August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 7/29/15, 9:05 A.M.

PESTICIDES

Units: µg/L (ppb)

ANALYTE	SP005	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis:8/4/15
Dilution Factor: 1

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August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP006, 7/29/15, 8:50 A.M.
WASTEWATER COMPOSITE, SP006, 7/29/15, 8:50 A.M. – 2:50 P.M.

Units: mg/L except as noted

ANALYTE	SP006	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.41	----	150.1	7/29/15
Temperature, °C (G)	25.2	----	170.1	7/29/15
Biological Oxygen Demand (C)	9	5	5210 B	8/5/15
Chemical Oxygen Demand (C)	33	10	5220 D	7/31/15
Total Suspended Solids (C)	9	5	160.2	8/3/15
Oil & Grease (G)	ND	5	1664	8/6/15
Total Cyanide (G)	ND	0.01	335.4	8/4/15
Cadmium (C)	ND	0.01	200.8	8/3/15
Chromium (C)	ND	0.01	200.8	8/3/15
Copper (C)	0.010	0.01	200.8	8/3/15
Lead (C)	ND	0.01	200.8	8/3/15
Nickel (C)	ND	0.01	200.8	8/3/15
Selenium (C)	ND	0.01	200.8	8/3/15
Silver (C)	ND	0.01	200.8	8/3/15
Thallium (C)	ND	0.01	200.8	8/3/15
Zinc (C)	0.016	0.01	200.8	8/3/15
Mercury (C)	ND	0.005	200.8	8/3/15

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP006, 7/29/15, 8:50 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP006	MQL	ANALYTE	SP006	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.0075	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	0.0012 (J)	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(J): Analyte Detected Below the MQL

Test Method: EPA 600/624
Date of Analysis: 8/3/15
Dilution Factor: 1

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Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP006, 7/29/15, 8:50 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP006	MQL	ANALYTE	SP006	MQL
1,2,4-Trichlorobenzene	ND	0.009	Benzidine	ND	0.036
1,2- Diphenylhydrazine	ND	0.009	Benzo(a)pyrene	ND	0.009
2,4,6-Trichlorophenol	ND	0.009	Bis(2-chloroethoxy)methane	ND	0.009
2,4-Dichlorophenol	ND	0.009	Bis(2-chloroethyl)ether	ND	0.009
2,4-Dimethylphenol	ND	0.009	Bis(2-chloroisopropyl)ether	ND	0.009
2,4-Dinitrophenol	ND	0.018	Diethyl phthalate	ND	0.009
2,4-Dinitrotoluene	ND	0.009	Hexachlorobenzene	ND	0.009
2,6-Dinitrotoluene	ND	0.009	Hexachlorocyclopentadiene	ND	0.018
2-Chlorophenol	ND	0.009	Hexachloroethane	ND	0.009
2-Nitrophenol	ND	0.018	Isophorone	ND	0.009
3,3-Dichlorobenzidine	ND	0.009	Naphthalene	ND	0.009
4,6-Dinitro-2-methylphenol	ND	0.018	Nitrobenzene	ND	0.009
4-Chloro-3-methylphenol	ND	0.018	N-Nitrosodimethylamine	ND	0.018
4-Nitrophenol	ND	0.018	Pentachlorophenol	ND	0.018
Acenaphthene	ND	0.009	Phenanthrene	ND	0.009
Acenaphthylene	ND	0.009	Phenol	ND	0.005
Anthracene	ND	0.009	Pyrene	ND	0.009
Anzobenzene	ND	0.009			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 8/3/15
Dilution Factor: 1

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Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP006, 7/29/15, 8:50 A.M.

PESTICIDES

Units: µg/L (ppb)

ANALYTE	SP006	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 8/4/15
Dilution Factor: 1

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Lab No. 15E-1447
Invoice No. 203151
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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 7/30/15, 8:50 A.M.
WASTEWATER COMPOSITE, SP007, 7/30/15, 8:50 A.M. – 3:45 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.80	----	150.1	7/30/15
Temperature, °C (G)	30.1	----	170.1	7/30/15
Biological Oxygen Demand (C)	46	5	5210 B	8/5/15
Chemical Oxygen Demand (C)	78	10	5220 D	7/31/15
Total Suspended Solids (C)	52	5	160.2	8/3/15
Oil & Grease (G)	ND	5	1664	8/6/15
Total Cyanide (G)	0.044	0.01	335.4	8/4/15
Cadmium (C)	ND	0.01	200.8	8/3/15
Chromium (C)	0.010	0.01	200.8	8/3/15
Copper (C)	0.013	0.01	200.8	8/3/15
Lead (C)	ND	0.01	200.8	8/3/15
Nickel (C)	ND	0.01	200.8	8/3/15
Selenium (C)	ND	0.01	200.8	8/3/15
Silver (C)	ND	0.01	200.8	8/3/15
Thallium (C)	ND	0.01	200.8	8/3/15
Zinc (C)	0.076	0.01	200.8	8/3/15
Mercury (C)	ND	0.005	200.8	8/3/15

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 7/30/15, 8:50 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.011	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	0.042 (J)	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	0.0015 (J)	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(J): Analyte Detected Below the MQL

Test Method: EPA 600/624
Date of Analysis: 8/3/15
Dilution Factor: 1

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 7/30/15, 8:50 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,2,4-Trichlorobenzene	ND	0.10	Benzidine	ND	0.40
1,2- Diphenylhydrazine	ND	0.10	Benzo(a)pyrene	ND	0.10
2,4,6-Trichlorophenol	ND	0.10	Bis(2-chloroethoxy)methane	ND	0.10
2,4-Dichlorophenol	ND	0.10	Bis(2-chloroethyl)ether	ND	0.10
2,4-Dimethylphenol	ND	0.10	Bis(2-chloroisopropyl)ether	ND	0.10
2,4-Dinitrophenol	ND	0.20	Diethyl phthalate	ND	0.10
2,4-Dinitrotoluene	ND	0.10	Hexachlorobenzene	ND	0.10
2,6-Dinitrotoluene	ND	0.10	Hexachlorocyclopentadiene	ND	0.20
2-Chlorophenol	ND	0.10	Hexachloroethane	ND	0.10
2-Nitrophenol	ND	0.20	Isophorone	ND	0.10
3,3-Dichlorobenzidine	ND	0.10	Naphthalene	ND	0.10
4,6-Dinitro-2-methylphenol	ND	0.10	Nitrobenzene	ND	0.10
4-Chloro-3-methylphenol	ND	0.10	N-Nitrosodimethylamine	ND	0.20
4-Nitrophenol	ND	0.10	Pentachlorophenol	ND	0.20
Acenaphthene	ND	0.10	Phenanthrene	ND	0.10
Acenaphthylene	ND	0.10	Phenol	ND	0.05
Anthracene	ND	0.10	Pyrene	ND	0.10
Anzobenzene	ND	0.10			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 8/3/15
Dilution Factor: 10

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 7/30/15, 8:50 A.M.

PESTICIDES

Units: µg/L (ppb)

ANALYTE	SP007	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 8/4/15
Dilution Factor: 1

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August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 7/30/15, 9:15 A.M.
WASTEWATER COMPOSITE, SP008, 7/30/15, 9:15 A.M. – 3:15 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.77	----	150.1	7/30/15
Temperature, °C (G)	29.8	----	170.1	7/30/15
Biological Oxygen Demand (C)	252	5	5210 B	8/5/15
Chemical Oxygen Demand (C)	582	10	5220 D	7/31/15
Total Suspended Solids (C)	462	5	160.2	8/3/15
Oil & Grease (G)	13	5	1664	8/6/15
Total Cyanide (G)	ND	0.01	335.4	8/4/15
Cadmium (C)	ND	0.01	200.8	8/3/15
Chromium (C)	0.012	0.01	200.8	8/3/15
Copper (C)	0.082	0.01	200.8	8/3/15
Lead (C)	0.011	0.01	200.8	8/3/15
Nickel (C)	ND	0.01	200.8	8/3/15
Selenium (C)	ND	0.01	200.8	8/3/15
Silver (C)	0.017	0.01	200.8	8/3/15
Thallium (C)	ND	0.01	200.8	8/3/15
Zinc (C)	0.27	0.01	200.8	8/3/15
Mercury (C)	ND	0.005	200.8	8/3/15

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 7/30/15, 9:15 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.0053	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	0.0011 (J)	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(J): Analyte Detected Below the MQL

Test Method: EPA 600/624
Date of Analysis: 8/3/15
Dilution Factor: 1

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 7/30/15, 9:15 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,2,4-Trichlorobenzene	ND	0.10	Benzidine	ND	0.40
1,2- Diphenylhydrazine	ND	0.10	Benzo(a)pyrene	ND	0.10
2,4,6-Trichlorophenol	ND	0.10	Bis(2-chloroethoxy)methane	ND	0.10
2,4-Dichlorophenol	ND	0.10	Bis(2-chloroethyl)ether	ND	0.10
2,4-Dimethylphenol	ND	0.10	Bis(2-chloroisopropyl)ether	ND	0.10
2,4-Dinitrophenol	ND	0.20	Diethyl phthalate	ND	0.10
2,4-Dinitrotoluene	ND	0.10	Hexachlorobenzene	ND	0.10
2,6-Dinitrotoluene	ND	0.10	Hexachlorocyclopentadiene	ND	0.20
2-Chlorophenol	ND	0.10	Hexachloroethane	ND	0.10
2-Nitrophenol	ND	0.20	Isophorone	ND	0.10
3,3-Dichlorobenzidine	ND	0.10	Naphthalene	ND	0.10
4,6-Dinitro-2-methylphenol	ND	0.20	Nitrobenzene	ND	0.10
4-Chloro-3-methylphenol	ND	0.20	N-Nitrosodimethylamine	ND	0.20
4-Nitrophenol	ND	0.20	Pentachlorophenol	ND	0.20
Acenaphthene	ND	0.10	Phenanthrene	ND	0.10
Acenaphthylene	ND	0.10	Phenol	ND	0.05
Anthracene	ND	0.10	Pyrene	ND	0.10
Anzobenzene	ND	0.10			

A
C
D
G
H

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 8/4/15
Dilution Factor: 10

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

Attention: Livi Isringhausen

August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 7/30/15, 9:15 A.M.

PESTICIDES

Units: µg/L (ppb)

ANALYTE	SP008	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 8/4/15
Dilution Factor: 1

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Attention: Livi Isringhausen

August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 7/30/15, 9:30 A.M.
WASTEWATER COMPOSITE, SP009, 7/30/15, 9:30 A.M. – 3:30 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.31	----	150.1	7/30/15
Temperature, °C (G)	28.3	----	170.1	7/30/15
Biological Oxygen Demand (C)	142	5	5210 B	8/5/15
Chemical Oxygen Demand (C)	384	10	5220 D	7/31/15
Total Suspended Solids (C)	302	5	160.2	8/3/15
Oil & Grease (G)	20	5	1664	8/6/15
Total Cyanide (G)	ND	0.01	335.4	8/4/15
Cadmium (C)	ND	0.01	200.8	8/3/15
Chromium (C)	ND	0.01	200.8	8/3/15
Copper (C)	0.040	0.01	200.8	8/3/15
Lead (C)	ND	0.01	200.8	8/3/15
Nickel (C)	ND	0.01	200.8	8/3/15
Selenium (C)	ND	0.01	200.8	8/3/15
Silver (C)	0.021	0.01	200.8	8/3/15
Thallium (C)	ND	0.01	200.8	8/3/15
Zinc (C)	0.15	0.01	200.8	8/3/15
Mercury (C)	ND	0.005	200.8	8/3/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 7/30/15, 9:30 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.0028 (J)	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(J): Analyte Detected Below the MQL

Test Method: EPA 600/624
Date of Analysis: 8/3/15
Dilution Factor: 1

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

Attention: Livi Isringhausen

August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 7/30/15, 9:30 A.M.

Units: mg/L

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,2,4-Trichlorobenzene	ND	0.092	Benzidine	ND	0.368
1,2- Diphenylhydrazine	ND	0.092	Benzo(a)pyrene	ND	0.092
2,4,6-Trichlorophenol	ND	0.092	Bis(2-chloroethoxy)methane	ND	0.092
2,4-Dichlorophenol	ND	0.092	Bis(2-chloroethyl)ether	ND	0.092
2,4-Dimethylphenol	ND	0.092	Bis(2-chloroisopropyl)ether	ND	0.092
2,4-Dinitrophenol	ND	0.184	Diethyl phthalate	ND	0.092
2,4-Dinitrotoluene	ND	0.092	Hexachlorobenzene	ND	0.092
2,6-Dinitrotoluene	ND	0.092	Hexachlorocyclopentadiene	ND	0.184
2-Chlorophenol	ND	0.092	Hexachloroethane	ND	0.092
2-Nitrophenol	ND	0.184	Isophorone	ND	0.092
3,3-Dichlorobenzidine	ND	0.092	Naphthalene	ND	0.092
4,6-Dinitro-2-methylphenol	ND	0.184	Nitrobenzene	ND	0.092
4-Chloro-3-methylphenol	ND	0.184	N-Nitrosodimethylamine	ND	0.184
4-Nitrophenol	ND	0.184	Pentachlorophenol	ND	0.184
Acenaphthene	ND	0.092	Phenanthrene	ND	0.092
Acenaphthylene	ND	0.092	Phenol	ND	0.046
Anthracene	ND	0.092	Pyrene	ND	0.092
Anzobenzene	ND	0.092			

ACGH

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 8/4/15
Dilution Factor: 10

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Attention: Livi Isringhausen

August 11, 2015
Lab No. 15E-1447
Invoice No. 203151
P.O. No. 2926272A

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 7/30/15, 9:30 A.M.

PESTICIDES

Units: µg/L (ppb)

ANALYTE	SP009	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 8/4/15
Dilution Factor: 1

SR/ al

Steve Root, Manager
Environmental Testing

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations
	Print or type name of signing official. _____
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature _____ Date: 8/12/15

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METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: **IDENTIFYING INFORMATION**

1024-3530-00

Company Name: Washington University School of Medicine
Permit No: 51122162-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2016 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: **ANALYTICAL RESULTS OF SELF MONITORING**

MSD Sample Point Reference Number		001		003		005		
Dates on Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
Times at Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow						Units
Flow	***	E	28,250	E	55,500	E	450,000	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	G	see attatched	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched	mg/L
		001		003		005		
		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	0	see attatched	mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	mg/L

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Toluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched		see attatched		see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched		see attatched		see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844		see attatched		see attatched		see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched		mg/L

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You must complete and sign the certification statements on the reverse side.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 5112262-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2016 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		006		007		008		009		
Dates on Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
Times at Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		G: see attatched C: see attatched		
PARAMETER		Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	LIMIT	E	24,000	E	8,900	E	131,850	E	131,850	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	C	see attatched	C	see attatched	mg/L
		006		007		008		009		
		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched	mg/L

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Chlorobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloroform	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Chloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Toluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched	G	see attatched	G	see attatched		mg/L

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METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 5112262-00
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2017 (Jan-Mar) (Apr-June) √ (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		10		11		
Dates on Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		
Times at Which Samples Were Collected		G: see attatched C: see attatched		G: see attatched C: see attatched		
PARAMETER		Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow				Units
Flow	LIMIT	E	131,850	E	131,850	Gal/Day
Biological Oxygen Demand (C)	****	C	see attatched	C	see attatched	mg/L
Chemical Oxygen Demand (C)	****	C	see attatched	C	see attatched	mg/L
Total Suspended Solids (C)	****	C	see attatched	C	see attatched	mg/L
pH (Std. pH Units) (G)	5.5 - 11.5	G	see attatched	G	see attatched	pH
Temperature, °C (G)	60	G	see attatched	G	see attatched	mg/L
Oil & Grease (G)	200	G	see attatched	G	see attatched	Celcius
Total Cyanide (G)	0.4	C	see attatched	C	see attatched	mg/L
Cadmium (C)	0.7	C	see attatched	C	see attatched	mg/L
Chromium (C)	5	C	see attatched	C	see attatched	mg/L
Copper (C)	2.7	G	see attatched	G	see attatched	mg/L
Lead (C)	0.4	G	see attatched	G	see attatched	mg/L
Nickel (C)	2.3	G	see attatched	G	see attatched	mg/L
Selenium (C)	0.2	C	see attatched	C	see attatched	mg/L
Silver (C)	0.5	C	see attatched	C	see attatched	mg/L
Thallium (C)	***	C	see attatched	C	see attatched	mg/L
Zinc (C)	3	C	see attatched	C	see attatched	mg/L
Mercury (C)	0.01	C	see attatched	C	see attatched	mg/L
		008		009		
		G: see attatched G: see attatched		G: see attatched G: see attatched		
1,1,1,-Trichloroethane	5.884	G	see attatched	G	see attatched	mg/L
1,1,2,2-Tetrachloroethane	5.844	G	see attatched	G	see attatched	mg/L
1,1,2- Trichloroethane	5.844	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethane	5.844	G	see attatched	G	see attatched	mg/L
1,1-Dichloroethene	5.844	G	see attatched	G	see attatched	mg/L
1,2- Dichlorobenzene	5.844	G	see attatched	G	see attatched	mg/L
1,2-Dichloroethane	5.844	G	see attatched	G	see attatched	mg/L
1,2- Dichloropropane	5.844	G	see attatched	G	see attatched	mg/L
1,3- Dichlorobenzene	5.844	G	see attatched	G	see attatched	mg/L
1,4- Dichlorobenzene	5.844	G	see attatched	G	see attatched	mg/L
2-Chloroethyl vinyl ether	5.844	G	see attatched	G	see attatched	mg/L
Acrolein	5.844	G	see attatched	G	see attatched	mg/L
Acrylonitrile	5.844	G	see attatched	G	see attatched	mg/L
Benzene	5.844	G	see attatched	G	see attatched	mg/L
Bromodichloromethane	5.844	G	see attatched	G	see attatched	mg/L
Bromoform	5.844	G	see attatched	G	see attatched	mg/L
Bromomethane	5.844	G	see attatched	G	see attatched	mg/L
Carbon tetrachloride	5.844	G	see attatched	G	see attatched	mg/L
Chlorobenzene	5.844	G	see attatched	G	see attatched	mg/L

Chloroethane	5.844	G	see attatched	G	see attatched		mg/L
Chloroform	5.844	G	see attatched	G	see attatched		mg/L
Chloromethane	5.844	G	see attatched	G	see attatched		mg/L
cis-1,3 – Dichloropropene	5.844	G	see attatched	G	see attatched		mg/L
Dibromochloromethane	5.844	G	see attatched	G	see attatched		mg/L
Ethylbenzene	5.844	G	see attatched	G	see attatched		mg/L
Methylene chloride	5.844	G	see attatched	G	see attatched		mg/L
Tetrachloroethene	5.844	G	see attatched	G	see attatched		mg/L
Toluene	5.844	G	see attatched	G	see attatched		mg/L
trans-1,2-Dichloroethene	5.844	G	see attatched	G	see attatched		mg/L
trans-1,3-Dichloropropene	5.844	G	see attatched	G	see attatched		mg/L
Trichloroethene	5.844	G	see attatched	G	see attatched		mg/L
1,2,4-Trichlorobenzene	6.844	G	see attatched	G	see attatched		mg/L
1,2- Diphenylhydrazine	7.844	G	see attatched	G	see attatched		mg/L
2,4,6-Trichlorophenol	5.844	G	see attatched	G	see attatched		mg/L
2,4,Dichlorophenol	5.844	G	see attatched	G	see attatched		mg/L
2,4-Dimethylphenol	5.844	G	see attatched	G	see attatched		mg/L
2,4-Dinitrophenol	5.844	G	see attatched	G	see attatched		mg/L
2,4-Dinitrotoluene	5.844	G	see attatched	G	see attatched		mg/L
2,6-Dinitrotoluene	5.844	G	see attatched	G	see attatched		mg/L
2-Chlorophenol	5.844	G	see attatched	G	see attatched		mg/L
2-Nitrophenol	5.844	G	see attatched	G	see attatched		mg/L
3,3-Dichlorobenzidine	5.844	G	see attatched	G	see attatched		mg/L
4,6- Dinitro-2-methylphenol	5.844	G	see attatched	G	see attatched		mg/L
4-Chloro-3-methylphenol	5.844	G	see attatched	G	see attatched		mg/L
4-Nitrophenol	5.844	G	see attatched	G	see attatched		mg/L
Acenaphthene	5.844	G	see attatched	G	see attatched		mg/L
Acenaphthylene	5.844	G	see attatched	G	see attatched		mg/L
Anthracene	5.844	G	see attatched	G	see attatched		mg/L
Azobenzene	5.844	G	see attatched	G	see attatched		mg/L
Benzo(a)pyrene	5.844	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethoxy)methane	5.844	G	see attatched	G	see attatched		mg/L
Bis(2-chloroethyl)ether	5.844	G	see attatched	G	see attatched		mg/L
Bis(2-chloroisopropyl)ether	5.844	G	see attatched	G	see attatched		mg/L
Diethyl Phthlate	5.844	G	see attatched	G	see attatched		mg/L
Hexachloroethane	5.844	G	see attatched	G	see attatched		mg/L
Isophorone	5.844	G	see attatched	G	see attatched		mg/L
Naphthalene	5.844	G	see attatched	G	see attatched		mg/L
Nitrobenzene	5.844	G	see attatched	G	see attatched		mg/L
N-Nitrosodimethylamine	5.844	G	see attatched	G	see attatched		mg/L
Pentachlorophenol	5.844	G	see attatched	G	see attatched		mg/L
Phenanthrene	5.844	G	see attatched	G	see attatched		mg/L
Phenol	5.844	G	see attatched	G	see attatched		mg/L
Pyrene	5.844	G	see attatched	G	see attatched		mg/L
Aldrin	5.844	G	see attatched	G	see attatched		mg/L
Cholordane	5.844	G	see attatched	G	see attatched		mg/L
Dieldrin	5.844	G	see attatched	G	see attatched		mg/L
gamma-BHC	5.844	G	see attatched	G	see attatched		mg/L
Heptachlor epoxide	5.844	G	see attatched	G	see attatched		mg/L

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/18/16, 8:45 A.M.
WASTEWATER COMPOSITE, SP001, 07/18/16, 8:45 A.M – 3:30 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.15	----	150.1	07/18/16
Temperature, °C (G)	21.2	----	170.1	07/18/16
Biological Oxygen Demand (C)	45	5	5210 B	07/20/16
Chemical Oxygen Demand (C)	151	10	5220 D	07/20/16
Total Suspended Solids (C)	44	5	160.2	07/21/16
Oil & Grease (G)	ND	5	1664	07/19/16
Total Cyanide (G)	0.006	0.005	335.4	07/22/16
Cadmium (C)	ND	0.01	200.7	07/22/16
Chromium (C)	0.04	0.01	200.7	07/22/16
Copper (C)	0.03	0.01	200.7	07/22/16
Lead (C)	ND	0.01	200.7	07/22/16
Nickel (C)	0.02	0.01	200.7	07/22/16
Selenium (C)	ND	0.02	200.7	07/22/16
Silver (C)	ND	0.02	200.7	07/22/16
Thallium (C)	ND	0.02	200.7	07/22/16
Zinc (C)	ND	0.05	200.7	07/22/16
Mercury (C)	ND	0.005	200.8	07/25/16

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/18/16, 8:45 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP001	MQL	ANALYTE	SP001	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	ND	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.05			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 07/21/16
Dilution Factor: 1

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Attention: Livi Isringhausen

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/18/16, 8:45 A.M.

Units: mg/L **SEMI-VOLATILE ORGANIC COMPOUNDS**

ANALYTE	SP001	MQL	ANALYTE	SP001	MQL
1,2,4-Trichlorobenzene	ND	0.010	Benzidine	ND	0.040
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.010
2,4,6-Trichlorophenol	ND	0.010	Bis(2-chloroethoxy)methane	ND	0.010
2,4-Dichlorophenol	ND	0.010	Bis(2-chloroethyl)ether	ND	0.010
2,4-Dimethylphenol	ND	0.010	Bis(2-chloroisopropyl)ether	ND	0.010
2,4-Dinitrophenol	ND	0.020	Diethyl phthalate	ND	0.010
2,4-Dinitrotoluene	ND	0.010	Hexachlorobenzene	ND	0.010
2,6-Dinitrotoluene	ND	0.010	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.010
2-Nitrophenol	ND	0.020	Isophorone	ND	0.010
3,3-Dichlorobenzidine	ND	0.010	Naphthalene	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.020	Nitrobenzene	ND	0.010
4-Chloro-3-methylphenol	ND	0.020	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.020	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.010	Phenanthrene	ND	0.010
Acenaphthylene	ND	0.010	Phenol	ND	0.005
Anthracene	ND	0.010	Pyrene	ND	0.010
Anzobenzene	ND	0.010			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 07/22/16
Dilution Factor: 1

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 07/18/16, 8:45 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP001	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 07/25/16
Dilution Factor: 1

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Attention: Livi Isringhausen

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/18/16, 9:10 A.M.
WASTEWATER COMPOSITE, SP003, 07/18/16, 9:10 A.M. – 3:40 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.01	----	150.1	07/18/16
Temperature, °C (G)	29.7	----	170.1	07/18/16
Biological Oxygen Demand (C)	37	5	5210 B	07/20/16
Chemical Oxygen Demand (C)	72	10	5220 D	07/20/16
Total Suspended Solids (C)	9	5	160.2	07/21/16
Oil & Grease (G)	ND	5	1664	07/20/16
Total Cyanide (G)	0.006	0.005	335.4	07/22/16
Cadmium (C)	ND	0.01	200.7	07/22/16
Chromium (C)	0.02	0.01	200.7	07/22/16
Copper (C)	0.02	0.01	200.7	07/22/16
Lead (C)	ND	0.01	200.7	07/22/16
Nickel (C)	ND	0.01	200.7	07/22/16
Selenium (C)	ND	0.02	200.7	07/22/16
Silver (C)	ND	0.02	200.7	07/22/16
Thallium (C)	ND	0.02	200.7	07/22/16
Zinc (C)	ND	0.05	200.7	07/22/16
Mercury (C)	ND	0.005	200.8	07/25/16

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/18/16, 9:10 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.0064	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.050
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 07/21/16
Dilution Factor: 1

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/18/16, 9:10 A.M.

Units: mg/L **SEMI-VOLATILE ORGANIC COMPOUNDS**

ANALYTE	SP003	MQL	ANALYTE	SP003	MQL
1,2,4-Trichlorobenzene	ND	0.010	Benzidine	ND	0.040
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.010
2,4,6-Trichlorophenol	ND	0.010	Bis(2-chloroethoxy)methane	ND	0.010
2,4-Dichlorophenol	ND	0.010	Bis(2-chloroethyl)ether	ND	0.010
2,4-Dimethylphenol	ND	0.010	Bis(2-chloroisopropyl)ether	ND	0.010
2,4-Dinitrophenol	ND	0.020	Diethyl phthalate	ND	0.010
2,4-Dinitrotoluene	ND	0.010	Hexachlorobenzene	ND	0.010
2,6-Dinitrotoluene	ND	0.010	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.010
2-Nitrophenol	ND	0.020	Isophorone	ND	0.010
3,3-Dichlorobenzidine	ND	0.010	Naphthalene	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.020	Nitrobenzene	ND	0.010
4-Chloro-3-methylphenol	ND	0.020	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.020	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.010	Phenanthrene	ND	0.010
Acenaphthylene	ND	0.010	Phenol	ND	0.005
Anthracene	ND	0.010	Pyrene	ND	0.010
Anzobenzene	ND	0.010			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 07/22/16
Dilution Factor: 1

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Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 07/18/16, 9:10 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP003	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 07/25/16
Dilution Factor: 1

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/18/16, 8:35 A.M.
WASTEWATER COMPOSITE, SP005, 07/18/16, 8:35 A.M. – 3:20 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.47	----	150.1	07/18/16
Temperature, °C (G)	26.2	----	170.1	07/18/16
Biological Oxygen Demand (C)	42	5	5210 B	07/20/16
Chemical Oxygen Demand (C)	151	10	5220 D	07/20/16
Total Suspended Solids (C)	27	5	160.2	07/21/16
Oil & Grease (G)	ND	5	1664	07/20/16
Total Cyanide (G)	0.006	0.005	335.4	07/22/16
Cadmium (C)	ND	0.01	200.7	07/22/16
Chromium (C)	ND	0.01	200.7	07/22/16
Copper (C)	0.02	0.01	200.7	07/22/16
Lead (C)	0.03	0.01	200.7	07/22/16
Nickel (C)	ND	0.01	200.7	07/22/16
Selenium (C)	ND	0.02	200.7	07/22/16
Silver (C)	ND	0.02	200.7	07/22/16
Thallium (C)	ND	0.02	200.7	07/22/16
Zinc (C)	ND	0.05	200.7	07/22/16
Mercury (C)	ND	0.005	200.8	07/25/16

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/18/16, 8:35 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.005	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.050
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 07/21/16
Dilution Factor: 1

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/18/16, 8:35 A.M.

Units: mg/L **SEMI-VOLATILE ORGANIC COMPOUNDS**

ANALYTE	SP005	MQL	ANALYTE	SP005	MQL
1,2,4-Trichlorobenzene	ND	0.010	Benzidine	ND	0.040
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.010
2,4,6-Trichlorophenol	ND	0.010	Bis(2-chloroethoxy)methane	ND	0.010
2,4-Dichlorophenol	ND	0.010	Bis(2-chloroethyl)ether	ND	0.010
2,4-Dimethylphenol	ND	0.010	Bis(2-chloroisopropyl)ether	ND	0.010
2,4-Dinitrophenol	ND	0.020	Diethyl phthalate	ND	0.010
2,4-Dinitrotoluene	ND	0.010	Hexachlorobenzene	ND	0.010
2,6-Dinitrotoluene	ND	0.010	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.010
2-Nitrophenol	ND	0.020	Isophorone	ND	0.010
3,3-Dichlorobenzidine	ND	0.010	Naphthalene	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.020	Nitrobenzene	ND	0.010
4-Chloro-3-methylphenol	ND	0.020	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.020	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.010	Phenanthrene	ND	0.010
Acenaphthylene	ND	0.010	Phenol	ND	0.005
Anthracene	ND	0.010	Pyrene	ND	0.010
Anzobenzene	ND	0.010			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 07/22/16
Dilution Factor: 1

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Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 07/18/16, 8:35 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP005	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 07/25/16
Dilution Factor: 1

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/18/16, 9:01 A.M.
WASTEWATER COMPOSITE, SP007, 07/18/16, 9:01 A.M. – 3:35 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.14	----	150.1	07/18/16
Temperature, °C (G)	30.3	----	170.1	07/18/16
Biological Oxygen Demand (C)	33	5	5210 B	07/20/16
Chemical Oxygen Demand (C)	81	10	5220 D	07/20/16
Total Suspended Solids (C)	57	5	160.2	07/21/16
Oil & Grease (G)	5	5	1664	07/20/16
Total Cyanide (G)	0.006	0.005	335.4	07/22/16
Cadmium (C)	ND	0.01	200.7	07/22/16
Chromium (C)	ND	0.01	200.7	07/22/16
Copper (C)	0.03	0.01	200.7	07/22/16
Lead (C)	ND	0.01	200.7	07/22/16
Nickel (C)	ND	0.01	200.7	07/22/16
Selenium (C)	ND	0.02	200.7	07/22/16
Silver (C)	ND	0.02	200.7	07/22/16
Thallium (C)	ND	0.02	200.7	07/22/16
Zinc (C)	ND	0.05	200.7	07/22/16
Mercury (C)	ND	0.005	200.8	07/25/16

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

(C)-Composite
(G)-Grab

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/18/16, 9:01 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	ND	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.005
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 07/21/16
Dilution Factor: 1

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P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/18/16, 9:01 A.M.

Units: mg/L **SEMI-VOLATILE ORGANIC COMPOUNDS**

ANALYTE	SP007	MQL	ANALYTE	SP007	MQL
1,2,4-Trichlorobenzene	ND	0.010	Benzidine	ND	0.040
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.010
2,4,6-Trichlorophenol	ND	0.010	Bis(2-chloroethoxy)methane	ND	0.010
2,4-Dichlorophenol	ND	0.010	Bis(2-chloroethyl)ether	ND	0.010
2,4-Dimethylphenol	ND	0.010	Bis(2-chloroisopropyl)ether	ND	0.010
2,4-Dinitrophenol	ND	0.020	Diethyl phthalate	ND	0.010
2,4-Dinitrotoluene	ND	0.010	Hexachlorobenzene	ND	0.010
2,6-Dinitrotoluene	ND	0.010	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.010
2-Nitrophenol	ND	0.020	Isophorone	ND	0.010
3,3-Dichlorobenzidine	ND	0.010	Naphthalene	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.020	Nitrobenzene	ND	0.010
4-Chloro-3-methylphenol	ND	0.020	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.020	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.010	Phenanthrene	ND	0.010
Acenaphthylene	ND	0.010	Phenol	ND	0.005
Anthracene	ND	0.010	Pyrene	ND	0.010
Anzobenzene	ND	0.010			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 07/22/16
Dilution Factor: 1

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 07/18/16, 9:01 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP007	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 07/25/16
Dilution Factor: 1

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Attention: Livi Isringhausen

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/19/16, 8:51 A.M.
WASTEWATER COMPOSITE, SP008, 07/19/16, 8:51 A.M. – 3:32 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.46	----	150.1	07/19/16
Temperature, °C (G)	26.5	----	170.1	07/19/16
Biological Oxygen Demand (C)	740	40	5210 B	07/20/16
Chemical Oxygen Demand (C)	823	40	5220 D	07/20/16
Total Suspended Solids (C)	642	5	160.2	07/21/16
Oil & Grease (G)	31	5	1664	07/20/16
Total Cyanide (G)	ND	0.005	335.4	07/22/16
Cadmium (C)	ND	0.01	200.8	07/22/16
Chromium (C)	0.02	0.01	200.8	07/22/16
Copper (C)	0.03	0.01	200.8	07/22/16
Lead (C)	0.01	0.01	200.8	07/22/16
Nickel (C)	ND	0.01	200.8	07/22/16
Selenium (C)	ND	0.02	200.8	07/22/16
Silver (C)	ND	0.02	200.8	07/22/16
Thallium (C)	ND	0.02	200.8	07/22/16
Zinc (C)	ND	0.05	200.8	07/22/16
Mercury (C)	ND	0.005	200.8	07/25/16

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/19/16, 8:51 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	0.0078	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 07/21/16
Dilution Factor: 1

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/19/16, 8:51 A.M.

Units: mg/L **SEMI-VOLATILE ORGANIC COMPOUNDS**

ANALYTE	SP008	MQL	ANALYTE	SP008	MQL
1,2,4-Trichlorobenzene	ND	0.05	Benzidine	ND	0.20
1,2- Diphenylhydrazine	ND	0.05	Benzo(a)pyrene	ND	0.05
2,4,6-Trichlorophenol	ND	0.05	Bis(2-chloroethoxy)methane	ND	0.05
2,4-Dichlorophenol	ND	0.05	Bis(2-chloroethyl)ether	ND	0.05
2,4-Dimethylphenol	ND	0.05	Bis(2-chloroisopropyl)ether	ND	0.05
2,4-Dinitrophenol	ND	0.10	Diethyl phthalate	ND	0.05
2,4-Dinitrotoluene	ND	0.05	Hexachlorobenzene	ND	0.05
2,6-Dinitrotoluene	ND	0.05	Hexachlorocyclopentadiene	ND	0.10
2-Chlorophenol	ND	0.05	Hexachloroethane	ND	0.05
2-Nitrophenol	ND	0.10	Isophorone	ND	0.05
3,3-Dichlorobenzidine	ND	0.05	Naphthalene	ND	0.05
4,6-Dinitro-2-methylphenol	ND	0.10	Nitrobenzene	ND	0.05
4-Chloro-3-methylphenol	ND	0.10	N-Nitrosodimethylamine	ND	0.10
4-Nitrophenol	ND	0.10	Pentachlorophenol	ND	0.10
Acenaphthene	ND	0.05	Phenanthrene	ND	0.05
Acenaphthylene	ND	0.05	Phenol	ND	0.025
Anthracene	ND	0.05	Pyrene	ND	0.05
Anzobenzene	ND	0.05			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 07/22/16
Dilution Factor: 5

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 07/19/16, 8:51 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP008	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 07/25/16
Dilution Factor: 1

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July 29, 2016
Lab No. 16E-1497
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P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/19/16, 8:36 A.M.
WASTEWATER COMPOSITE, SP009, 07/19/16, 8:36 A.M. – 3:25 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.16	----	150.1	07/19/16
Temperature, °C (G)	21.7	----	170.1	07/19/16
Biological Oxygen Demand (C)	198	10	5210 B	07/20/16
Chemical Oxygen Demand (C)	353	10	5220 D	07/20/16
Total Suspended Solids (C)	198	10	160.2	07/21/16
Oil & Grease (G)	12	5	1664	07/20/16
Total Cyanide (G)	0.015	0.005	335.4	07/22/16
Cadmium (C)	ND	0.01	200.8	07/22/16
Chromium (C)	ND	0.01	200.8	07/22/16
Copper (C)	0.02	0.01	200.8	07/22/16
Lead (C)	0.02	0.01	200.8	07/22/16
Nickel (C)	ND	0.01	200.8	07/22/16
Selenium (C)	ND	0.02	200.8	07/22/16
Silver (C)	ND	0.02	200.8	07/22/16
Thallium (C)	ND	0.02	200.8	07/22/16
Zinc (C)	ND	0.05	200.8	07/22/16
Mercury (C)	ND	0.005	200.8	07/25/16

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL
(C)-Composite
(G)-Grab

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/19/16, 8:36 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	ND	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 07/21/16
Dilution Factor: 1

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REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/19/16, 8:36 A.M.

Units: mg/L **SEMI-VOLATILE ORGANIC COMPOUNDS**

ANALYTE	SP009	MQL	ANALYTE	SP009	MQL
1,2,4-Trichlorobenzene	ND	0.05	Benzidine	ND	0.20
1,2- Diphenylhydrazine	ND	0.05	Benzo(a)pyrene	ND	0.05
2,4,6-Trichlorophenol	ND	0.05	Bis(2-chloroethoxy)methane	ND	0.05
2,4-Dichlorophenol	ND	0.05	Bis(2-chloroethyl)ether	ND	0.05
2,4-Dimethylphenol	ND	0.05	Bis(2-chloroisopropyl)ether	ND	0.05
2,4-Dinitrophenol	ND	0.10	Diethyl phthalate	ND	0.05
2,4-Dinitrotoluene	ND	0.05	Hexachlorobenzene	ND	0.05
2,6-Dinitrotoluene	ND	0.05	Hexachlorocyclopentadiene	ND	0.10
2-Chlorophenol	ND	0.05	Hexachloroethane	ND	0.05
2-Nitrophenol	ND	0.10	Isophorone	ND	0.05
3,3-Dichlorobenzidine	ND	0.05	Naphthalene	ND	0.05
4,6-Dinitro-2-methylphenol	ND	0.10	Nitrobenzene	ND	0.05
4-Chloro-3-methylphenol	ND	0.10	N-Nitrosodimethylamine	ND	0.10
4-Nitrophenol	ND	0.10	Pentachlorophenol	ND	0.10
Acenaphthene	ND	0.05	Phenanthrene	ND	0.05
Acenaphthylene	ND	0.05	Phenol	ND	0.025
Anthracene	ND	0.05	Pyrene	ND	0.05
Anzobenzene	ND	0.05			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 07/22/16
Dilution Factor: 5

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Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 07/19/16 8:36 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP009	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 07/25/16
Dilution Factor: 1

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/19/16, 9:22 A.M.
WASTEWATER COMPOSITE, SP010, 07/19/16, 9:22 A.M. – 3:45 P.M.

Units: mg/L except as noted

ANALYTE	SP010	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.51	----	150.1	07/19/16
Temperature, °C (G)	25.9	----	170.1	07/19/16
Biological Oxygen Demand (C)	402	10	5210 B	07/20/16
Chemical Oxygen Demand (C)	576	10	5220 D	07/20/16
Total Suspended Solids (C)	33	5	160.2	07/21/16
Oil & Grease (G)	81	5	1664	07/20/16
Total Cyanide (G)	ND	0.005	335.4	07/25/16
Cadmium (C)	ND	0.01	200.8	07/22/16
Chromium (C)	0.02	0.01	200.8	07/22/16
Copper (C)	0.02	0.01	200.8	07/22/16
Lead (C)	0.01	0.01	200.8	07/22/16
Nickel (C)	ND	0.01	200.8	07/22/16
Selenium (C)	ND	0.02	200.8	07/22/16
Silver (C)	ND	0.02	200.8	07/22/16
Thallium (C)	ND	0.02	200.8	07/22/16
Zinc (C)	ND	0.05	200.8	07/22/16
Mercury (C)	ND	0.005	200.8	07/25/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/19/16, 9:22 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,1,1-Trichloroethane	ND	0.05	Bromomethane	ND	0.10
1,1,2,2-Tetrachloroethane	ND	0.05	Carbon tetrachloride	ND	0.05
1,1,2-Trichloroethane	ND	0.05	Chlorobenzene	ND	0.05
1,1-Dichloroethane	ND	0.05	Chloroethane	ND	0.10
1,1-Dichloroethene	ND	0.05	Chloroform	0.071	0.05
1,2-Dichlorobenzene	ND	0.05	Chloromethane	ND	0.10
1,2-Dichloroethane	ND	0.05	cis-1,3,-Dichloropropene	ND	0.05
1,2-Dichloropropane	ND	0.05	Dibromochloromethane	ND	0.05
1,3-Dichlorobenzene	ND	0.05	Ethylbenzene 1.59	1.34	0.05
1,4-Dichlorobenzene	ND	0.05	Methylene chloride	ND	0.05
2-Chloroethyl vinyl ether	ND	0.20	Tetrachloroethene	ND	0.05
Acrolein	ND	1.00	Toluene	ND	0.05
Acrylonitrile	ND	0.05	trans-1,2-Dichloroethene	ND	0.05
Benzene	ND	0.02	trans-1,3-Dichloropropene	ND	0.05
Bromodichloromethane	ND	0.05	Trichloroethene	ND	0.05
Bromoform	ND	0.05			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 07/21/16
Dilution Factor: 10

Elevated MQL due to high level of target and/or non-target analytes

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2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

Attention: Livi Isringhausen

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/19/16, 9:22 A.M.

Units: mg/L **SEMI-VOLATILE ORGANIC COMPOUNDS**

ANALYTE	SP010	MQL	ANALYTE	SP010	MQL
1,2,4-Trichlorobenzene	ND	0.010	Benzidine	ND	0.040
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.010
2,4,6-Trichlorophenol	ND	0.010	Bis(2-chloroethoxy)methane	ND	0.010
2,4-Dichlorophenol	ND	0.010	Bis(2-chloroethyl)ether	ND	0.010
2,4-Dimethylphenol	ND	0.010	Bis(2-chloroisopropyl)ether	ND	0.010
2,4-Dinitrophenol	ND	0.020	Diethyl phthalate	ND	0.010
2,4-Dinitrotoluene	ND	0.010	Hexachlorobenzene	ND	0.010
2,6-Dinitrotoluene	ND	0.010	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.010
2-Nitrophenol	ND	0.020	Isophorone	ND	0.010
3,3-Dichlorobenzidine	ND	0.010	Naphthalene	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.020	Nitrobenzene	ND	0.010
4-Chloro-3-methylphenol	ND	0.020	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.020	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.010	Phenanthrene	ND	0.010
Acenaphthylene	ND	0.010	Phenol	ND	0.005
Anthracene	ND	0.010	Pyrene	ND	0.010
Anzobenzene	ND	0.010			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 07/22/16
Dilution Factor: 1

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Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP010, 07/19/16, 9:22 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP010	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 07/25/16
Dilution Factor: 1

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St. Louis, MO 63110

Attention: Livi Isringhausen

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/19/16, 9:37 A.M.
WASTEWATER COMPOSITE, SP011, 07/19/16, 9:37 A.M. – 3:56 P.M.

Units: mg/L except as noted +9

ANALYTE	SP011	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.61	----	150.1	07/19/16
Temperature, °C (G)	24.5	----	170.1	07/19/16
Biological Oxygen Demand (C)	147	5	5210 B	07/20/16
Chemical Oxygen Demand (C)	232	10	5220 D	07/20/16
Total Suspended Solids (C)	80	5	160.2	07/21/16
Oil & Grease (G)	ND	5	1664	07/20/16
Total Cyanide (G)	0.049	0.010	335.4	07/27/16
Cadmium (C)	ND	0.01	200.8	07/22/16
Chromium (C)	0.03	0.01	200.8	07/22/16
Copper (C)	0.02	0.01	200.8	07/22/16
Lead (C)	0.01	0.01	200.8	07/22/16
Nickel (C)	ND	0.01	200.8	07/22/16
Selenium (C)	ND	0.02	200.8	07/22/16
Silver (C)	ND	0.02	200.8	07/22/16
Thallium (C)	ND	0.02	200.8	07/22/16
Zinc (C)	ND	0.05	200.8	07/22/16
Mercury (C)	ND	0.005	200.8	07/25/16

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/19/16, 9:37 A.M.

Units: mg/L

VOLATILE ORGANIC COMPOUNDS

ANALYTE	SP011	MQL	ANALYTE	SP011	MQL
1,1,1-Trichloroethane	ND	0.005	Bromomethane	ND	0.010
1,1,2,2-Tetrachloroethane	ND	0.005	Carbon tetrachloride	ND	0.005
1,1,2-Trichloroethane	ND	0.005	Chlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005	Chloroethane	ND	0.010
1,1-Dichloroethene	ND	0.005	Chloroform	ND	0.005
1,2-Dichlorobenzene	ND	0.005	Chloromethane	ND	0.010
1,2-Dichloroethane	ND	0.005	cis-1,3,-Dichloropropene	ND	0.005
1,2-Dichloropropane	ND	0.005	Dibromochloromethane	ND	0.005
1,3-Dichlorobenzene	ND	0.005	Ethylbenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005	Methylene chloride	ND	0.005
2-Chloroethyl vinyl ether	ND	0.020	Tetrachloroethene	ND	0.005
Acrolein	ND	0.10	Toluene	ND	0.005
Acrylonitrile	ND	0.005	trans-1,2-Dichloroethene	ND	0.005
Benzene	ND	0.002	trans-1,3-Dichloropropene	ND	0.005
Bromodichloromethane	ND	0.005	Trichloroethene	ND	0.005
Bromoform	ND	0.005			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/624
Date of Analysis: 07/21/16
Dilution Factor: 1

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660 South Euclid Ave.
St. Louis, MO 63110

Attention: Livi Isringhausen

July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
P.O. No. 2926287C

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/19/16, 9:37 A.M.

Units: mg/L **SEMI-VOLATILE ORGANIC COMPOUNDS**

ANALYTE	SP011	MQL	ANALYTE	SP011	MQL
1,2,4-Trichlorobenzene	ND	0.010	Benzidine	ND	0.040
1,2- Diphenylhydrazine	ND	0.010	Benzo(a)pyrene	ND	0.010
2,4,6-Trichlorophenol	ND	0.010	Bis(2-chloroethoxy)methane	ND	0.010
2,4-Dichlorophenol	ND	0.010	Bis(2-chloroethyl)ether	ND	0.010
2,4-Dimethylphenol	ND	0.010	Bis(2-chloroisopropyl)ether	ND	0.010
2,4-Dinitrophenol	ND	0.020	Diethyl phthalate	ND	0.010
2,4-Dinitrotoluene	ND	0.010	Hexachlorobenzene	ND	0.010
2,6-Dinitrotoluene	ND	0.010	Hexachlorocyclopentadiene	ND	0.020
2-Chlorophenol	ND	0.010	Hexachloroethane	ND	0.010
2-Nitrophenol	ND	0.020	Isophorone	ND	0.010
3,3-Dichlorobenzidine	ND	0.010	Naphthalene	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.020	Nitrobenzene	ND	0.010
4-Chloro-3-methylphenol	ND	0.020	N-Nitrosodimethylamine	ND	0.020
4-Nitrophenol	ND	0.020	Pentachlorophenol	ND	0.020
Acenaphthene	ND	0.010	Phenanthrene	ND	0.010
Acenaphthylene	ND	0.010	Phenol	ND	0.005
Anthracene	ND	0.010	Pyrene	ND	0.010
Anzobenzene	ND	0.010			

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/625
Date of Analysis: 07/22/16
Dilution Factor: 1

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July 29, 2016
Lab No. 16E-1497
Invoice No. 217146
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Attention: Livi Isringhausen

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP011, 07/19/16, 9:37 A.M.

Units: µg/L (ppb) **PESTICIDES**

ANALYTE	SP011	MQL
Aldrin	ND	0.05
Chlorodane	ND	0.05
Dieldrin	ND	0.05
Gamma-BHC	ND	0.05
Heptachlor epoxide	ND	0.05

MQL: Minimum Quantitative Limit
ND: None Detected Above MQL

Test Method: EPA 600/608
Date of Analysis: 07/25/16
Dilution Factor: 1

SR/ss

Steve Root, Manager
Environmental Testing

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmenatl Compliance Manager Telephone: 314-362-6735
	Signature: Date: 8/2/2016

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AUG 02 2016

DIVISION OF
ENVIRONMENTAL COMPLIANCE

SR

METROPOLITAN SEWER DISTRICT

INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

1024-3530-00

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No:

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2015** ☐ (JAN-MAR) ☒ (APR-JUN) ☐ (JUL-SEP) ☐ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
C-14	0.1913
H-3	8.3236
I-125	0.0367
I-125V	0.0284
P-32	0.2221
S-35	0.0721
Zn-65	0.0540
TOTAL ACTIVITY DISCHARGED	**8.9282**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☐ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist

Telephone: (314) 362-4968

Signature: Karla Spafford

Date: 07/17/2015

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

RECEIVED

JUL 17 2015

DIVISION OF
ENVIRONMENTAL COMPLIANCE

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

July 15, 2015

Livi Isringhausen
WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
660 S. Euclid Ave.
St. Louis, MO 63110

Dear Ms. Isringhausen:

We have reviewed your application dated July 8, 2015 requesting approval to discharge 220 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater consists of a 50% glycol and water mixture generated by emptying of the reheat system at the Washington University – McDonnell Sciences Building located at 660 S. Euclid Avenue, St. Louis, Missouri. Additional information contained on the application indicates the reheat system serves the 5th floor of that building only, and is being taken out of service.

Based on the information you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary or combined sewer on site. **This approval is valid for 30 days from the date of this letter.**

You must be certain the waste is discharged into a sanitary or combined sewer inlet only. This letter does not authorize any discharge to a separate storm sewer, or to any watercourse, as any such discharge would be in violation of state and federal laws. **Please notify me at the number below when the discharge is to commence, and please ensure the onsite personnel discharging the wastewater in question are provided with a copy of this letter.**

This discharge has been approved based upon the information and sample analysis you provided, and is subject to the conditions stated above. This approval may be revoked by the District at any time if any of the information is found to be incorrect, or if the conditions of this approval are violated. Also, if the discharge causes any operational or maintenance problem within the District's collection or treatment system, or results in violations of any conditions of the District's NPDES permit, Washington University will be considered responsible for damages. If you have any questions, please call me at (314) 436-8755.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Steven M. Grace

Steve Grace
Environmental Assistant Engineer

bv

ec: Brian Gibson
Doug Mendoza

File: IU, WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000], 660 S. Euclid Ave.

C1A

SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: WUSM-McDonnell Sciences Bldg. Evaluated by: SMG

Premise Address: 660 S. Euclid Ave. Date: 7/15/15

Send approval letter to applicant

Application Dated: 7/8/15 Received: 7/13/15 All Requested Info. Received: 7/13/15

SOURCE FILING/DESCRIPTION

1 - Source in PIMS? (Y) / N |
2 - If No, on IU Cross-Ref list? * Y / N |
3 - If No, MSD Account # from E-CIS? Y / N |
4 - If none, on "Source" list (pre-IMS)? ** Y / N |
5 - If No, assigned SOUR# from PIMS. |

SOURCE TYPE (circle): (IU) / Dead IU / SD

INDUSTRY ID: 1024353000

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 804 Description: 50/50 glycol & water from 5th floor reheat system

Normal WW flow from premise? (N/A) _____ ccf/month, _____GPD, _____GPH.

REGULATORY STATUS

Is waste a Hazardous Waste? (N) / Y _____

Categorical standards apply? (N) / Y _____

Contain PCB/ asbestos/ radioactive/ dioxin/ used oil? (N) / Y _____

Regulatory Agency Oversight? (N) / Y _____

DISCHARGE CONSIDERATIONS At MSD's connection:

Ordinance Limits (12559, p: 32) exceeded? (N) / Y _____

Ordinance other limits exceeded (dye, flash pt <140° F, temp >140° F, obstruction, nuisance foaming/odor, corrosion causing): (N) / Y _____

Water Quality Standard exceeded? (N) / Y _____

Fumes in sewer exceed PEL/TLV limits? (N) / Y _____

Vapors in sewer exceed 10% of LEL? (N) / Y _____

RECOMMENDATION: (APPROVE) / DENY (cc WWTP Mgr for timed discharge)

APPROVAL CONDITIONS:

Timed Discharge (COD/BOD/WQ/foam): (N) / Y Limit = _____ gal/hour

Require Treatment before Discharge? (N) / Y _____

Laboratory analysis fee due? (N) / Y $_____

SMR required? (N) / Y Frequency/analysis: _____

SMR log: (N/A) / Remediation.xls / Nonremediation.xls

Volume Billing applies (water unmetered or credited)? (N) / Y

Bill High Strength? (N) / Y Yes, If use >60,000 gal/month water ___and, > norm WW strgth

Surcharge calculation attached: N/A / (N) / Y

Expiration log updated: (N/A) / N / Y

O:\CostRecovery\Special Discharge\C1a.Checklist.doc

Metropolitan St. Louis Sewer District

10 East Grand Ave., St. Louis, MO 63147
Fax: 314-436-8766
email: spdisch@stlmsd.com

APPLICATION FOR SPECIAL DISCHARGE APPROVAL

I. WASTEWATER SOURCE IDENTIFICATION:

Site Name: Washington University - School of Medicine
Premise Address: 660 S. Euclid
City: St. Louis State: MO Zip: 63110
Owner: Washington University
Contact Person: Liri Isringhausen
Email: isringhausenm@wusm.wustl.edu
Phone: 314-362-6735 Fax: 314-362-1095

II. APPLICANT (mailing information):

Applicant Name: Washington University School of Medicine
Company Name: "
Mailing Address: 660 S. Euclid
City: St. Louis State: MO Zip: 63110
Email: isringhausenm@wusm.wustl.edu
Phone: 314-362-6735 Fax: 314-362-1095

III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):

1. Wastewater description/location: Water & glycol
2. Process/activity generating wastewater: ~~emptying~~ emptying of reheater to be put out of service
3. Physical and chemical composition: List all constituents, and known or potentially present regulated contaminants below.
   ☐ See separate listing enclosed, and/or ☐ See analytical results enclosed, and/or ☐ Material Safety Data Sheet enclosed.

DESCRIPTION	RANGE	UNIT
Water	50	%
glycol	50	%

DESCRIPTION *(continued)*	RANGE	UNIT

4. Is this wastewater from a process subject to EPA's categorical standards in 40 CFR Subchapter N? ☐ Yes ☒ No
   a. If yes, the applicable standards are in: 40 CFR Part _____, Subpart _____ ☐ Existing source ☐ New source
5. Does this wastewater contain polychlorinated biphenyls, asbestos or radioactive material? ☐ Yes ☒ No
   a. If yes, describe: _____
6. Representative sample: ☐ Laboratory results attached, and/or ☐ Sample provided (1/2 gallon minimum, clear container)
   a. Sample collection point/location: _____ Collection method: _____
   b. Sampler's name/Co.: _____ Sample date/time: _____
   c. Attach chain of custody as available
7. Discharge will occur over the following time period: ☒ < 30 days ☐ ≥ Two years ☐ Other: _____
   a. Expected total volume of wastewater to be discharged over the time period above: 220 Gallons
   b. Proposed discharge volume: 220 Gallons, at a frequency of: ☒ One time ☐ Daily ☐ Weekly ☐ Monthly ☐ Once/three months ☐ Once/six months ☐ Other: _____
8. Pretreatment of wastewater prior to discharge: ☒ None ☐ Yes, describe: _____
   a. If yes, attach site plan, pretreatment system schematic, and design specifications.
9. Wastewater from a remediation project under: ☐ Superfund/CERCLA ☐ RCRA ☐ Voluntary program ☐ UST ☒ Not applicable
   a. If from a remediation project, briefly describe the past and present utilization of the property: _____

III.B. MATERIAL FROM UNDERGROUND STORAGE TANK SOURCE

☒ **Not applicable (go to Section IV)**

Please answer the following questions if you are requesting to discharge wastewater associated with an underground storage tank system.

1. a. Wastewater from: ☐ Inside UST(s) ☐ UST system pit ☐ Excavation outside UST system pit ☐ Monitoring well ☐ Groundwater remediation system

   b. UST project involves wastewater from: ☐ UST(s) closed in place ☐ UST(s) removed ☐ Remediation ☐ Upgrade ☐ Maintenance activities ☐ Well monitoring ☐ Other, explain: _____

   c. If wastewater is from a closure project, how long has UST(s) been out of service: _____ years

2. a. State assigned UST site identification number: _____ ☐ Not applicable

   b. Number of USTs affected: _____ ☐ Unknown

   c. For the UST(s) involved, their state identification number(s): _____ ☐ Not applicable

   d. Service Station Identification Number, as applicable: _____

3. Tank contents/former contents: ☐ Gasoline ☐ #2 diesel ☐ Used oil ☐ Unknown ☐ Other: _____

IV. DISCHARGE LOCATION

1. ☒ On-site. Describe proposed point of entry to sewer and the discharge rate (must be a sanitary or combined sewer): _____
   Sample Point 005 Note: Range of discharge must not surcharge sewer line.

2. ☐ Haul to MSD Bissell Point Hauled Waste Receiving Station at 10 E. Grand, St. Louis, MO.

   a. Transporters Name: _____ and MSD Hauler ID Number: _____

   b. Hazardous Waste Certification:

   For wastewater which is hauled to MSD's Bissell Point Hauled Waste Receiving Station, I hereby certify that to the best of my knowledge and belief, the above hauled waste is not classified as a RCRA "hazardous waste" as defined by the MDNR in 10 CSR 25 or USEPA in 40 CFR Part 261.

   Applicant Name (print): Livi Isringhausen

   Signature: [signature] **Date:** 07/8/15

ADDITIONAL INFORMATION:

_____

V. APPLICANT SIGNATURE AND CERTIFICATION

This application must be signed by the applicant: either the source contact, or a contractor or agent directly responsible for site activities.

I hereby certify that I am directly responsible for activities at the site regarding the wastewater to be discharged, and to the best of my knowledge and belief, based on appropriate inquiry, the information in this application is true, complete, and accurate. The samples or analyses submitted are representative of the materials to be discharged. If granted approval to discharge, I agree to abide by the MSD Ordinances, and all applicable federal, state and local regulations. I agree to pay the costs of any pre-approval analyses performed by MSD and to pay any applicable disposal charges for the volume and strength of the wastes discharged.

Applicant Name (print): Livi Isringhausen

Signature: [signature] **Date:** 7/8/15

FOR MSD USE ONLY:

File Name: Washington University School of Medicine ID No. 1024353000 Sample Point No. 804

From: Pruitt, Tim
To: Isringhausen, Mary
Subject: Re: Glycol
Date: Wednesday, June 24, 2015 8:44:41 AM

It is coming from a system on the 5th floor of McDonnell Science. It's a reheat system that only serves the 5th floor.

Tim

Sent from my iPhone

On Jun 24, 2015, at 8:38 AM, Isringhausen, Mary <isringhausenm@wusm.wustl.edu> wrote:

> Where and what exactly is this coming from?
>
> ---
>
> **From:** Pruitt, Tim
> **Sent:** Tuesday, June 23, 2015 11:56 AM
> **To:** Isringhausen, Mary
> **Subject:** RE: Glycol
>
> We don't know. Sorry.
>
> Thanks,
> TIm
>
> ---
>
> **From:** Isringhausen, Mary
> **Sent:** Tuesday, June 23, 2015 11:43 AM
> **To:** Pruitt, Tim
> **Subject:** Glycol
>
> Is it ethylene glycol?

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

July 14, 2015

Eric Page
ENVIRONMENTAL OPERATIONS, INC.
1530 S. 2nd Street
St. Louis, MO 63104

Dear Mr. Page:

We have reviewed your application, submitted on behalf of the Washington University School of Medicine, dated July 10, 2015, requesting approval to discharge 30,000 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is groundwater/rainwater from an excavation pit associated with underground storage tank (UST) removal activities at the Storz Building in the Washington University School of Medicine complex located at 4570 Childrens Place, St. Louis, Missouri. Information provided on the application indicates that two heating oil USTs were formerly located onsite.

Based on the analytical results, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary sewer on site. The discharge into the sewer must be controlled at a rate that will not surcharge the lines in that area. **This approval is valid for 30 days from the date of this letter.**

You must be certain the waste is discharged into a sanitary sewer inlet only. This letter does not authorize any discharge to a separate storm sewer, or to any watercourse, as any such discharge would be in violation of state and federal laws. **Please notify me at the number below when the discharge is to commence, and please ensure the onsite personnel discharging the wastewater in question are provided with a copy of this letter.**

For billing purposes, you must confirm the volume of this wastewater discharged to us, in writing. This report is due no later than 28 days after the discharge event. Please refer to this letter and include the date of the discharge when providing that figure. You will be billed by invoice at the billing rate in effect at the time of discharge. The current rate, contained in MSD Ordinance 13758 is $3.21 per hundred cubic feet ($4.29 per thousand gallons). Using the proposed discharge volume provided in your application, it is estimated that you will be discharging approximately 40 hundred cubic feet. Please do not pay this amount until you receive our invoice.

This discharge has been approved based upon the information and sample analysis you provided, and is subject to the conditions stated above. This approval may be revoked by the District at any time if any of the information is found to be incorrect; or if the conditions of this approval are violated. Also, if the discharge causes any operational or maintenance problem within the District's collection or treatment system, or results in violations of any conditions of the District's NPDES permit, Environmental Operations, Inc. and the property owner, Washington University School of Medicine, will be considered responsible for damages.

If you have any questions, please call me at (314) 436-8755.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Steven M. Grace

Steve Grace
Environmental Assistant Engineer

bv

ec: Brian Gibson
Doug Mendoza

File: IU, WASHINGTON UNIVERSITY MEDICAL SCHOOL [1024353000], 660 S. Euclid Avenue, St. Louis

C1A

SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: WUSM-Storz Bldg. Evaluated by: SMG

Premise Address: 4570 Childrens Place Date: 7/14/15

Send approval letter to applicant

Application Dated: 7/10/15 Received: 7/13/15 All Requested Info. Received: 7/14/15

SOURCE FILING/DESCRIPTION

1 - Source in PIMS? (Y) / N |
2 - If No, on IU Cross-Ref list? * Y / N |
3 - If No, MSD Account # from E-CIS? Y / N |
4 - If none, on "Source" list (pre-IMS)? ** Y / N |
5 - If No, assigned SOUR# from PIMS. |

SOURCE TYPE (circle): (IU) / Dead IU / SD

INDUSTRY ID: 1024353000

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 805 Description: gw/rainwater from exc. pit assoc. w/ UST removal acts.

Normal WW flow from premise? (N/A) _____ ccf/month, _____GPD, _____GPH.

REGULATORY STATUS

Is waste a Hazardous Waste? (N) / Y _____

Categorical standards apply? (N) / Y _____

Contain PCB/ asbestos/ radioactive/ dioxin/ used oil? (N) / Y _____

Regulatory Agency Oversight? (N) / (Y) _____

DISCHARGE CONSIDERATIONS At MSD's connection:

Ordinance Limits (12559, p. 32) exceeded? (N) / Y _____

Ordinance other limits exceeded (dye, flash pt <140° F, temp >140° F, obstruction, nuisance foaming/odor, corrosion causing): (N) / Y _____

Water Quality Standard exceeded? (N) / Y _____

Fumes in sewer exceed PEL/TLV limits? (N) / Y _____

Vapors in sewer exceed 10% of LEL? (N) / Y _____

RECOMMENDATION: (APPROVE) / DENY (cc WWTP Mgr for timed discharge)

APPROVAL CONDITIONS:

Timed Discharge (COD/BOD/WQ/foam): (N) / Y Limit = _____ gal/hour

Require Treatment before Discharge? (N) / Y _____

Laboratory analysis fee due? (N) / Y $_____

SMR required? (N) / Y Frequency/analysis: _____

SMR log: (N/A) / Remediation.xls / Nonremediation.xls

Volume Billing applies (water unmetered or credited)? N / (Y)

Bill High Strength? (N) / Y Yes, If use >60,000 gal/month water ___and, > norm WW strgth

Surcharge calculation attached: N/A / N / (Y)

Expiration log updated: (N/A) / N / Y

O:\CostRecovery\Special Discharge\C1a.Checklist.doc

On-Site Special Discharge High Strength Flow Rate and Surcharge Calculator

1 GENERAL INFORMATION:

Date: 07/14/15
Calculated by: Steve Grace
Source name: STORZ BUILDING - WASHINGTON UNIVERSITY MEDICAL SCHOOL
Waste material: groundwater/rainwater from excavation pit during heating oil UST removal activities at Storz Build
Discharge volume: 30,000 gallons

2 STRENGTH INFORMATION:

Sample BOD =	0	mg/l =	0	lbs BOD to be discharged
Sample COD =	50	mg/l =	13	lbs COD to be discharged
Sample TSS =	161	mg/l =	for surcharge calculation only	

3 PLANT DATA: 2007

Treatment area: Bissell

	Flow (MGD)	BOD (mg/L)	COD (mg/L)	BOD (lb/hr)	COD (lb/hr)	Max Loading = BOD (lb/hr)	10% COD (lb/hr)
Bissell	**119**	**174**	**348**	**7,171**	**14,341**	**717**	**1,434**
Coldwater	23	226	452	1,768	3,535	177	354
Fenton	5	307	614	482	964	48	96
Grand Glaize	16	152	399	830	2,183	83	218
Lemay	122	81	228	3,438	9,610	344	961
Lower Meramec	10	124	364	452	1,326	45	133
Missouri River	28	281	561	2,732	5,465	273	546

4 MINIMUM REQUIRED FLOW RATE:

	BOD (hours)	BOD (gpm)	COD (hours)	COD (gpm)
Bissell	**0.00**	**0**	**0.01**	**57319**
Coldwater	0.00	0	0.04	14130
Fenton	0.00	0	0.13	3855
Grand Glaize	0.00	0	0.06	8727
Lemay	0.00	0	0.01	38410
Lower Meramec	0.00	0	0.09	5301
Missouri River	0.00	0	0.02	21842

5 SURCHARGE AND VOLUME BILLING

Is volume subject to billing? yes (yes/no)
Ratio of BOD/COD = 0.00

(Sample BOD) - 300 = 0 mg/l subject to surcharge
(sample COD) - 600 = 0 mg/l subject to surcharge
(sample TSS) - 300 = 0 mg/l subject to surcharge

If BOD/COD ratio <= 0.35, the following calculations use the COD value. Otherwise they use the BOD value

Current rates under Ordinance: 13758

Volume =	$	3.21	/CcF
BOD =	$	632.38	/ton
COD =	$	316.19	/ton
TSS =	$	251.88	/ton

Flow charge = $ 128.74 based on volume = 40.1 CcF
BOD surcharge = $ -
COD surcharge = $ -
TSS surcharge = $ -
Total discharge charge = $ 128.74
Customer charge = $ 128.74 DEC charges special discharge customers for total charges > $20.00
Approximate charge/gallon = $ 0.004

Comments

require volume report for billing purposes. Smg

Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103
MSD

APPLICATION FOR SPECIAL DISCHARGE APPROVAL

I. WASTEWATER SOURCE IDENTIFICATION:

Site Name: Storz Building
Premise Address: 4570 Childrens Place
City: St Louis State: Mo Zip: 63110
Owner: Washington University School of Med
Contact Person: Steve Sobo
Title: Director Design & Construct
Phone: 314 362-5201 Fax: 314 362-8342

II. APPLICANT (mailing information):

Applicant Name: Eric J. Page
Title: Vice President
Company Name: Environmental Operations, Inc
Mailing Address: 1530 S. 2nd Street
City: St Louis State: Mo Zip: 63104
Phone: 314 241-0900 Fax: 314 436-2900

III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):

1. Wastewater description/location: UST excavation at end of Childrens Place
2. Process/activity generating wastewater: Rain water in excavation
3. Physical and chemical composition: List all constituents, and known or potentially present regulated contaminants below.
   ☐ See separate listing enclosed, and/or ☒ See analytical results enclosed, and/or ☐ Material Safety Data Sheet enclosed.

DESCRIPTION	RANGE	UNIT

DESCRIPTION *(continued)*	RANGE	UNIT

4. Is this wastewater from a process subject to EPA's categorical standards in 40 CFR Subchapter N? ☐ Yes ☒ No
   a. If yes, the applicable standards are in: 40 CFR Part _____, Subpart _____ ☐ Existing source ☐ New source
5. Does this wastewater contain polychlorinated biphenyls, asbestos or radioactive material? ☐ Yes ☒ No
   a. If yes, describe: _____
6. Representative sample: ☒ Laboratory results attached, and/or ☐ Sample provided (1/2 gallon minimum, clear container)
   a. Sample collection point/location: From excavation Collection method: bailer
   b. Sampler's name/Co.: Jon Payne Environmental Operator Sample date/time: 7/6/15 12:45 Pm
   c. Attach chain of custody as available
7. Discharge will occur over the following time period: ☒ < 30 days ☐ ≥ Two years ☐ Other: _____
   a. Expected total volume of wastewater to be discharged over the time period above: 30,000 Gallons
   b. Proposed discharge volume: _____ Gallons, at a frequency of: ☐ One time ☐ Daily ☐ Weekly ☐ Monthly ☐ Once/three months ☐ Once/six months ☐ Other: _____
8. Pretreatment of wastewater prior to discharge: ☒ None ☐ Yes, describe: _____
   a. If yes, attach site plan, pretreatment system schematic, and design specifications.
9. Wastewater from a remediation project under: ☐ Superfund/CERCLA ☐ RCRA ☐ Voluntary program ☒ UST ☐ Not applicable
   a. If from a remediation project, briefly describe the past and present utilization of the property: Former heating oil USTs for boilers at Washington University School of Medicine

III.B. MATERIAL FROM UNDERGROUND STORAGE TANK SOURCE

☐ **Not applicable (go to Section IV)**

Please answer the following questions if you are requesting to discharge wastewater associated with an underground storage tank system.

1. a. Wastewater from: ☐ Inside UST(s) ☒ UST system pit ☐ Excavation outside UST system pit ☐ Monitoring well ☐ Groundwater remediation system

   b. UST project involves wastewater from: ☐ UST(s) closed in place ☒ UST(s) removed ☐ Remediation ☐ Upgrade ☐ Maintenance activities ☐ Well monitoring ☐ Other, explain: _____

   c. If wastewater is from a closure project, how long has UST(s) been out of service: 22 years

2. a. State assigned UST site identification number: _____ ☒ Not applicable

   b. Number of USTs affected: 2 ☐ Unknown

   c. For the UST(s) involved, their state identification number(s): _____ ☒ Not applicable

   d. Service Station Identification Number, as applicable: _____

3. Tank contents/former contents: ☐ Gasoline ☒ #2 diesel ☐ Used oil ☐ Unknown ☐ Other: _____

IV. DISCHARGE LOCATION

1. ☒ On-site. Describe proposed point of entry to sewer and the discharge rate (must be a sanitary or combined sewer): _____
   Combined sewer at end of Children's Place Note: Range of discharge must not surcharge sewer line.

2. ☐ Haul to MSD Bissell Point Hauled Waste Receiving Station at 10 E. Grand, St. Louis, MO.

   a. Transporters Name: _____ and MSD Hauler ID Number: _____

   b. Hazardous Waste Certification:

   For wastewater which is hauled to MSD's Bissell Point Hauled Waste Receiving Station, I hereby certify that to the best of my knowledge and belief, the above hauled waste is not classified as a RCRA "hazardous waste" as defined by the MDNR in 10 CSR 25 or USEPA in 40 CFR Part 261.

   Applicant Name (print): _____

   Signature: _____ **Date:** _____

ADDITIONAL INFORMATION:

_____

V. APPLICANT SIGNATURE AND CERTIFICATION

This application must be signed by the applicant: either the source contact, or a contractor or agent directly responsible for site activities.

I hereby certify that I am directly responsible for activities at the site regarding the wastewater to be discharged, and to the best of my knowledge and belief, based on appropriate inquiry, the information in this application is true, complete, and accurate. The samples or analyses submitted are representative of the materials to be discharged. If granted approval to discharge, I agree to abide by the MSD Ordinances, and all applicable federal, state and local regulations. I agree to pay the costs of any pre-approval analyses performed by MSD and to pay any applicable disposal charges for the volume and strength of the wastes discharged.

Applicant Name (print): Eric J. Page

Signature: [signature] **Date:** July 10, 2015

FOR MSD USE ONLY:

File Name: Washington University Medical School ID No. 1024353000 Sample Point No. 805

July 09, 2015

Eric Page
Environmental Operations, Inc.
1530 South Second Street, Suite 200
St. Louis, MO 63104
TEL: (314) 241-0900
FAX: (314) 436-2900

RE: Wash U/5711

WorkOrder: 15070260

Dear Eric Page:

TEKLAB, INC received 1 sample on 7/6/2015 2:12:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

MSD 045282

Teklab, Inc.
Environmental Laboratory

Report Contents

http://www.teklabinc.com/

Client: Environmental Operations, Inc.

Work Order: 15070260

Client Project: Wash U/5711

Report Date: 09-Jul-15

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Quality Control Results	6
Receiving Check List	13
Chain of Custody	Appended

Definitions

Client: Environmental Operations, Inc. **Work Order:** 15070260

Client Project: Wash U/5711 **Report Date:** 09-Jul-15

Abbr	Definition
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# - Unknown hydrocarbon	B - Analyte detected in associated Method Blank
E - Value above quantitation range	H - Holding times exceeded
I - Associated internal standard was outside method criteria	M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit	R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits	T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level	

Client: Environmental Operations, Inc.

Work Order: 15070260

Client Project: Wash U/5711

Report Date: 09-Jul-15

Cooler Receipt Temp: 20.82 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425	3920 Pintail Dr Springfield, IL 62711-9415	8421 Nieman Road Lenexa, KS 66214	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	dthompson@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2016	Collinsville
Kansas	KDHE	E-10374	NELAP	9/30/2015	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2016	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2016	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2015	Collinsville
Arkansas	ADEQ	88-0966		3/14/2016	Collinsville
Illinois	IDPH	17584		5/31/2015	Collinsville
Kentucky	KDEP	98006		12/31/2015	Collinsville
Kentucky	UST	0073		1/31/2016	Collinsville
Missouri	MDNR	00930		5/31/2015	Collinsville
Oklahoma	ODEQ	9978		8/31/2015	Collinsville

Teklab, Inc.
Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Environmental Operations, Inc. **Work Order:** 15070260

Client Project: Wash U/5711 **Report Date:** 09-Jul-15

Lab ID: 15070260-001 **Client Sample ID:** WS-1

Matrix: AQUEOUS **Collection Date:** 07/06/2015 12:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 1664A								
Hexane Extractable Material	NELAP	5		< 5	mg/L	1	07/07/2015 9:27	R206649
EPA 600 410.4								
Chemical Oxygen Demand	NELAP	50		< 50	mg/L	1	07/08/2015 13:38	R206681
STANDARD METHOD 4500-H B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		9.22		1	07/06/2015 21:28	R206587
STANDARD METHODS 2540 D								
Total Suspended Solids	NELAP	6		161	mg/L	1	07/06/2015 18:01	R206570
EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)								
Lead	NELAP	0.0150		0.0172	mg/L	1	07/07/2015 11:47	110362
EPA 600 624 (MODIFIED), VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Benzene	NELAP	2.0		ND	µg/L	1	07/07/2015 17:09	110417
Ethylbenzene	NELAP	5.0		ND	µg/L	1	07/07/2015 17:09	110417
Toluene	NELAP	5.0		ND	µg/L	1	07/07/2015 17:09	110417
Xylenes, Total	NELAP	5.0		ND	µg/L	1	07/07/2015 17:09	110417
Surr: 1,2-Dichloroethane-d4		74.7-129		94.1	%REC	1	07/07/2015 17:09	110417
Surr: 4-Bromofluorobenzene		86-119		90.7	%REC	1	07/07/2015 17:09	110417
Surr: Dibromofluoromethane		81.7-123		102.6	%REC	1	07/07/2015 17:09	110417
Surr: Toluene-d8		84.3-114		96.7	%REC	1	07/07/2015 17:09	110417

MSD 045286

Client: Environmental Operations, Inc. **Work Order:** 15070260

Client Project: Wash U/5711 **Report Date:** 09-Jul-15

EPA 1664A

Batch R206649 **SampType: MBLK** Units **mg/L**
SampID: MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Hexane Extractable Material	5		**< 5**						07/07/2015

Batch R206649 **SampType: LCS** Units **mg/L**
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Hexane Extractable Material	5		**43**	40.00	0	107.5	78	114	07/07/2015

Batch R206649 **SampType: LCSD** Units **mg/L** RPD Limit **18**
SampID: LCSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Hexane Extractable Material	5		**38**	40.00	0	96.0	43.00	11.30	07/07/2015

Batch R206649 **SampType: DUP** Units **mg/L** RPD Limit **18**
SampID: 15070181-001A-DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Hexane Extractable Material	6	R	**57**				30.91	59.75	07/07/2015

EPA 600 410.4

Batch R206681 **SampType: MBLK** Units **mg/L**
SampID: MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	50		**< 50**						07/08/2015

Batch R206681 **SampType: LCS** Units **mg/L**
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	50		**218**	207.0	0	105.5	90	110	07/08/2015

Batch R206681 **SampType: LCS** Units **mg/L**
SampID: LCS-R206681

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	50		**218**	207.0	0	105.5	90	110	07/08/2015

Batch R206681 **SampType: MS** Units **mg/L**
SampID: 15070327-004EMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	100		**1250**	1000	230.6	101.7	90	110	07/08/2015

Client: Environmental Operations, Inc. **Work Order:** 15070260

Client Project: Wash U/5711 **Report Date:** 09-Jul-15

EPA 600 410.4

Batch R206681 SampType: MSD Units **mg/L** RPD Limit **10**

SampID: 15070327-004EMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chemical Oxygen Demand	100		**1230**	1000	230.6	100.2	1247	1.17	07/08/2015

Batch R206681 SampType: MS Units **mg/L**

SampID: 15070418-001CMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	100		**1670**	1000	616.4	105.3	90	110	07/09/2015

Batch R206681 SampType: MSD Units **mg/L** RPD Limit **10**

SampID: 15070418-001CMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chemical Oxygen Demand	100		**1650**	1000	616.4	102.9	1670	1.46	07/09/2015

Batch R206681 SampType: MS Units **mg/L**

SampID: 15070418-002IMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	100		**1180**	1000	114.1	107.0	90	110	07/09/2015

Batch R206681 SampType: MSD Units **mg/L** RPD Limit **10**

SampID: 15070418-002IMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chemical Oxygen Demand	100		**1160**	1000	114.1	104.1	1184	2.49	07/09/2015

Batch R206681 SampType: MS Units **mg/L**

SampID: 15070493-003CMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	100		**1050**	1000	0	104.8	90	110	07/09/2015

Batch R206681 SampType: MSD Units **mg/L** RPD Limit **10**

SampID: 15070493-003CMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chemical Oxygen Demand	100		**1030**	1000	0	102.9	1048	1.87	07/09/2015

Batch R206681 SampType: MS Units **mg/L**

SampID: 15070493-004CMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	100		**1040**	1000	0	103.9	90	110	07/09/2015

Batch R206681 SampType: MSD Units **mg/L** RPD Limit **10**

SampID: 15070493-004CMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chemical Oxygen Demand	100		**1050**	1000	0	104.8	1039	0.93	07/09/2015

Teklab, Inc.
Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Environmental Operations, Inc.
Client Project: Wash U/5711

Work Order: 15070260
Report Date: 09-Jul-15

STANDARD METHOD 4500-H B, LABORATORY ANALYZED

Batch R206587 **SampType:** LCS Units
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lab pH	1.00		**6.98**	7.000	0	99.7	99.1	100.8	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit **10**
SampID: 15070260-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**9.20**				9.220	0.22	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit **10**
SampID: 15070116-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.77**				7.740	0.39	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit **10**
SampID: 15070116-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.72**				7.720	0.00	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit **10**
SampID: 15070116-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.40**				7.400	0.00	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit **10**
SampID: 15070131-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.37**				8.320	0.60	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit **10**
SampID: 15070131-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.83**				7.830	0.00	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit **10**
SampID: 15070131-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.97**				7.970	0.00	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit **10**
SampID: 15070132-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.84**				7.870	0.38	07/06/2015

Client: Environmental Operations, Inc. **Work Order:** 15070260

Client Project: Wash U/5711 **Report Date:** 09-Jul-15

STANDARD METHOD 4500-H B, LABORATORY ANALYZED

Batch R206587 **SampType:** DUP Units RPD Limit 10
SampID: 15070132-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.99**				7.990	0.00	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit 10
SampID: 15070134-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.53**				7.530	0.00	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit 10
SampID: 15070153-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.29**				8.280	0.12	07/06/2015

Batch R206587 **SampType:** DUP Units RPD Limit 10
SampID: 15070170-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.43**				8.460	0.36	07/06/2015

STANDARD METHODS 2540 D

Batch R206570 **SampType:** MBLK Units mg/L
SampID: MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Suspended Solids	6		**< 6**						07/06/2015

Batch R206570 **SampType:** LCS Units mg/L
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Suspended Solids	6		**105**	100.0	0	105.0	85	115	07/06/2015
Total Suspended Solids	6		**95**	100.0	0	95.0	85	115	07/06/2015
Total Suspended Solids	6		**105**	100.0	0	105.0	85	115	07/06/2015
Total Suspended Solids	6		**103**	100.0	0	103.0	85	115	07/06/2015

Batch R206570 **SampType:** DUP Units mg/L RPD Limit 15
SampID: 15070260-001A DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	6		**164**				161.0	1.85	07/06/2015

Batch R206570 **SampType:** DUP Units mg/L RPD Limit 15
SampID: 15070175-001A DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	12		**50**				54.00	7.69	07/06/2015

Teklab, Inc.
Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Environmental Operations, Inc.
Client Project: Wash U/5711

Work Order: 15070260
Report Date: 09-Jul-15

STANDARD METHODS 2540 D

Batch R206570 **SampType: DUP** Units **mg/L** RPD Limit **15**
SampID: 15070175-002B DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	2		**4**				4.300	7.23	07/06/2015

Batch R206570 **SampType: DUP** Units **mg/L** RPD Limit **15**
SampID: 15070232-001A DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	375		**10700**				11200	4.69	07/06/2015

Batch R206570 **SampType: DUP** Units **mg/L** RPD Limit **15**
SampID: 15070233-003A DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	375		**5060**				5334	5.22	07/06/2015

Batch R206570 **SampType: DUP** Units **mg/L** RPD Limit **15**
SampID: 15070239-001A DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	6		**14**				14.00	0.00	07/06/2015

EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)

Batch 110362 **SampType: MBLK** Units **mg/L**
SampID: MBLK-110362

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	0.0150		**< 0.0150**	0.01500	0	0	-100	100	07/07/2015

Batch 110362 **SampType: LCS** Units **mg/L**
SampID: LCS-110362

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	0.0150		**0.505**	0.5000	0	101.1	85	115	07/07/2015

Batch 110362 **SampType: MS** Units **mg/L**
SampID: 15070180-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	0.0150		**5.91**	0.5000	5.329	115.4	75	125	07/07/2015

Batch 110362 **SampType: MSD** Units **mg/L** RPD Limit **20**
SampID: 15070180-002AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lead	0.0150		**5.86**	0.5000	5.329	106.2	5.906	0.78	07/07/2015

Teklab, Inc.
Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Environmental Operations, Inc.

Work Order: 15070260

Client Project: Wash U/5711

Report Date: 09-Jul-15

EPA 600 624 (MODIFIED), VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 110417 **SampType: MBLK** Units **µg/L**

SampID: MBLK-R150707-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	2.0		**ND**						07/07/2015
Ethylbenzene	5.0		**ND**						07/07/2015
Toluene	5.0		**ND**						07/07/2015
Xylenes, Total	5.0		**ND**						07/07/2015
Surr: 1,2-Dichloroethane-d4			**45.3**	50.00		90.7	74.7	129	07/07/2015
Surr: 4-Bromofluorobenzene			**44.8**	50.00		89.6	86	119	07/07/2015
Surr: Dibromofluoromethane			**50.0**	50.00		100.1	81.7	123	07/07/2015
Surr: Toluene-d8			**47.7**	50.00		95.5	84.3	114	07/07/2015

Batch 110417 **SampType: LCSD** Units **µg/L** RPD Limit **40**

SampID: LCSD-R150707-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Benzene	2.0		**51.0**	50.00	0	101.9	50.20	1.52	07/07/2015
Ethylbenzene	5.0		**52.4**	50.00	0	104.8	51.58	1.58	07/07/2015
Toluene	5.0		**50.6**	50.00	0	101.2	49.67	1.82	07/07/2015
Xylenes, Total	5.0		**156**	150.0	0	104.3	154.1	1.53	07/07/2015
Surr: 1,2-Dichloroethane-d4			**44.9**	50.00		89.8			07/07/2015
Surr: 4-Bromofluorobenzene			**44.0**	50.00		87.9			07/07/2015
Surr: Dibromofluoromethane			**51.1**	50.00		102.2			07/07/2015
Surr: Toluene-d8			**47.9**	50.00		95.8			07/07/2015

Batch 110417 **SampType: LCS** Units **µg/L**

SampID: LCS-R150707-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	2.0		**50.2**	50.00	0	100.4	80	114	07/07/2015
Ethylbenzene	5.0		**51.6**	50.00	0	103.2	77.2	113	07/07/2015
Toluene	5.0		**49.7**	50.00	0	99.3	77.5	113	07/07/2015
Xylenes, Total	5.0		**154**	150.0	0	102.8	80.1	111	07/07/2015
Surr: 1,2-Dichloroethane-d4			**44.7**	50.00		89.5	74.7	129	07/07/2015
Surr: 4-Bromofluorobenzene			**44.3**	50.00		88.5	86	119	07/07/2015
Surr: Dibromofluoromethane			**51.4**	50.00		102.7	81.7	123	07/07/2015
Surr: Toluene-d8			**48.4**	50.00		96.9	84.1	114	07/07/2015

Batch 110417 **SampType: MS** Units **µg/L**

SampID: 15070190-001EMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	2.0		**55.3**	50.00	0	110.6	62.5	121	07/07/2015
Ethylbenzene	5.0		**58.8**	50.00	0	117.7	74.4	130	07/07/2015
Toluene	5.0		**54.4**	50.00	0	108.7	69.5	118	07/07/2015
Xylenes, Total	5.0		**111**	100.0	0	110.8	71.1	125	07/07/2015
Surr: 1,2-Dichloroethane-d4			**46.0**	50.00		92.0	74.7	129	07/07/2015
Surr: 4-Bromofluorobenzene			**45.6**	50.00		91.2	86	119	07/07/2015
Surr: Dibromofluoromethane			**49.2**	50.00		98.4	81.7	123	07/07/2015
Surr: Toluene-d8			**48.0**	50.00		95.9	84.3	114	07/07/2015

Client: Environmental Operations, Inc.

Work Order: 15070260

Client Project: Wash U/5711

Report Date: 09-Jul-15

EPA 600 624 (MODIFIED), VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 110417 **SampType: MSD** Units **µg/L** RPD Limit **20**

SampID: 15070190-001EMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Benzene	2.0		**48.5**	50.00	0	96.9	55.31	13.20	07/08/2015
Ethylbenzene	5.0		**50.0**	50.00	0	99.9	58.85	16.34	07/08/2015
Toluene	5.0		**45.8**	50.00	0	91.5	54.37	17.20	07/08/2015
Xylenes, Total	5.0		**94.7**	100.0	0	94.7	110.8	15.75	07/08/2015
Surr: 1,2-Dichloroethane-d4			**46.1**	50.00		92.1			07/08/2015
Surr: 4-Bromofluorobenzene			**46.0**	50.00		92.0			07/08/2015
Surr: Dibromofluoromethane			**49.1**	50.00		98.2			07/08/2015
Surr: Toluene-d8			**47.3**	50.00		94.6			07/08/2015

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Environmental Operations, Inc.

Client Project: Wash U/5711

Work Order: 15070260

Report Date: 09-Jul-15

Carrier: Employee

Received By: KM

Completed by: M. Kaminski
On: 06-Jul-15
Mary Anne Kaminski

Reviewed by: MLA
On: 06-Jul-15
Michael L. Austin

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 20.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☑	NA ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☐	

Any No responses must be detailed below or on the COC.

MSD 045294

CHAIN OF CUSTODY

pg. 1 of 1 Work order # 15070260

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client: Environmental Operations, Inc.
Address: 1530 South Second Street, Suite 200
City / State / Zip St. Louis, MO 63104
Contact: Jonathan Payne / ERIC PAGE **Phone:** (314) 241-0900
E-Mail: jonathan@environmentalops.com **Fax:**

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 20.8 °C
Preserved in: [ ] LAB [X] FIELD
FOR LAB USE ONLY
Lab Notes KM 7/6/15
Zero head space KM 7/6/15

Client Comments:

Are these samples known to be involved in litigation? If yes, a surcharge will apply [ ] Yes [ ] No
Are these samples known to be hazardous? [ ] Yes [ ] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. [ ] Yes [ ] No

Project Name/Number: WASH U / 5711
Sample Collector's Name: J.T. PAYNE
Results Requested: [ ] Standard [ ] 1-2 Day (100% Surcharge) [ ] Other ____ [X] 3 Day (50% Surcharge)
Billing Instructions: 5711

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: 1664	BTEX 624	COD	Lead 200_7	pH	TSS
15070260 001	WS-1	7/6/15 12:45	1	1		2	2				X						X	X	X	X	X	X

Relinquished By	Date/Time	Received By	Date/Time
[signature]	7/6/15 / 1412	[signature]	7/6/15 1412

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client.

BottleOrder: 26040

KM 7/6/15

MSD 045295

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

June 3, 2015

Livi Isringhausen
Environmental Compliance Manager
WASHINGTON UNIVERSITY MEDICAL SCHOOL
660 S. Euclid Avenue
St. Louis, MO 63110

Re: On-site discharge Request

Dear Ms. Isringhausen:

Thank you for your letter regarding the appropriateness of discharging approximately 100 gallons per week of 10% Formalin solution to the Metropolitan St. Louis Sewer District. We understand this discharge would be in addition to your other discharges currently in place at Sample Point 005.

We have reviewed the information you provided, as well as the MSD database. It appears that the addition of this wastewater discharge should result in a total facility discharge that continues to meet federal and MSD discharge standards. These standards are contained in MSD Ordinance 12559.

There are a number of factors that can affect discharge compliance with federal and MSD standards. The user has responsibility to maintain the facility in compliance with those limits. This letter does not allow the discharge of any material that would cause a violation of federal standards or the ordinance.

Thank you for your assistance in helping us to comply with state and federal regulations. If you have any questions, please contact me at 314.436.8720.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Mike Kynion
Environmental Engineering Associate

cc: Doug Mendoza
Scott Rehmer

File: WASHINGTON UNIVERSITY MEDICAL SCHOOL
Acct. # 1024353000

Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

A
MK
JR

May 26, 2015

Mr. Mike Kynion
Environmental Engineering Associate
Metropolitan St. Louis Sewer District
10 E Grand
St. Louis, MO 63147-2913

RE: Request for Approval to discharge of 10% formalin

Dear Mr. Kynion:

1024-3530-00

Washington University School of Medicine (WUSM) is requesting to discharge a 10% Formalin solution (remainder is water) into the MSD sanitary sewer system at the Medical School Campus located at 660 South Euclid Ave in St. Louis, MO. We estimate that WUSM will discharge approximately 100 gallons of wastewater per week.

If you have any questions or would like to discuss any of the above comments, please do not hesitate to contact me. I can be reached by telephone at 314-362-6735 or by email at isringhausenm@wusm.wustl.edu.

Best regards,

Livi Isringhausen
Environmental Compliance Manager

Cc:
Linda Vishino

RECEIVED
JUN 01 2015
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Washington University in St. Louis, Campus Box 8229, 660 South Euclid, St. Louis, MO 63110
(314) 362-6735, Fax (314) 362-1095, isringhausenm@wusm.wustl.edu, http://ehs.wustl.edu/

SR
5/5/15

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1 Effective: 1/1/2013 Expiration: 12/31/2017
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2015 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005			
Dates on Which Samples Were Collected		G: See attachec C: See attachec		G: See attachec C: See attachec		G: See attachec C: See attachec			
Times at Which Samples Were Collected		G: See attachec C: See attachec		G: See attachec C: See attachec		G: See attachec C: See attachec			
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow							Units
Flow	***	E	14,500	E	64,500	E	340,000		Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached	C	See attached		mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached	C	See attached		mg/L
Total Suspended Solids	****	C	See attached	C	See attached	C	See attached		mg/L
pH	5.5 - 11.5	G	See attached	G	See attached	G	See attached		pH
Oil & Grease	200	G	See attached	G	See attached	G	See attached		mg/L
Temperature	60	G	See attached	G	See attached	G	See attached		Celcius
Silver	0.5	C	See attached	C	See attached	C	See attached		mg/L
Total Phenol	7	G	See attached	G	See attached	G	See attached		mg/L

You must complete and sign the certification statements on the reverse side.

RECEIVED
MAY 01 2015
DIVISION OF
ENVIRONMENTAL COMPLIANCE

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Mary Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature _____ Date: 5/1/2015

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2015 (Jan-Mar) √ (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		006		007		008		009		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

Attention: Livi Isringhausen

April 28, 2015
Lab No. 15E-0706
Invoice No. 198525
P.O. No. 2920311Y

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP001, 4/21/15, 9:10 A.M.
WASTEWATER COMPOSITE, SP001, 4/21/15, 9:10 A.M – 3:30 P.M.

Units: mg/L except as noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.41	----	150.1	4/21/15
Temperature, °C (G)	21.4	----	170.1	4/21/15
Biological Oxygen Demand (C)	74	5	5210 B	4/28/15
Chemical Oxygen Demand (C)	161	10	5220 D	4/24/15
Total Suspended Solids (C)	58	5	160.2	4/24/15
Oil & Grease (G)	< 5	5	1664	4/24/15
Silver (C)	< 0.05	0.05	200.7	4/24/15
Total Phenol (G)	0.008	0.005	420.4	4/23/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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April 28, 2015
Lab No. 15E-0706
Invoice No. 198525
P.O. No.2920311Y

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP003, 4/22/15, 9:05 A.M.
WASTEWATER COMPOSITE, SP003, 4/22/15, 9:05 A.M. – 4:15 P.M.

Units: mg/L except as noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.89	----	150.1	4/22/15
Temperature, °C (G)	17.5	----	170.1	4/22/15
Biological Oxygen Demand (C)	232	5	5210 B	4/28/15
Chemical Oxygen Demand (C)	424	10	5220 D	4/24/15
Total Suspended Solids (C)	233	5	160.2	4/24/15
Oil & Grease (G)	11	5	1664	4/24/15
Silver (C)	< 0.05	0.05	200.7	4/24/15
Total Phenol (G)	0.046	0.010	420.4	4/24/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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April 28, 2015
Lab No. 15E-0706
Invoice No. 198525
P.O. No. 2920311Y

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP005, 4/21/15, 8:55 A.M.
WASTEWATER COMPOSITE, SP005, 4/21/15, 8:55 A.M. – 3:55 P.M.

Units: mg/L except as noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	10.26	----	150.1	4/21/15
Temperature, °C (G)	20.8	----	170.1	4/21/15
Biological Oxygen Demand (C)	61	5	5210 B	4/28/15
Chemical Oxygen Demand (C)	277	10	5220 D	4/24/15
Total Suspended Solids (C)	87	5	160.2	4/24/15
Oil & Grease (G)	7	5	1664	4/24/15
Silver (C)	< 0.05	0.05	200.7	4/24/15
Total Phenol (G)	0.27	0.050	420.4	4/24/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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April 28, 2015
Lab No. 15E-0706
Invoice No. 198525
P.O. No. 2920311Y

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP006, 4/21/15, 8:40 A.M.
WASTEWATER COMPOSITE, SP006, 4/21/15, 8:40 A.M: – 3:40 P.M.

Units: mg/L except as noted

ANALYTE	SP006	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	9.43	----	150.1	4/21/15
Temperature, °C (G)	17.8	----	170.1	4/21/15
Biological Oxygen Demand (C)	< 5	5	5210 B	4/28/15
Chemical Oxygen Demand (C)	18	10	5220 D	4/24/15
Total Suspended Solids (C)	12	5	160.2	4/24/15
Oil & Grease (G)	< 5	5	1664	4/24/15
Silver (C)	< 0.05	0.05	200.7	4/24/15
Total Phenol (G)	< 0.005	0.005	420.4	4/24/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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April 28, 2015
Lab No. 15E-0706
Invoice No. 198525
P.O. No. 2920311Y

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP007, 4/21/15, 9:15 A.M.
WASTEWATER COMPOSITE, SP007, 4/21/15, 9:15 A.M. – 4:00 P.M.

Units: mg/L except as noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.85	----	150.1	4/21/15
Temperature, °C (G)	24.3	----	170.1	4/21/15
Biological Oxygen Demand (C)	33	5	5210 B	4/28/15
Chemical Oxygen Demand (C)	85	10	5220 D	4/24/15
Total Suspended Solids (C)	43	5	160.2	4/24/15
Oil & Grease (G)	< 5	5	1664	4/24/15
Silver (C)	< 0.05	0.05	200.7	4/24/15
Total Phenol (G)	< 0.005	0.005	420.4	4/24/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Attention: Livi Isringhausen

April 28, 2015
Lab No. 15E-0706
Invoice No. 198525
P.O. No. 2920311Y

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP008, 4/22/15, 8:20 A.M.
WASTEWATER COMPOSITE, SP008, 4/22/15, 8:20 A.M. – 4:00 P.M.

Units: mg/L except as noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.93	----	150.1	4/22/15
Temperature, °C (G)	21.4	----	170.1	4/22/15
Biological Oxygen Demand (C)	325	5	5210 B	4/28/15
Chemical Oxygen Demand (C)	600	10	5220 D	4/24/15
Total Suspended Solids (C)	269	5	160.2	4/24/15
Oil & Grease (G)	< 5	5	1664	4/24/15
Silver (C)	< 0.05	0.05	200.7	4/24/15
Total Phenol (G)	0.051	0.005	420.4	4/24/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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April 28, 2015
Lab No. 15E-0706
Invoice No. 198525
P.O. No. 2920311Y

REPORT OF ANALYSIS

SAMPLE ID: WASTEWATER GRAB, SP009, 4/22/15, 8:15 A.M.
WASTEWATER COMPOSITE, SP009, 4/22/15, 8:15 A.M. – 4:05 P.M.

Units: mg/L except as noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.48	----	150.1	4/22/15
Temperature, °C (G)	24.6	----	170.1	4/22/15
Biological Oxygen Demand (C)	193	5	5210 B	4/28/15
Chemical Oxygen Demand (C)	309	10	5220 D	4/24/15
Total Suspended Solids (C)	204	5	160.2	4/24/15
Oil & Grease (G)	13	5	1664	4/24/15
Silver (C)	< 0.05	0.05	200.7	4/24/15
Total Phenol (G)	0.14	0.025	420.4	4/24/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/bnd

Steve Root, Manager
Environmental Testing

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SR

METROPOLITAN SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No: 1024-3530-00

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2015** [X] (JAN-MAR) [ ] (APR-JUN) [ ] (JUL-SEP) [ ] (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
C-14	0.0400
H-3	12.7367
I-125	0.1842
P-32	0.2817
S-35	0.0405
TOTAL ACTIVITY DISCHARGED	**13.2831**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

[KS] I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist

Telephone: (314) 362-4968

Signature: Karla Spafford

Date: 04/16/2015

RE: radrpt.doc 2/00

(Save PDF to G:\Radiation Safety\Waste\Low Level Liquid Disposals\...)

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL FACILITY INSPECTION REPORT

Company: Washington University Medical School — Account #: 1024353000
Premise Address: 660 S. Euclid — Zip Code: 63110
MSD Classes: SIU ☒ Non-Significant CIU ☐ CIU ☐ Surcharge ☐ Non-Toxic Process Water/Wastes ☐
Toxics-Bearing Waste ☒ No Process Discharge ☐ Multi-User ☐ Special Handling/Billing ☐
Company Representative: Livi Isringhausen
Title: Environmental Compliance Manager — Phone#: 314-362-6735
Inspector: Mike Kynion
Others Present: Ted Reising - Env. Professional IV
Inspection Date: 2/23/15 Time: From 08:40 AM To 11:05 AM (Last Insp. 2/26/14)

NOTE: ALL ITEMS ARE TO BE COMPLETED BASED ON EVENTS SINCE LAST INSPECTION. ANSWERS ARE BASED ON INFORMATION OBTAINED OR PROVIDED BY COMPANY DURING INSPECTION, AS WELL AS INFORMATION IN FILE.

***** DATABASE ALSO UPDATED WITH APPROPRIATE CHANGES - see attached database reports *****

1. A. ARE THERE ADDITIONAL NON-STORMWATER ACCOUNT NUMBERS? Yes☒ No☐
   List them, note any changes: 1024352900, 1024353200, 1024353300, 1024353900, 1037377700, 1048106300
   B. Did all acct no's have water usage on PIMS? Yes☒ No☐
   C. If no to B, explain: _____

2. PROCESSES & CLEANUP/WASHDOWN:

	Cont/ Batch?	Water/Liquids Used?	DISCHARGE Frequency (or how else disposed?)	Sample pt.
Research and testing laboratories	Batch	Yes	Daily	001, 003, 005, 007, 008, 009
Research mice and other animals (housing and care/ cage washing)	Batch	Yes	Daily	003, 005, 007, 008, 009
Hazardous material cleanup (lab pack, bulking, prep for shipments)	Batch	Yes	Daily	006
Kitchen services	Batch	Yes	Daily	005
	(None)	N/A		
	(None)	N/A		

3. PRETREATMENT (other than grease traps) - describe:

	Sample pt.
pH neutralization	001, 003, 005, 006, 007, 008, 009
Silver recovery	001, 003, 005, 008, 009

4. DOES COMPANY HAVE ANY GREASE TRAPS? Yes☒ No☐
If yes: A. List sample points: 005
   B. What is the frequency for cleaning & maintenance? Quarterly
   C. Are any additives used in traps? Yes☐ No☒
   D. If yes to C, was company warned MSD will bill them for blockages they cause? Yes☐ No☐
   E. Was company informed that MSD performs separate grease trap inspections? Yes☒ No☐

5. HAS COMPANY CONSTRUCTED NEW BLDGS/ADDITIONS WITH SEWERS SINCE LAST INSPECTION? Yes☒ No☐

If yes: A. Ask company: Did they notify MSD's Plan Review group? Unknown☐ Yes☒ No☐

B. If no or unknown, has inspector notified Plan Review group? Yes☐ No☐

C. Comments: Wash U Med School currently has two new buildings under construction (4522 and 4515 McKinley Avenue). According to the site contact, construction is anticipated to be complete by the Summer of 2015. The contact believes plan review has been contacted.

6. HAS COMPANY BEGUN DISCHARGING ANY NEW POLLUTANTS SINCE THE LAST INSPECTION? Yes☐ No☒

If yes: A. List pollutants & process: _____

B. Will MSD STP exceed existing NPDES discharge limit(s)? Yes☐ No☐

C. Will MSD STP's discharge exceed 0.1 mg/l for any new pollutant? Yes☐ No☐

(MSD must notify MDNR if B or C is yes and discharge will continue [40CFR122.42(b)].)

D. Comments: _____

7. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS THAT ARE "NOT APPLICABLE"? Yes☐ No☒

(including those that are 'No PSES' and 'General Stds Only')

If yes: A. List regulation & describe operations (including any discharge):

_____

B. Explain why it is N/A: _____

8. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS SUBJECT TO DISCHARGE LIMITS? Yes☐ No☒

If yes: A. List regulation & describe operations (including any discharge):

_____

B. Is maximum daily categorical discharge ≤ 100 GPD? (includes batch discharges) Yes☐ No☐

If yes to B: C. Batch ☐ or Continuous ☐? Volume verified how? _____

D. Does company ever discharge untreated, concentrated categorical wastewater? Yes☐ No☐

E. Was company in SNC during any part of the previous **24** months? Yes☐ No☐

F. Date of last NSCIU Certification Statement: _____ or not currently NSCIU ☐

(If no to B, yes to D or E, or Cert. Statement not submitted as required, company is not eligible to be an NSCIU)

9. HAS COMPANY CERTIFIED TO THE ABSENCE OF SPECIFIC CATEGORICAL POLLUTANTS? Yes☐ No☒

If yes: A. Certification date: _____

B. List absent pollutants: _____

C. Were all these pollutants non-detect in all monitoring since certification was approved? Yes☐ No☐

(If compared to intake water levels, explain details below)

If no to C: D. Explain: _____

E. Does Wastewater Discharge Permit need to be updated to remove detected pollutants? Yes☐ No☐

F. Comments: _____

10. DOES CATEGORICAL WASTEWATER COMBINE WITH NON-CATEGORICAL WW PRIOR TO SAMPLING? Yes☐ No☒

If yes: A. At which points? _____

B. Current applied factor: _____ Is it correct? Yes☐ No☐

C. If no, list correct factor/explain? _____

11. IS ANY WASTEWATER SUBJECT TO PRODUCTION ☐ OR MASS ☐ BASED STANDARDS? Yes☐ No☒

If yes: A. At which points? _____

B. Since calculation of the current limits, has the long term avg production rate or discharge volume changed by 20% or more? Yes☐ No☐

C. If yes to B, explain: _____

12. ARE ANY RADIOACTIVE MATERIALS HANDLED? Yes☒ No☐

If yes: A. Describe operations & disposal: Rad materials for lab research are collected from labs and sent to bldg 80/4500 Duncan for disposal. Some liquid rad waste is decayed on-site and sewered. Solids are hauled for disposal.

B. If non-exempt & disposed to sewer, does company submit quarterly reports to MSD? NA☐ Yes☒ No☐
(If No to B, write company & require quarterly reports of discharge to sewer – or have permit revised as needed)

C. Amount discharged in most recent four complete calendar quarters: 64.0447 mCi

D. Is company in compliance with requirements of sewer use ordinance prohibition? Yes☒ No☐

13. DOES COMPANY GENERATE WASTES/WASTEWATER BY GENETIC ENGINEERING RESEARCH? Yes☐ No☒

If yes: A. Does company render wastes/wastewater innocuous? Yes☐ No☐

B. If yes, describe how: _____

C. Does company have MSD authorization for disposal to sewer? NA☐ Yes☐ No☐

D. Most recent authorization date: _____

14. DOES PROCESS or P&E WASHDOWN WATER USE APPEAR EXCESSIVE? Yes☐ No☒
(IS COMPANY USING DILUTION TO MEET DISCHARGE LIMITATIONS?)

A. Explain how use was verified & any needed changes:
No excessive water usage was observed during the facility inspection. Process usage is generated from lab activities and animmal cage washing. The large volume usage is attributed to the numerous small labs across the campus. While each lab is relatively small and water usage is typically minimal, the combined usage totals a large volume. Based on water records and information provided by the site contact, the large volume water use appears consistent with the size of campus and activities performed.

15. BASED ON OBSERVATIONS DURING INSPECTION, DOES COMPANY APPEAR TO HAVE SOME WATER THAT IS NOT DISCHARGED TO SEWER? Yes☒ No☐

If yes: A. Describe: Evaporative loss from HVAC systems.

B. Was "Return Factor Program" brochure given to company? Yes☒ No☐
(regardless of whether some water is not discharged to sewer)

16. HAS COMPANY BEEN GRANTED A VARIANCE FROM DISCHARGE LIMITATIONS CONTAINED IN THE SEWER USE ORDINANCE? Yes☐ No☒

If yes: A. Pollutant(s) and variance limit: _____

B. Latest approval date: _____

C. Is the approved variance more than 5 years old? Yes☐ No☐
(If yes to C, a new variance must be requested – write company)

17. HAVE ANY NUMERICAL LIMITATIONS BEEN APPLIED TO COMPANY, IN ADDITION TO THOSE ALREADY CONTAINED IN THE SEWER USE ORDINANCE? Yes☐ No☒

If yes: A. Pollutant(s) and discharge limit: _____

B. Date originally applied: _____, or as part of variance above? ☐

18. HAS COMPANY EXCEEDED ORDINANCE DISCHARGE LIMITS SINCE LAST INSPECTION OR WITHIN THE LAST 12 MONTHS (if last insp <12 months ago)? Yes☒ No☐

If yes: A.

Pollutant	When	Sample Points	Is problem resolved? Y/N	Describe
Lead	7/29/14	005	Yes	During construction of a new cyclotron lead sheeting needed to be cut for radiation shielding. Construction crews were observed cutting the lead sheets on a dock area. The cutting operation was moved to the machine shop. Any future lead cutting will be conducted in the machine shop and any dust/debris from cutting will be collected and hauled off-site. Additional samples showed a return to compliance.
			N/A	
			N/A	
			N/A	
			N/A	

B. Comments: _____

19. HAS COMPANY EXCEEDED CATEGORICAL PRETREATMENT LIMITS SINCE THE LAST INSPECTION OR WITHIN LAST 12 MONTHS (if last insp <12 months ago)? NA☒ Yes☐ No☐

If yes: A.

Pollutant	When	Sample Points	Is problem resolved? Y/N	Describe
			N/A	
			N/A	
			N/A	
			N/A	
			N/A	

B. Comments: _____

20. HAVE THERE BEEN ANY PROBLEM DISCHARGES SINCE LAST INSPECTION? Yes☐ No☒

If yes: A. Upsets? ☐ Bypasses of pretreatment facilities? ☐
Spills? ☐ Slug discharges? ☐ Other? _____

B. Explain any marked: _____

21. COULD SPILLS OR LEAKS OF ANY PROCESS TANKS, OR STORAGE TANKS; OR STORED WASTES, OR STORED CHEMICALS EASILY REACH SANITARY SEWERS OR STORM DRAINS? Yes☐ No☒

If yes: A. What needs to be done?

_____

If no: B. How are they controlled?

Haz waste is stored and processed in Bldg 80 at 4500 Duncan Ave. Drums in the haz waste building are stored in a room with sloped floors or on containment pallets. Flammable cabinets and spill kits are available throughout the campus.

22. BASED ON OBSERVATIONS DURING INSPECTION, ARE THERE ANY AREAS WHERE COMPANY ACTIVITIES APPEAR TO IMPAIR STORMWATER RUNOFF? Yes☐ No☒

If yes: A. Describe: _____

B. What needs to be done? _____

C. Was "Illicit Stormwater Discharges" brochure given to company? Yes☒ No☐
(regardless of whether there are any problem areas)

23. DOES COMPANY HAVE ANY WRITTEN SLUG DISCHARGE CONTROL (INCLUDES SPILLS) PLANS [40CFR403.8(f)(2)(vi)]? Yes☒ No☐

If yes: A.

	Title (actual title, NOT "SPCCP")	Last Update
1.	SPCCP	2/13/14
2.		

B. Were Plans reviewed for completeness, especially regarding batch discharges/slugs and Q.19/20/21? (must be done) Yes☒ No☐

C. Are updates needed to existing Plans? (If yes, write company & require) Yes☐ No☒

D. Are any Plans needed (either in addition to those listed in Part A, or if there currently are no written control plans)? (If yes, write company & require) Yes☐ No☒

E. Explain why/why not for C or D: Plan covers emergency contact, spill response, spill containment, spill cleanup, etc.

24. DOES COMPANY HAVE ANY MAINTENANCE SHOP PARTS WASHERS? Yes☐ No☒

If yes: A. Parts washer solvent name: _____

B. Priority pollutants (or "none"): _____

C. How is spent solvent disposed? _____

(These solvents are not included in database's priority pollutants list, nor monitored for unless conditions show potential discharges)

25. ARE ANY ORGANICS OR SOLVENTS USED (OTHER THAN IN PARTS WASHERS)? Yes☒ No☐

If yes: A.

Solvent name/ components	Used for?	413/433/469 Process?	How disposed?	Priority Pollutant?
Multiple lab solvents (see PP list in PIMS)	laboratory reagents	Yes☐ No☒	Evaporates and hauled off-site	Yes☒ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐
		Yes☐ No☐		Yes☐ No☐

26. DOES COMPANY HAVE A 413/433/469-REGULATORY "SOLVENT MANAGEMENT PLAN"? Yes☐ No☒

(Applies if co. has 413/433/469 processes, whether or not solvents used)

If yes: A. Is it part of a Spill/Slug Control Plan listed above? Yes[1.☐ 2.☐] No☐

B. If no to A, date of last update for SMP: _____

C. Is there a copy of the Spill/Slug Plan or SMP in the files? Yes☐ No☐

D. Does SMP address all 413/433/469 solvents? (or verify "none" ☐) Yes☐ No☐

(If no to C or D, write company and require submittal and/or update)

27. ARE EMERGENCY NOTIFICATION PROCEDURES POSTED THAT INCLUDE MSD CONTACTS? Yes☒ No☐

A. Was company provided notification cards & told to post where emergency response personnel can locate them? Yes☒ No☐

(Must post if company generates process wastewater or stores chemicals of concern)

28. IS COMPANY REQUIRED TO SELF-MONITOR ANY OF THEIR DISCHARGES? Yes☒ No☐

If yes: A. Is requirement contained in permit ☒ or other document ☐.

B. If other document, date & description: _____

C. How frequently is sampling required? Quarterly

D. How frequently are reports required? Quarterly

E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐

F. If no, explain: _____

29. DOES COMPANY SELF-MONITOR ITS WASTEWATER DISCHARGE? Yes☒ No☐

If yes:
- A. Does sample collection time period match co's production shifts? Yes☒ No☐
- B. Are representative grab/comp samples collected? Yes☒ No☐
- C. Are EPA-approved 40 CFR 136 wastewater test methods used? Yes☒ No☐
- D. Does company measure pH and/or temperature itself? Yes☐ No☒
- If yes: E. Have the company show equipment and procedure (meters, calibration stds, etc.). Is measurement performed properly? Yes☐ No☐
- F. If no to A,B,C, or E, explain needed changes: _____

30. DOES COMPANY CONTINUOUSLY MONITOR AT SAMPLE POINT AND KEEP A PERMANENT RECORD FOR: pH ☐, TEMP ☐, LEL ☐? Yes☐ No☒

If yes:
- A. At which SPs? _____
- B. Does company submit quarterly summaries? Yes☐ No☐
- C. If no, explain: _____

31. DOES MSD SPLIT SAMPLES WITH THE COMPANY? Yes☐ No☒

If yes:
- A. Is company having the samples analyzed Yes☐ No☐
- B. How does company insure proper preservation, holding times & analytical methods? _____
- C. Has company submitted results of all split sample analyses since the last insp? Yes☐ No☐
- D. Have results been submitted within 28 days of the collection's calendar quarter? Yes☐ No☐
- E. If no to C, or D, explain: _____
- F. Does company still want to split samples? Yes☐ No☐
- G. Comments: _____

32. IS COMPANY REQUIRED TO REGULARLY SUBMIT ANY REPORTS OTHER THAN SELF-MONITORING REPORTS? Yes☒ No☐

If yes:
- A. Is requirement contained in permit ☒ or other document ☐.
- B. If other document, date & description: _____
- C. What is required to be reported? Rad material discharge
- D. How frequently are reports required? Quarterly
- E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐
- F. If no, explain: _____

33. IS COMPANY UNDER ANY ENVIRONMENTAL ENFORCEMENT ORDERS OR REQUIREMENTS TO SUBMIT COMPLIANCE SCHEDULE REPORTS? Yes☐ No☒

If yes:
- A. Type and date: _____
- B. Have the reports & actions been on-time & complete? Yes☐ No☐
- C. If no, explain: _____

34. ASK COMPANY: IS COMPANY IN COMPLIANCE W/APPLICABLE NESHAP REGULATIONS FOR WW DISCHARGES? Yes☒ No☐
[To see if 40CFR63 applies to MSD plant, per §§63.1580(b) & 63.1582(a). Some MDNR-issued Title V air permits for specific processes allow pre-approved WW discharge. City/County-issued air permits are not NESHAP permits.]

If no:
- A. Describe: _____
- B. Was MDNR Air Pollution Control informed? (must be done) Yes☐ No☐

35. DOES COMPANY RETAIN ALL WASTEWATER RECORDS FOR AT LEAST 5 YEARS? Yes☒ No☐

If no:
- A. How long does company retain records? _____
- B. Was company told to retain for at least 5 years, per ordinance? Yes☐ No☐
- C. Where are they kept? In the site contact's office files at 4500 Duncan

36. IS COMPANY CLASSIFIED AS A SIGNIFICANT INDUSTRIAL USER (SIU)? Yes☒ No☐

If yes: A. Check & explain applicable criteria:

- ☐ Process subject to categorical stds under 40 CFR 403.6. Which cat. stds? _____
- ☒ Process discharge => 25,000 GPD Total process volume: 185,927 GPD
- ☐ Process discharge => 5% of TP ADW hydraulic capacity TP ADW hydraulic capacity: _____. Percent: _____
- ☐ Process discharge => 5% of TP ADW organic capacity Which organic pollutant? _____ TP ADW organic capacity: _____. Percent: _____
- ☐ Reasonable potential for adverse effect on operations Why? _____
- ☐ Reasonable potential for violating PT std or req't Which ones & why? _____

B. Does company own its bldg (is it listed as the owner in E-CIS)? Yes☒ No☐

If no: C. What is Bldg owner name (use DBA if avail.)? _____ (check E-CIS CAPS Customer Info)

D: What is Bldg owner mailing address? _____ (check E-CIS CAPS Customer Info)

37. DO MSD CLASSIFICATIONS NEED TO BE REVISED? Yes☐ No☒

If yes: A. Indicate correct classifications:

SIU ☐ Non-Significant CIU ☐ CIU ☐ Surcharge ☐ Non-Toxic Process Water/Wastes ☐
Toxics-Bearing Waste ☐ No Process Discharge ☐ Multi-User ☐ Special Handling/Billing ☐

B. Explain changes: _____

38. IS COMPANY CLASSIFIED AS "Multi-User"? Yes☐ No☒

If yes: A. Is company's discharge segregated from other tenants' discharge? Yes☐ No☐

B. If no to A, does the company own the bldg/receive the MSD bills? Yes☐ No☐

C. If yes to B, was company informed it is responsible for total discharge, or else must provide segregated sample points? Yes☐ No☐

D. If no to B, are any Process/P&E Wash-type wastes discharged? Yes☐ No☐

E. If yes to D, are the wastes completely innocuous? Yes☐ No☐
(And explain why/why not: _____)

F. If yes to D, and no to E, company must accept responsibility or provide segregated SP.
Acceptance letter date: _____ Or write company with requirement ☐

G. If no to D or yes to E, are limits "alert only" on PIMS? Yes☐ No☐

H. Comments: _____

39. IS COMPANY CLASSIFIED AS "Special Handling/Billing"? Yes☐ No☒

If yes: A. Why? _____

B. Are any changes needed to reasons/details? Yes☐ No☐

C. If yes, explain: _____

D. Were company records reviewed & verified for special handling/billing reports? NA☐ Yes☐ No☐

40. SAMPLE POINTS

						DJ(y/n)
SP #	001	Fed.Reg.	N/A	Components:	Sanitary + CT blowdown + Process + Lab waste + P&E wash + RO reject + Storm water	No
SP #	003	Fed.Reg.	N/A	Components:	Sanitary + P&E wash + Process + Lab waste + CT blowdown + Storm water	No
SP #	005	Fed.Reg.	N/A	Components:	Sanitary + Process + Lab waste + P&E wash + RO reject + Kitchen waste + Boiler blowdown + CT blowdown + Storm water	No
SP #	006	Fed.Reg.	N/A	Components:	Sanitary + P&E wash + Storm water	No
SP #	007	Fed.Reg.	N/A	Components:	Sanitary + P&E wash + Lab waste + CT Blowdown + Storm water	No
SP #	008	Fed.Reg.	N/A	Components:	Sanitary + P&E wash + Lab waste + RO reject + Process + CT blowdown + Storm water	No
SP #	009	Fed.Reg.	N/A	Components:	Sanitary + Process + Lab waste + P&E wash + RO reject + CT blowdown + Storm water	No

41. ARE ANY SAMPLE POINTS TRAPPED VENTS? Yes☒ No☐

If yes: A. List SPs: SP006

B. Was co. informed that T-vents are preferred, and told why? Yes☒ No☐

42. ARE DISCHARGES AT ANY SPs SMALL/IRREGULAR ENOUGH TO ALLOW GRAB SAMPLES? Yes☐ No☒

If yes: A. List SPs and reasons: _____

43. ARE THERE ANY UNSAMPLED DISCHARGES? (list each lateral separately) Yes☐ No☒

Dummy SP #		Components:	
Dummy SP #		Components:	

If yes: A. Was company informed that SPs may be required in the future if the discharges change? Yes☐ No☐

B. Are all unsampled discharges very low flow and/or innocuous? Yes☐ No☐

C. If No to B, explain:_____

(Must also write company and require installation of SP)

44. DO ANY SAMPLE POINTS (including Unsampled/Dummy SPs) RECEIVE STORMWATER? Yes☒ No☐

If yes: A. List Sample Points: SP001, SP003, SP005, SP006, SP007, SP008, SP009

45. WERE ALL SAMPLE POINTS (except Dummy SPs) OPENED & INSPECTED? No SPs☐ Yes☒ No☐

A. If any SPs cannot be located or opened, explain: _____

B. If any SP descript's need to be changed, explain: _____

C. Was ANY grease or other problem/debris observed in any SP? Yes☐ No☒

D. If yes to C, list SPs & describe: _____

E. If yes to C, was company directed to take corrective actions? Yes☐ No☐

46. REVIEW THE SAMPLE POINT MAP! Last map revision date: 7/9/12

A. Is the map correct and accurate in all its details? Yes☒ No☐

B If no, what changes are needed: _____

47. DO INSTRUCTIONS FOR "Contact Prior to Sampling" or FIELD VISIT "Special Instructions" NEED REVISION? Yes☐ No☒

If yes: A. List needed changes: _____

USE THIS SPACE FOR ANY OTHER COMMENTS/OBSERVATIONS PERTINENT TO YOUR INSPECTION OF THIS SITE.

Washington University Medical School is comprised of multiple research laboratories and teaching facilities. Lab waste, hazardous materials and radioactive materials are sent to the Hazardous Materials Building located at 4500 Duncan Avenue or Building 80 where the waste is processed and shipped out.

Sample points and associated buildings:

SP001: 4533 Clayton, HAP, 4560 Clayton, CID

SP003: Wohl Clinic, Wohl Hospital, Barnard, Renard, Mallinkrodt Institute of Radiology, Maternity, McMillian, IWJ, West

SP005: Power Plant, FLTC, North, Cancer Research, South, Becker Library, McDonnell Medical Sciences, Olin, East McDonnell, Library Annex, Biotech, East, East Imaging

SP006: Hazardous Material Building and Environmental Offices

SP007: Biomedical Computing Lab, Shriner's, SIRF, SIRF east

SP008: BJCIH, Peds, CSRB North Tower, Northwest Tower

SP009: BJCIH

Lab waste is temporarily stored in hoods or drums with containment depending on the size of the lab. Lab waste is reportedly picked up daily at various campus locations. Once the waste has been picked up by the Environmental Dept. it is transported to Building 80 at 4500 Duncan Avenue. The waste is reportedly disposed of or hauled off site within 10 days of being received by the Environmental Department.

Wash U Med School currently has two buildings under construction. One is a new research building located at 4515 McKinley and the other is a new Environmental Compliance Office and Hazardous Waste Building located at 4522 McKinley. Both buildings will reportedly be complete by the Summer of 2015. The current Environmental Compliance Office/Haz Waste Building located at 4500 Duncan will be vacated and all operations currently conducted at 4500 Duncan will move to the new building at 4522 McKinley.

A new sample point map and corresponding updates will be needed once construction for the new buildings is complete. Wash U will contact MSD closer to completion of construction.

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

INDUSTRIAL USER CLASSIFICATIONS

01/12/1999	**SIU**
06/09/1998	**TOX**

WUNNENBERG INFO.

Base Map 19G3
Wun: St. Louis City & Co.
Grid: J 20 Page 26

SIU CRITERIA

PR25 Process Disch => 25,000 GPD

GENERAL INFORMATION

Office Mailing Address
660 S. Euclid Ave., Campus Box 8229
St. Louis, MO. 63110

Billing Address
660 S. Euclid Ave.
St Louis, MO. 63110

INSPECTION INFORMATION

Next Due	Insp Rslt	
02/23/2015	RIN	Mike Kynion

PERMIT INFORMATION

Issue Date: 01/01/2013
Expire Date: 12/31/2017
Extended Date:
Writer Scott Rehmer

IUQ INFORMATION

IUQ Recvd Date: 08/19/2002
Reviewer: Fabian Grabski
IUQ Recvd Date: 06/28/2007
Reviewer: James Goodall
IUQ Recvd Date: 07/13/2012
Reviewer: Jason Gill

CONTACTS

BILL	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
FLD1	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
	Livi Isringhausen	Environmental Compliance Manager	CELL	(618) 410-6140 Ext.
	Livi Isringhausen	Environmental Compliance Manager	FAX	(314) 362-1095 Ext.
FLD2	Linda Vishino	Environmental Compliance Officer	OFF	(314) 935-7864 Ext.
FLD3	Ted Reising	Environmental Professional IV	CELL	(314) 277-0423 Ext.
	Ted Reising	Environmental Professional IV	OFF	(314) 362-1095 Ext.
OFF1	Livi Isringhausen	Environmental Compliance Manager	OFF	(314) 362-6735 Ext.
	Livi Isringhausen	Environmental Compliance Manager	FAX	(314) 362-1095 Ext.

OPERATIONAL INFORMATION

Work Days: 7

				S	M	T	W	T	F	S
1	6,500	09:00AM	8.0	Y	Y	Y	Y	Y	Y	Y
2	600	06:00PM	8.0	Y	Y	Y	Y	Y	Y	Y

Total Emp: 7,100 **Hrs:** 16.0

OTHER AGENCIES INFORMATION

01/03/1997	Nuclear Regulatory Commission	24-00167-11
01/04/1997	MDNR - Hazardous Waste Program	001591
01/05/1997	EPA - Hazardous Waste Program	MOT300010857
09/28/2005	MSD - Billing Account Number	00246499
09/28/2005	MSD - Billing Account Number	00246498
09/28/2005	MSD - Billing Account Number	00246504
09/28/2005	MSD - Billing Account Number	00246496
09/28/2005	MSD - Billing Account Number	00246495
09/28/2005	MSD - Billing Account Number	00377308
07/21/2011	MSD - Billing Account Number	00473620

NON-SEWERED WASTE

On-Site Storage Y **On-Site Disposal** N **Off-Site Disposal** Y

07/13/2012	Other	Lab chemicals/reagents	13,500	LBS
07/13/2012	Solvents/Thinners		53,000	LBS
07/13/2012	Radioactive Waste		1,500	LBS
07/13/2012	Paints or Paint Sludges		2,700	LBS
07/13/2012	Organic Compounds		27,000	LBS
07/13/2012	Kitchen/Food Service Grease		6,000	LBS
07/13/2012	Infectious Waste		370,200	LBS
07/13/2012	Equipment Oils and/or Grease		8,000	LBS

COMMENTS

RAW MATERIALS

EFF DATE	MATERIAL_DESCRIPTION	QUANTITY	UNIT
05/07/2004	Laboratory chemicals & reagents		

SIC INFORMATION

SIC	DESCRIPTION
0279	Animal Specialties, NEC
8221	Colleges, Universities & Professional Schools
8733	Noncommercial Research Organizations

PRODUCTS

EFF DATE	DESCRIPTION	UNIT	AVG_PROD	MAX_PROD
05/07/2004	Medical school			
05/07/2004	Research institution			
05/07/2004	Research animal care & housing			

Report No. PIMS012A 03/04/2015 12:29:19 pm
Data Date & Time: 03/04/2015 12:29:19 pm

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

SEWER ACCOUNTS

Sewer Accounts
1024353000
1024352900
1024353200
1024353300
1024353900
1037377700
1048106300

WATER CONSUMPTION AND WASTEWATER DISCHARGE

Start Date = 03/04/2014 12:29:14PM End Date = 03/04/2015 12:29:14PM Wdays Cdays

Acct. No.			Consumption CCF's	Consumption Gallons		Wdays	Cdays	Discharge Gal/ Wday	Discharge Gal/ Cday
1024352900			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024352900	02/14/2014	05/12/2014	1,259	1,259	A	88	88	88	
1024352900	05/13/2014	08/08/2014	1,453	2,712		88	88	176	
RF 1.00	**Acct. Total**		2,712	2,028,717		176	176	11,527	11,527
1024353000			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024353000	02/13/2014	05/01/2014	8,714	8,714	A	78	78	78	
1024353000	05/02/2014	07/31/2014	14,286	23,000		91	91	169	
RF 0.90	**Acct. Total**		23,000	17,205,196		169	169	91,625	91,625
1024353200			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024353200	02/14/2014	05/12/2014	17,440	17,440	A	88	88	88	
1024353200	05/13/2014	08/08/2014	28,895	46,335		88	88	176	
1024353200	08/09/2014	11/14/2014	29,258	75,593		98	98	274	
RF 0.68	**Acct. Total**		75,593	56,547,495		274	274	140,337	140,337
1024353300			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024353300	02/28/2014	05/02/2014	1,000	1,000	A	64	64	64	
1024353300	05/03/2014	08/05/2014	500	1,500		95	95	159	
1024353300	08/06/2014	11/04/2014	500	2,000		91	91	250	
RF 1.00	**Acct. Total**		2,000	1,496,104		250	250	5,984	5,984
1024353900			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1024353900	02/25/2014	05/19/2014	2	2	A	84	84	84	
RF 1.00	**Acct. Total**		2	1,496		84	84	18	18
1037377700			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1037377700	02/07/2014	05/02/2014	3,450	3,450	A	85	85	85	
1037377700	05/03/2014	08/05/2014	8,185	11,635		95	95	180	
1037377700	08/06/2014	11/03/2014	5,928	17,563		90	90	270	
RF 0.77	**Acct. Total**		17,563	13,138,037		270	270	37,468	37,468
1048106300			**CCF's**	**Gallons**				**Gal/ Wday**	**Gal/ Cday**
1048106300	02/07/2014	05/02/2014	19,570	19,570	A	85	85	85	
1048106300	05/03/2014	08/05/2014	21,343	40,913		95	95	180	
1048106300	08/06/2014	11/03/2014	18,892	59,805		90	90	270	
RF 1.00	**Acct. Total**		59,805	44,737,250		270	270	165,694	165,694
	Facility Total		180,675						

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH	Treatment Area	Bissell Point
01	Sanitary Or Combined	20G2 232C	Trunk Sewer	37 - Western Mill Creek

Description Lateral from buildings located S of McKinley Av & E of Euclid Av

Sewer Route S on Taylor to Clayton Av, E to Boyle, N to Duncan then E to trunk to treatment plant

SAMPLE POINT NO. 001 Ordinance **NPDES Outfall No.**

Description Flow from W in MH 30' N, 10' W of NE corner of building 27 (in alley)

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Reject Water		3,518	GPD		GPD	D	7/13/12
Plant & Equipment Washdown		468	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	671	GPD		GPD	D	7/13/12
Sanitary		5,199	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Research labs	1,733	GPD		GPD	D	7/13/12
Cooling Tower Blowdown		3,250	GPD		GPD	D	2/27/13
	Total Flow Avg =	**14,839**		**Max =**			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH	Treatment Area	Bissell Point
02	Sanitary Or Combined	19G3 229C	Trunk Sewer	37 - Western Mill Creek

Description Lateral from buildings N&S of Scott Av & E of Euclid

Sewer Route S on Taylor to Clayton Av, E to Boyle, N to Duncan then E to trunk to treatment plant

SAMPLE POINT NO. 005 Ordinance **NPDES Outfall No.**

Description MH 200' W of Taylor Ave. on S side of Scott Ave. in street

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Reject Water		32,761	GPD		GPD	D	7/13/12
Boiler Blowdown		39,666	GPD		GPD	D	7/13/12
Plant & Equipment Washdown		1,996	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	840	GPD		GPD	D	7/13/12
Sanitary		75,445	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care	93,406	GPD		GPD	D	7/13/12
Kitchen Waste		9,176	GPD		GPD	D	7/13/12
Cooling Tower Blowdown		88,038	GPD		GPD	D	2/27/13
	Total Flow Avg =	**341,328**		**Max =**			

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH	Treatment Area	Lemay
03	Sanitary Or Combined	19G3 543C	Trunk Sewer	79 - River des Peres - Upper

Description Lateral N from Building 14 W of Euclid Av to courtyard

Sewer Route W across S Kingshighway Blvd into Forest Park to trunk to treatment plant

SAMPLE POINT NO. 003 Ordinance **NPDES Outfall No.**

Description Flow from S in MH N of building 14 in drive, 6' S of O2 tanks

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment Washdown		2,179	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	546	GPD		GPD	D	7/13/12
Sanitary		31,974	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Research labs & animal care	23,284	GPD		GPD	D	7/13/12
Cooling Tower Blowdown		6,120	GPD		GPD	D	2/27/13

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**
Premise Address 660 S. Euclid Ave. St. Louis MO. 63110

Total Flow Avg = **64,103** **Max =**

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH	Treatment Area	Bissell Point
04	Sanitary Or Combined	19G3 259C	Trunk Sewer	37 - Western Mill Creek

Description 8" lateral E from Building 80 at Taylor and Parkview to an unnamed street

Sewer Route N to Parkview to Duncan, E to trunk to treatment plant

SAMPLE POINT NO. 006 Ordinance **NPDES Outfall No.**

Description 6" trapped clay pipe 13' N, 9' E of SE corner of building 80

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment Washdown		485	GPD		GPD	D	7/13/12
Sanitary		549	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12

Total Flow Avg = **1,034** **Max =**

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH	Treatment Area	Bissell Point
05	Sanitary Or Combined	20G2 235C	Trunk Sewer	37 - Western Mill Creek

Description Multiple lines from Bldg 63 N to McKinley

Sewer Route E on McKinley to Taylor, S to Clayton, E to Boyle, N to Duncan, then E to trunk to treatment plant

SAMPLE POINT NO. 007 Ordinance **NPDES Outfall No.**

Description Manhole in sidewalk E of Bldg 63; 111' N, 2' E of SE corner of building

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Plant & Equipment Washdown		7,462	GPD		GPD	D	7/13/12
Sanitary		5,248	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care	10,327	GPD		GPD	D	7/13/12
Cooling Tower Blowdown		413	GPD		GPD	D	2/27/13

Total Flow Avg = **23,450** **Max =**

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH	Treatment Area	Lemay
06	Sanitary Or Combined	19G3 492C	Trunk Sewer	82 - Euclid

Description Line exiting N side of Bldg 4 (425 S. Euclid) to main on Children's Pl.

Sewer Route Flow N from bldg to main on Children's Pl, E across Kingshighway to trunk sewer, S along RDP to STP

SAMPLE POINT NO. 008 Ordinance **NPDES Outfall No.**

Description MH in plaza 27' W, 27' N of NE bldg corner

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Reject Water		33,618	GPD		GPD	D	7/13/12
Plant & Equipment Washdown		4,472	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	6,412	GPD		GPD	D	7/13/12
Sanitary		49,681	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care	16,560	GPD		GPD	D	7/13/12
Cooling Tower Blowdown		31,057	GPD		GPD	D	2/27/13

Total Flow Avg = **141,800** **Max =**

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**

Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

CONNECTION and SAMPLE POINT INFORMATION

LATERAL NO.	Lateral Type	DSMH	Treatment Area	Lemay
07	Sanitary Or Combined	19G3 187C	Trunk Sewer	82 - Euclid

Description Line exiting E side of Bldg 4 (425 S. Euclid) to main on Euclid

Sewer Route Flow E from bldg to main on Euclid, E on Children's Pl. across Kingshighway, S to trunk along RDP to STP

SAMPLE POINT NO. 009 Ordinance **NPDES Outfall No.**

Description MH in E plaza 36' N, 27' E of S NE bldg

Discharge Components	Process Description	Avg Flow	Unit	Max Flow	Unit	RUD	Effective Date
Regeneration/Reject Water		33,618	GPD		GPD	D	7/13/12
Plant & Equipment Washdown		4,472	GPD		GPD	D	7/13/12
Process Waste	Photographic & teaching labs	6,412	GPD		GPD	D	7/13/12
Sanitary		49,681	GPD		GPD	D	7/13/12
Storm Water		0	GPD		GPD	D	7/13/12
Laboratory Waste	Lab research & animal care	16,560	GPD		GPD	D	7/13/12
Cooling Tower Blowdown		31,057	GPD		GPD	D	2/27/13
	Total Flow Avg =	**141,800**		**Max =**			

PRETREATMENT TYPES

SP	EFF DATE	TYPE	DESCRIPTION
001	09/02/1998	DC32	Metallic Replacement
001	07/13/2012	DC37	pH Adjustment/Neutralization
003	09/02/1998	DC32	Metallic Replacement
003	09/02/1998	DC37	pH Adjustment/Neutralization
005	07/17/2007	DC32	Metallic Replacement
005	07/17/2007	DC37	pH Adjustment/Neutralization
005	06/16/1999	DC28	Grease Trap
006	05/08/2001	DC37	pH Adjustment/Neutralization
007	07/17/2007	DC37	pH Adjustment/Neutralization
008	07/13/2012	DC37	pH Adjustment/Neutralization
008	07/13/2012	DC32	Metallic Replacement
009	07/13/2012	DC32	Metallic Replacement
009	07/13/2012	DC37	pH Adjustment/Neutralization

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
PRIMARY MSD ACCOUNT NO. **1024353000**

Premise Address 660 S. Euclid Ave.
St. Louis MO. 63110

PRIORITY POLLUTANTS

Pollutant Description	Status	Pollutant Description	Status	Pollutant Description	Status
Cyanide (Total)	KP	Asbestos (Fibrous)	SP	Antimony (Total)	KP
Silver (Total)	KP	Selenium (Total)	KP	Copper (Total)	KP
Cadmium (Total)	KP	Beryllium (Total)	KP	Zinc (Total)	KP
Thallium (Total)	KP	Nickel (Total)	KP	Mercury (Total)	KP
Lead (Total)	KP	Chromium (Total)	KP	Arsenic (Total)	KP
Phenol	KP	Isophorone	KP	4-Nitrophenol	KP
2,4-Dinitrophenol	SP	2-Chlorophenol	KP	Pyrene	KP
Pentachlorophenol	KP	Nitrobenzene	KP	Hexachlorocyclopentadiene	KP
Hexachlorobenzene	SP	Gamma-BHC	KP	Benzo (A) Pyrene	KP
Benzidine	KP	Aldrin	KP	Acrolein	KP
Toluene	KP	Methylene Chloride	KP	Chlorobenzene	KP
1,1,1-Trichloroethane	SP	Chloroform	KP	Carbon Tetrachloride	KP
Benzene	KP	1,2-Dichloroethane	KP	1,1,2-Trichloroethane	SP
Acenaphthylene	KP	Acenaphthene	KP	2,4,6-Trichlorophenol	SP
2,4-Dinitrotoluene	KP	1,2-Diphenylhydrazine	KP	Bis (2-Chloroethoxy) Methane	SP
Anthracene	KP	2,6-Dinitrotoluene	SP	2,4-Dichlorophenol	SP
2-Nitrophenol	KP	Phenanthrene	KP	Naphthalene	KP
Hexachloroethane	KP	Heptachlor Epoxide	KP	Diethyl Phthalate	KP
Dieldrin	KP	Chlordane	SP	Bis (2-Chloroisopropyl) Ether	SP
Bis (2-Chloroethyl) Ether	SP	1,2-Dichlorobenzene	KP	Trichloroethene	SP
Ethylbenzene	KP	Bromoform	KP	Acrylonitrile	KP
1,4-Dichlorobenzene	KP	1,1,2,2-Tetrachloroethane	KP		

EXTRA STRENGTH SURCHARGE INFORMATION

PIMS FACILITY CONTACTS

For Account Number Selected **1024353000** **WASHINGTON UNIVERSITY MEDICAL SCHOOL**
Located at 660 S. Euclid Ave.
St. Louis MO 63110

Address Type / Contact Type	Contact Name	Contact Title	Email	Signatory	Phone Type	Number	Ext.
Billing Address							
Billing Contact	Livi Isringhausen	Environmental Compliance Manager		Y	OFF	(314)362-6735	
Office Mailing Address							
Office Contact - Primary	Livi Isringhausen	Environmental Compliance Manager		Y	FAX	(314)362-1095	
Office Contact - Primary	Livi Isringhausen	Environmental Compliance Manager		Y	OFF	(314)362-6735	
Premise Address							
Field Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wusm.wustl.edu	Y	CELL	(618)410-6140	
Field Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wusm.wustl.edu	Y	FAX	(314)362-1095	
Field Contact - Primary	Livi Isringhausen	Environmental Compliance Manager	isringhausenm@wusm.wustl.edu	Y	OFF	(314)362-6735	
Field Contact 1st Alt	Linda Vishino	Environmental Compliance Officer		Y	OFF	(314)935-7864	
Field Contact 2nd Alt	Ted Reising	Environmental Professional IV	reisingt@wusm.wustl.edu	N	CELL	(314)277-0423	
Field Contact 2nd Alt	Ted Reising	Environmental Professional IV	reisingt@wusm.wustl.edu	N	OFF	(314)362-1095	

MSD 045324

PIMS
REPORT OF FIELD SAMPLING REQUIREMENTS
WASHINGTON UNIVERSITY MEDICAL SCHOOL

Account No Entered **1024353000**

SPN	PREMISE ADDRESS	CITY	ST	ZIP
	660 S. Euclid Ave.	St. Louis	MO	63110

001 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2015
	T237000	pH	Once/year	Grab	06/30/2015
	T247000	Temperature	Once/year	Grab	06/30/2015
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2015
	T257000	Total Phenols	Once/year	Grab	06/30/2015
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2015
Semi-Volatile Organics - Base/Neutrals	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2015
Semi-Volatile Organics - Acids	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2015
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl	Once/year	Grab	06/30/2015

003 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2015
	T237000	pH	Once/year	Grab	06/30/2015
	T247000	Temperature	Once/year	Grab	06/30/2015
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2015
	T257000	Total Phenols	Once/year	Grab	06/30/2015
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2015
Semi-Volatile Organics - Base/Neutrals	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2015
Semi-Volatile Organics - Acids	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2015
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl	Once/year	Grab	06/30/2015

005 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2015
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2015
	T237000	pH	Once/year	Grab	06/30/2015
	T247000	Temperature	Once/year	Grab	06/30/2015
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2015
	T257000	Total Phenols	Once/year	Grab	06/30/2015
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2015
Semi-Volatile Organics - Base/Neutrals	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2015
Semi-Volatile Organics - Acids	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2015
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl	Once/year	Grab	06/30/2015

006 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2015
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2015
	T237000	pH	Once/year	Grab	06/30/2015
	T247000	Temperature	Once/year	Grab	06/30/2015
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2015
	T257000	Total Phenols	Once/year	Grab	06/30/2015
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015

Account No Entered **1024353000**

SPN	PREMISE ADDRESS		CITY	ST	ZIP
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2015
Semi-Volatile Organics - Base/Neutrals	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2015
Semi-Volatile Organics - Acids	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2015
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl	Once/year	Grab	06/30/2015

007 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2015
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2015
	T237000	pH	Once/year	Grab	06/30/2015
	T247000	Temperature	Once/year	Grab	06/30/2015
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2015
	T257000	Total Phenols	Once/year	Grab	06/30/2015
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2015
Semi-Volatile Organics - Base/Neutrals	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2015
Semi-Volatile Organics - Acids	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2015
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl	Once/year	Grab	06/30/2015

008 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2015
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2015
	T237000	pH	Once/year	Grab	06/30/2015
	T247000	Temperature	Once/year	Grab	06/30/2015
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2015
	T257000	Total Phenols	Once/year	Grab	06/30/2015
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
Phenolic Organics - Acids	T991000	Phenolic Organics - Acids	Once/year	Grab	06/30/2015
Semi-Volatile Organics - Base/Neutrals	T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs	06/30/2015
Semi-Volatile Organics - Acids	T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs	06/30/2015
Volatile Organics	T996000	Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl	Once/year	Grab	06/30/2015

009 Project Code: IM = IPD - Company - MSD

Pollutant Group	Poll Code	Pollutant Description	Frequency	Sample Type	End Date
	T208000	Biochemical Oxygen Demand (5 Day)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T213000	Chemical Oxygen Demand	Once/year	Comp-Time 04 Hrs	06/30/2015
	T234000	Oil and Grease (Total)	Once/year	Grab	06/30/2015
	T237000	pH	Once/year	Grab	06/30/2015
	T247000	Temperature	Once/year	Grab	06/30/2015
	T256000	Total Suspended Solids	Once/year	Comp-Time 04 Hrs	06/30/2015
	T257000	Total Phenols	Once/year	Grab	06/30/2015
	T335000	Chromium (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T339000	Copper (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T368000	Lead (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T377000	Nickel (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T393000	Silver (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015
	T403000	Zinc (Total)	Once/year	Comp-Time 04 Hrs	06/30/2015

PIMS
REPORT OF FIELD SAMPLING REQUIREMENTS
WASHINGTON UNIVERSITY MEDICAL SCHOOL

Account No Entered **1024353000**

SPN	PREMISE ADDRESS	CITY	ST	ZIP	
Phenolic Organics - Acids T991000	Phenolic Organics - Acids	Once/year	Grab		06/30/2015
Semi-Volatile Organics - Base/Neutrals T994000	Semi-Volatile Organics - Base/Neutrals	Once/year	Comp-Time 04 Hrs		06/30/2015
Semi-Volatile Organics - Acids T995000	Semi-Volatile Organics - Acids	Once/year	Comp-Time 04 Hrs		06/30/2015
Volatile Organics T996000	Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl	Once/year	Grab		06/30/2015

SR
2/10

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1 Effective: 1/1/2013 Expiration: 12/31/2017
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2015 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		001		003		005			
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached			
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached			
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow							Units
Flow	***	E	14,500	E	64,500	E	340,000		Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached	C	See attached		mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached	C	See attached		mg/L
Total Suspended Solids	****	C	See attached	C	See attached	C	See attached		mg/L
pH	5.5 - 11.5	G	See attached	G	See attached	G	See attached		pH
Oil & Grease	200	G	See attached	G	See attached	G	See attached		mg/L
Temperature	60	G	See attached	G	See attached	G	See attached		Celcius
Silver	0.5	C	See attached	C	See attached	C	See attached		mg/L
Total Phenol	7	G	See attached	G	See attached	G	See attached		mg/L

You must complete and sign the certification statements on the reverse side.

RECEIVED
JAN 28 2015
DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Washington University School of Medicine
Permit No: 1024353000-1
Premise Address: 660 South Euclid Ave., St. Louis, MO, 63110
Monitoring Period: 2015 √ (Jan-Mar) (Apr-June) (July-Sept) (Oct-Dec)
Samples Collected By: St. Louis Testing Laboratories
Analysis Performed By: St. Louis Testing Laboratories

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD Sample Point Reference Number		006		007		008		009		
Dates on Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
Times at Which Samples Were Collected		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		G: See attached C: See attached		
PARAMETER	LIMIT	Record Sample Types (G,C,M, or E) And Results Below G=grab, C-composite, M=measured flow, E=estimated flow								Units
Flow	***	E	950	E	23,500		131,850		131,850	Gal/Day
Biological Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Chemical Oxygen Demand	****	C	See attached	C	See attached		See attached		See attached	mg/L
Total Suspended Solids	****	C	See attached	C	See attached		See attached		See attached	mg/L
pH	5.5 - 11.5	G	See attached	G	See attached		See attached		See attached	pH
Oil & Grease	200	G	See attached	G	See attached		See attached		See attached	mg/L
Temperature	60	G	See attached	G	See attached		See attached		See attached	Celcius
Silver	0.5	C	See attached	C	See attached		See attached		See attached	mg/L
Total Phenol	7	G	See attached	G	See attached	G:	See attached	G:	See attached	mg/L

You must complete and sign the certification statements on the reverse side.

RECEIVED
JAN 23 2015
DIVISION OF
ENVIRONMENTAL CONTROL

Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 21, 2015
Lab No. 15E-0115
Invoice No.194501
P.O. No. 2920311Y

Attention: Livi Isringhausen

REPORT OF TESTS

SAMPLE ID: WASTEWATER GRAB, SP001, 1/21/15, 9:55 A.M.
WASTEWATER COMPOSITE, SP001, 1/21/15, 8:55 A.M. – 3:45 P.M.

Units: mg/L Except As Noted

ANALYTE	SP001	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.00	----	150.1	1/21/15
Temperature, °C (G)	21.5	----	170.1	1/21/15
Biological Oxygen Demand (C)	113	5	5210 B	1/27/15
Chemical Oxygen Demand (C)	304	10	5220 D	1/22/15
Total Suspended Solids (C)	156	5	160.2	1/23/15
Oil & Grease (G)	8	5	1664	1/22/15
Silver (C)	< 0.01	0.01	200.8	1/26/15
Total Phenol (G)	0.137	0.02	420.4	1/22/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 21, 2015
Lab No. 15E-0115
Invoice No.194501
P.O. No. 2920311Y

Attention: Livi Isringhausen

REPORT OF TESTS

SAMPLE ID: WASTEWATER GRAB, SP003, 1/20/15, 9:50 A.M.
WASTEWATER COMPOSITE, SP003, 1/20/15, 9:50 A.M. – 3:50 P.M.

Units: mg/L Except As Noted

ANALYTE	SP003	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.53	----	150.1	1/20/15
Temperature, °C (G)	12.5	----	170.1	1/20/15
Biological Oxygen Demand (C)	153	5	5210 B	1/27/15
Chemical Oxygen Demand (C)	470	10	5220 D	1/22/15
Total Suspended Solids (C)	392	5	160.2	1/23/15
Oil & Grease (G)	14	5	1664	1/22/15
Silver (C)	0.018	0.01	200.8	1/26/15
Total Phenol (G)	0.029	0.02	420.4	1/22/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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St. Louis, MO 63110

January 21, 2015
Lab No. 15E-0115
Invoice No.194501
P.O. No. 2920311Y

Attention: Livi Isringhausen

REPORT OF TESTS

SAMPLE ID: WASTEWATER GRAB, SP005, 1/20/15, 9:30 A.M.
WASTEWATER COMPOSITE, SP005, 1/20/15, 9:30 A.M. – 3:30 P.M.

Units: mg/L Except As Noted

ANALYTE	SP005	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.98	----	150.1	1/20/15
Temperature, °C (G)	18.2	----	170.1	1/20/15
Biological Oxygen Demand (C)	96	5	5210 B	1/27/15
Chemical Oxygen Demand (C)	188	10	5220 D	1/22/15
Total Suspended Solids (C)	42	5	160.2	1/23/15
Oil & Grease (G)	23	5	1664	1/22/15
Silver (C)	< 0.01	0.01	200.8	1/26/15
Total Phenol (G)	0.025	0.02	420.4	1/22/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

Attention: Livi Isringhausen

January 21, 2015
Lab No. 15E-0115
Invoice No.194501
P.O. No. 2920311Y

REPORT OF TESTS

SAMPLE ID: WASTEWATER GRAB, SP006, 1/21/15, 8:44 A.M.
WASTEWATER COMPOSITE, SP006, 1/21/15, 8:44 A.M. – 2:44 P.M.

Units: mg/L Except As Noted

ANALYTE	SP006	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.59	----	150.1	1/21/15
Temperature, °C (G)	21.5	----	170.1	1/21/15
Biological Oxygen Demand (C)	122	5	5210 B	1/27/15
Chemical Oxygen Demand (C)	242	10	5220 D	1/22/15
Total Suspended Solids (C)	34	5	160.2	1/23/15
Oil & Grease (G)	< 5	5	1664	1/22/15
Silver (C)	< 0.01	0.01	200.8	1/26/15
Total Phenol (G)	< 0.005	0.005	420.4	1/22/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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WASHINGTON UNIVERSITY
Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 21, 2015
Lab No. 15E-0115
Invoice No.194501
P.O. No. 2920311Y

Attention: Livi Isringhausen

REPORT OF TESTS

SAMPLE ID: WASTEWATER GRAB, SP007, 1/20/15, 9:18 A.M.
WASTEWATER COMPOSITE, SP007, 1/20/15, 9:18 A.M. – 3:40 P.M.

Units: mg/L Except As Noted

ANALYTE	SP007	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	7.95	----	150.1	1/20/15
Temperature, °C (G)	21.1	----	170.1	1/20/15
Biological Oxygen Demand (C)	68	5	5210 B	1/27/15
Chemical Oxygen Demand (C)	156	10	5220 D	1/22/15
Total Suspended Solids (C)	154	5	160.2	1/23/15
Oil & Grease (G)	10	5	1664	1/22/15
Silver (C)	< 0.01	0.01	200.8	1/26/15
Total Phenol (G)	0.008	0.005	420.4	1/22/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 21, 2015
Lab No. 15E-0115
Invoice No.194501
P.O. No. 2920311Y

Attention: Livi Isringhausen

REPORT OF TESTS

SAMPLE ID: WASTEWATER GRAB, SP008, 1/21/15, 9:30 A.M.
WASTEWATER COMPOSITE, SP008, 1/21/15, 9:30 A.M. – 3:30 P.M.

Units: mg/L Except As Noted

ANALYTE	SP008	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.55	----	150.1	1/21/15
Temperature, °C (G)	16.8	----	170.1	1/21/15
Biological Oxygen Demand (C)	924	50	5210 B	1/27/15
Chemical Oxygen Demand (C)	1720	40	5220 D	1/22/15
Total Suspended Solids (C)	527	10	160.2	1/23/15
Oil & Grease (G)	22	5	1664	1/22/15
Silver (C)	0.01	0.01	200.8	1/26/15
Total Phenol (G)	0.032	0.02	420.4	1/22/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

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Campus Box 8229
660 South Euclid Ave.
St. Louis, MO 63110

January 21, 2015
Lab No. 15E-0115
Invoice No.194501
P.O. No. 2920311Y

Attention: Livi Isringhausen

REPORT OF TESTS

SAMPLE ID: WASTEWATER GRAB, SP009, 1/21/15, 9:10 A.M.
WASTEWATER COMPOSITE, SP009, 1/21/15, 9:10 A.M. – 3:10 P.M.

Units: mg/L Except As Noted

ANALYTE	SP009	MQL	METHOD NUMBER	DATE OF ANALYSIS
pH (Std. pH Units) (G)	8.45	----	150.1	1/21/15
Temperature, °C (G)	21.9	----	170.1	1/21/15
Biological Oxygen Demand (C)	310	5	5210 B	1/27/15
Chemical Oxygen Demand (C)	684	10	5220 D	1/22/15
Total Suspended Solids (C)	313	5	160.2	1/23/15
Oil & Grease (G)	18	5	1664	1/22/15
Silver (C)	0.048	0.01	200.8	1/26/15
Total Phenol (G)	0.037	0.02	420.4	1/22/15

MQL: Minimum Quantitative Limit

(C)-Composite
(G)-Grab

SR/bnd

Steve Root, Manager
Environmental Testing

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PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS**.

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below:
	I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
	Print or type name of signing official: Livi Isringhausen
	Title: Environmental Compliance Manager Telephone: 314-362-6735
	Signature: Date: 1/28/2015

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DIVISION OF
ENVIRONMENTAL QUALITY

METROPOLITAN SEWER DISTRICT

INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

1024-3530-00

PART I: IDENTIFYING INFORMATION

Company Name: Washington University Medical School

Permit No:

Premise Address: 660 South Euclid, St. Louis, MO 63110

Reporting Period: **2014** ☐ (JAN-MAR) ☐ (APR-JUN) ☐ (JUL-SEP) ☒ (OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
C-14	0.0900
Ca-45	0.0200
H-3	22.0627
I-125	0.1065
P-32	0.1863
S-35	0.1641
TOTAL ACTIVITY DISCHARGED	**22.6295**

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under Item A.
Everyone must complete the information under Items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☐ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of law that this document and all atachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/Type name of signing official: Karla Spafford

Title: Radiation Safety Specialist

Telephone: (314) 362-4968

Signature:

Date: 01/20/2015

RE: radrpt.doc 2/00

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JAN 21 2015

DIVISION OF
ENVIRONMENTAL COMPLIANCE

ACCOUNT NUMBER: **10243530-00**

COMPANY NAME: **WASHINGTON UNIV MED SCH**

CORRESPONDENCE

FROM 01-24-11 THRU 12-21-14

X	CORRESPONDANCE LOCATED IN OVERFLOW INDUSTRY FILE

ACCOUNT NUMBER: **10243530-00**

COMPANY NAME: **WASHINGTON UNV MEDICAL**

CORRESPONDENCE

FROM 02-27-01 THRU 10-25-10

X	CORRESPONDANCE LOCATED IN OVERFLOW FILE

10-07-15 Moved to ARCHIVED IU files. MI

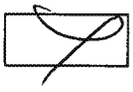
MSD

ACCOUNT NUMBER: 5112-2162-00

COMPANY NAME: WASHINGTON UNIV MEDICAL SCHOOL
660 South Euclid, Box 8229
St. Louis, MO 63110

CORRESPONDENCE

FROM 1993 **THRU** 2000



CORRESPONDENCE LOCATED IN O~~VERFLOW FILE~~

Archive files

f://form

Washington University in St. Louis
ENVIRONMENTAL HEALTH & SAFETY

✓SR
✓JAL

Washington University Medical School
1024353000-00

June 22, 2017

Scott Rehmer
Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913

RE: Discharge Permit No: 1024353000-1.1 for premise at: 660 South Euclid Ave. St. Louis, MO 63110

Dear Mr. Rehmer,

Enclosed is Washington University School of Medicine's Industrial User Questionnaire that is required for the renewal of WUSM's Wastewater Discharge permit. Our current permit expires on December 31. 2017.

If during the course of the review questions arise please contact me at by email at isringhausenm@wustl.edu or by phone at 314-602-8551. I will be out of the office starting July 18, 2017 and hopefully returning the middle of August. During this period, I will be working part time from home and will be available to answer any questions.

Sincerely,

Livi Isringhausen
Environmental Compliance Manager

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DIVISION OF
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Washington University in St. Louis, Campus Box 8229, 660 South Euclid, St. Louis, MO 63110
(314) 362-6735, Fax (314) 362-1095, isringhausenm@wusm.wustl.edu, http://ehs.wustl.edu/

FOR MSD USE ONLY		Category
Account Number:	102435300	SIU
TA:	Bissell Pt.	NONSIU
TS:	W. Mill Creek	CIU
Reviewer:	JAG	NONTOX
Date:	7/11/17	TOXIC
		SUR
		NOPROC
		MULTI

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
INDUSTRIAL USER QUESTIONNAIRE

Note to Signing Official: In accordance with Title 40 of the Code of Federal Regulations Part 403, Section 403.14, information and data provided in this questionnaire, which identifies the nature and frequency of discharge, shall be available to the public without restriction. Requests for confidential treatment of other information shall be governed by procedures specified in 40 CFR Part 2. Should a discharge permit be required for your facility, the information in this questionnaire will be used to develop the permit.

SECTION A - GENERAL INFORMATION

1. Company Name: Washington University School of Medicine
2. Mailing Address: 660 South Euclid Ave Campus Box 8229
   City: St. Louis State Missouri Zip Code 63310
3. Premise Address: 660 South Euclid Ave
   City: St. Louis State Missouri Zip Code 63110
4. Person Authorized to Sign Reporting Documents (see note after Section H):
   Name:
   Title: Phone Number
5. Check One: (●) Existing Discharge ( ) Proposed Discharge
   If proposed, indicate discharge start date:
6. Shift Information:
   a. Number of shifts per work day: 2 and work days per week: 7
   b. Average number of employees per shift: 1st 8,500 2nd 600 3rd Total: 9,100
   c. Shift start times: 1st 9:00 AM (HH:MM AM/PM) 2nd 6:00 PM (HH:MM AM/PM) 3rd (HH:MM AM/PM)

SECTION B - PRODUCT OR SERVICE INFORMATION

1. Briefly describe the primary manufacturing or service activities at the premise address and list the applicable SIC number for each activity:

	PRIMARY ACTIVITY	SIC NUMBER
a.	Animal Specialities	0279
b.	College, Universities & Professional Schools	8221
c.	Non Commercial Research Organization	8733
d.		
e.		
f.		

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MSD 045344

Company Name: Washington University School of Medicine
Premise Address: 660 South Euclid Ave

SECTION B - PRODUCT OR SERVICE INFORMATION (Continued)

2. Are primary activities generally batch or continuous processes ? ◉ batch ○ continuous

3. Principal raw materials used: Varies

4. Principal products produced: Varies

5. Check all activities which are conducted at your premise in addition to the primary activities described in B.1 above Indicate the SIC number, if known. Do not check activities which are already included in B.1.

ACTIVITY (with related 40 CFR Part)	SIC NO.	ACTIVITY (with related 40 CFR Part)	SIC NO.
☐ a. Adhesive and Sealants Mfg.		☐ nn. Nonferrous Metals Mfg. (421)	
☐ b. Aluminum Forming (467)		☐ oo. Oil and Gas Extraction (435)	
☐ c. Asbestos Mfg. (427)		☐ pp. Ore Mining and Dressing (440)	
☐ d. Battery Mfg. (461)		☐ qq. Organic Chem/Plastics/Synthetic Fibers Mfg (414)	
☐ e. Carbon Black Mfg. (458)		☐ rr. Paint Formulating (446)	
☐ f. Cement Mfg. (411)		☐ ss. Painting, Finishing or Paint Stripping	
☐ g. Centralized (non-Haz.) Waste Treatment (437)		☐ tt. Parts Washing	
☐ h. Coal Mining (434)		☐ uu. Paving and Roofing Mat'ls (Tars & Asphalt) (443)	
☐ i. Coil Coating (465)		☐ vv. Pesticide Chem Mfg/Formulating/Packaging (455)	
☐ j. Concentrated Animal Feeding Operations (412)		☐ ww. Petroleum Refining (419)	
☐ k. Concentrated Aquatic Animal Production (451)		☐ xx. Pharmaceutical Mfg. (439)	
☐ l. Copper Forming (468)		☐ yy. Phosphate Mfg. (422)	
☐ m. Dairy Products Processing (405)		☐ zz. Photographic Processing (459)	
☐ n. Drum Reconditioning		☐ aaa. Plastic Molding and Forming (463)	
☐ o. Electrical and Electronic Components (469)		☐ bbb. Porcelain Enameling (466)	
☐ p. Electroplating (413)		☐ ccc. Printing and Publishing	
☐ q. Explosives Mfg. (457)		☐ ddd. Pulp, Paper and Paperboard Mfg. (430)	
☐ r. Ferroalloy Mfg. (424)		☐ eee. Q.C. Laboratory	
☐ s. Fertilizer Mfg. (418)		☐ fff. R & D Laboratory	
☒ t. Food Preparation		☐ ggg. Radioactive Materials Processing	
☐ u. Fruit and Vegetable Processing (407)		☐ hhh. Repair Shop, Garage	
☒ v. General Offices		☐ iii. Rubber and Rubber Products Mfg. (428)	
☐ w. Glass Mfg. (426)		☐ jjj. Seafood Processing (408)	
☐ x. Grain Milling (406)		☐ kkk. Soap and Detergent Mfg. (417)	
☐ y. Gum and Wood Chemical Mfg. (454)		☐ lll. Solvent Recycling	
☒ z. Haz. Waste Treatment, Storage or Disposal		☐ mmm. Steam Electric Power Generation (423)	
☐ aa. Health Care or Hospital (460)		☐ nnn. Sugar Processing (409)	
☐ bb. Industrial Laundry		☐ ooo. Textile Mills (410)	
☐ cc. Ink Formulating (447)		☐ ppp. Timber Products Mfg. (429)	
☐ dd. Inorganic Chemicals Mfg. (415)		☐ qqq. Transportation Equipment Cleaning (442)	
☐ ee. Iron and Steel Mfg. (420)		☐ rrr. Transportation Services	
☐ ff. Leather Tanning and Finishing (425)		☐ sss. Used Oil Reclamation	
☒ gg. Machine Shop		☒ ttt. Vehicle/Equipment Washing	
☐ hh. Machinery Mfg. or Rebuilding (438)		☐ uuu. Warehousing	
☐ ii. Meat Processing (432)		☐ vvv. Waste Combustors (444)	
☐ jj. Metal Finishing (433)		☐ www. Waste Recycling	
☐ kk. Metal Molding and Casting (464)		☐ xxx. Others (Describe) Varies	
☐ ll. Mineral Mining and Processing (436)		☐ yyy. Others (Describe)	
☐ mm. Nonferrous Metals Forming/Metal Powders (471)		☐ zzz. Others (Describe)	

6. Are your activities subject to seasonal variation? If "Yes," explain and indicate the month(s) of peak activity:

○ Yes ◉ No

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

Company Name: Washington University School of Medicine
Premise Address: 660 South Euclid Ave

SECTION C - WATER CONSUMPTION AND WASTEWATER DISCHARGES

1. Raw Water Source(s):
   - ☒ City of St. Louis Water Div.
   - ☐ Missouri American Water Co.
   - ☐ Other municipal source _____
   - ☐ Hauled by contractor
   - ☐ Surface water
   - ☐ Private well
   - ☐ Other (describe) _____

2. Water Bill Addressee: Varies- See spreadsheet

3. Water Service Account Numbers: Varies - See spreadsheet

4. List past twelve months water usage from:

				☒ Water Bills	☐ Other Sources
1st 3 mo period	6/1/2016	through	8/31/2016	53,319 Ccf	Ccf
2nd 3 mo period	9/1/2016	through	11/30/2016	70,342 Ccf	Ccf
3rd 3 mo period	12/1/2016	through	2/28/2017	73,323 Ccf	Ccf
4th 3 mo period	3/1/2017	through	5/31/2017	52,301 Ccf	Ccf

Water Bills and Other Sources Total: 249,285 Ccf = ~~186465180~~ 510,864 GPD-calendar = ~~186465180~~ 510,864 GPD-work

5. Describe any treatment or conditioning process performed on the raw water before use (list regeneration/reject water volume in 6h below):

6. Identify all water uses within your facility:

Water Uses	Estimated Average Daily Use (Gal per workday)
a. Sanitary	102367.3
b. Irrigation & lawn watering	1309.66
c. Non-contact cooling water	153879
d. Contact cooling water	0
e. Process water	121012.4
f. Plant & equipment washdown	10883.74
g. Boiler	90049.29
h. Regeneration/reject water	31362.69
i. Other uses	0
j. Total of USES (6a through 6h):	510864.07999999996

(6a through 6i must equal total at item 4)

7. Identify all water losses and wastewater discharges from your facility:

Water Uses	Estimated Average Daily Loss/Discharge (Gal per workday)
a. Municipal sewer	384480.5
b. Watercourse, storm drain, surface	1309.66
c. Haulers	0
d. Evaporation	125073.8
e. Contained in product	0
f. Total of LOSSES & DISCHARGES:	510863.95999999996

(7a through 7e must equal total at 6j)

8. For each activity you listed in Sections B.1 and B.5, list the average water usage and average wastewater discharge per workday. Attach additional sheets, if needed. (Total Avg. Water Use must equal total for 6e)

Item No	Activity	Type of Discharge: Cont	Batch	None	Avg. Water Use (GPD)	Avg. Discharge to Mun Sewer (GPD)	Date when activity first commenced at this facility
	Food Preparation	◉	○	○	7932.461		
	Laboratory and animal care	◉	○	○	111301.7		
	Photo processing	◉	○	○	1778.229		
		○	○	○			
		○	○	○			
		○	○	○			
		○	○	○			
		○	○	○			
				Total:	121012.39		

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MSD 045346

Section D 2.

Sample Point	Description of Sampling Point	Total avg flow per work day
1	see attatched	7833.2
3	see attatched	33838.4
5	see attatched	150149.0
7	see attatched	12378.7
8	see attatched	74852.8
9	see attatched	74852.8
10	see attatched	545.8
11	see attatched	30029.8
	Grand total	**384480.5**

Section E 1.

Type of Wastewater	Discharge Quantity (GPD-workday)								
	1	3	5	7	8	9	10	11	Total
Sanitary	2744.4	16878.3	33188.0	2770.3	26225.4	26225.4	289.8	10521.3	118842.9
Non- contact cooling water	1715.6	3230.6	38727.6	218.0	16394.2	16394.2	0.0	6577.1	83257.3
Contact cooling water	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Process									
Food Preparation	0.0	0.0	4036.5	0.0	0.0	0.0	0.0	0.0	4036.5
Photo	354.2	288.2	369.5	0.0	3384.7	3384.7	0.0	1357.9	9139.3
Lab and animal wash	914.8	12291.1	41089.0	5451.4	8741.6	8741.6	0.0	3507.1	80736.5
Plant & equipment ~~blowdown~~	247.0	1150.2	878.0	3939.0	2360.7	2360.7	256.0	947.1	12138.8
Boiler blowdown	0.0	0.0	17448.9	0.0	0.0	0.0	0.0	0.0	17448.9
Regeneration/reject water	1857.1	0.0	14411.5	0.0	17746.1	17746.1	0.0	7119.4	58880.2
other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**7833.2**	**33838.4**	**150149.0**	**12378.7**	**74852.8**	**74852.8**	**545.8**	**30029.8**	**384480.5**

Company Name: Washington University School of Medicine
Premise Address: 660 South Euclid Ave

SECTION D - SEWER CONNECTION INFORMATION

1. Attach a scale drawing of your premise, which shows (for permit renewals, highlight any changes since last application):
   a. All buildings, structures, alleys, streets and other pertinent features.
   b. All sewers and drains, including all connections, inlets, manholes, vents and other access or control structures. Identify each sewer as sanitary, storm or combined and indicate its size.
   c. A sampling point for each connection to the public sewer.
   d. A sampling point for each discharge from a federally regulated categorical process.
   e. A sampling point for each discharge to a separate storm sewer or watercourse.

2. List each sampling point identified in 1c, d and e above and each connection for which there is no sampling point. Assign a sequential reference number to each location, starting with No. 1. Attach additional sheets, if needed.

Reference Number	Sewer Size (inches)	Description of sewer sampling point or connection. (Vent, manhole, valve, other appurtenance. Indicate size & location)	Upstream to other point? Yes	No	List Ref. No.	Total avg flow per workday(GPD)
1		see attached	○	○	1	7833.15
2		see attached	○	○	3	33838.43
3		see attached	○	○	5	180178.8
4		see attached	○	○	~~(8)~~ 10	545.8236
5		see attached	○	○	7	12378.69
6		see attached	○	○	8	74852.8 +10
7		see attached	○	○	9	74852.8 +11

Grand Total Average Flow per Workday: 384,480

SECTION E - WASTEWATER INFORMATION

1. For each point listed in Section D.2 above, list the wastewater discharge corresponding to each water usage listed in Section C.6. Attach additional sheets, if needed.

Type of Wastewater	Discharge Quantity (GPD-workday) for each sampling point or connection listed in D.2							Facility Total (See instr.)
	1 upstream to 1	2 upstream to 3	3 upstream to 5	4 upstream to 6	5 upstream to 7	6 upstream to 8	7 upstream to 9	
a. Sanitary	2744.43	16878.3	39825.6	289.8	2770.3	26225.4	26225.4	114959.230000
c. Non-contact cooling water CT blow down	1715.6	3230.60	46473.1		218.01	16394.3	16394.3	84425.9100000
d. Contact cooling water	0	0	0			0	0	0
e. Process (From C.8)								0
Food Preparation	0	0	4843.8			0	0	4843.8
Photo	354.20	288.22	443.42			3384.8	3384.8	7855.44
Lab and animal	914.80	12291.1	49306.7		5451.37	8741.63	8741.63	85447.2300000
								0
								0
								0
								0
								0
f. Plant & equipment washdown	247.05	1150.24	1053.64	256.02	3939.01	2360.66	2360.66	11367.28
g. Boiler blowdown	0	0	20938.7			0	0	20938.7
h. Regeneration/reject water	1857.07	0	17293.7			17746.1	17746.1	54642.97
i. Other								0
Totals (Same as D.2):	7833.15	33838.4	180178.	545.82	12378.6	74852.8	74852.8	384480.560000

2. If any of the above points discharge to a watercourse or to a separate storm sewer, complete the following:

NPDES Outfall Number

NPDES Permit Number

3. Do any of the above sampling points also convey stormwater from your premise ?

4. Do you pretreat any of the wastes discharged through any of the above points ?

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MSD 045348

Company Name: Washington University School of Medicine
Premise Address: 660 South Euclid Ave

SECTION E - WASTEWATER INFORMATION (Continued)

5. Describe the type of wastewater pretreatment you employ prior to each point for which you marked "Yes" in E.4

Ref. No.	Pretreatment System Description

6. Does your facility have a written:

a. Spill control plan ? ◉ Yes ◯ No
b. Waste minimization plan ? ◯ Yes ◉ No
c. Solvent management plan ? ◯ Yes ◯ No
d. Slug discharge control plan ? ◯ Yes ◉ No

7. If any wastewater analyses have been performed on the wastewater discharges from your facility attach copies of the most recent data. Be sure to specify the locations from which the samples were collected. Attach sketches, plans, drawings, etc. as necessary. Permit renewal applications, only, may skip this item.

8. Priority Pollutant Information: Check one of the four boxes by each listed chemical to indicate whether it is: "Suspected Absent", "Known Absent", "Suspected Present" or "Known Present" ON YOUR PREMISE. Any chemical which is used in your manufacturing or service activity or is generated as a product or as a by-product should be marked "Known Present." Some pollutants are known by other names. Refer to the instruction booklet for synonyms for those pollutants which have an asterisk (*):

SA = "Suspected Absent" KA = "Known Absent" SP = "Suspected Present" KP = "Known Present"

Item No	PRIORITY POLLUTANT	SA	KA	SP	KP
1.	asbestos (fibrous)	◯	◯	◯	◉
2.	cyanide (total)	◯	◯	◯	◉
3.	antimony (total)	◯	◯	◉	◯
4.	arsenic (total)	◯	◯	◉	◯
5.	beryllium (total)	◯	◯	◉	◯
6.	cadmium (total)	◯	◯	◯	◉
7.	chromium (total)	◯	◯	◯	◉
8.	copper (total)	◯	◯	◯	◉
9.	lead (total)	◯	◯	◯	◉
10.	mercury (total)	◯	◯	◯	◉
11.	nickel (total)	◯	◯	◯	◉
12.	selenium (total)	◯	◯	◯	◉
13.	silver (total)	◯	◯	◯	◉
14.	thallium (total)	◉	◯	◯	◯
15.	zinc (total)	◯	◯	◯	◉
16.	acenaphthene	◯	◯	◯	◉
17.	acenaphthylene	◯	◉	◯	◯
18.	acrolein	◯	◯	◯	◉
19.	acrylonitrile	◯	◯	◯	◉
20.	aldrin	◯	◉	◯	◯
21.	anthracene	◯	◯	◯	◉
22.	benzene	◯	◯	◯	◉
23.	benzidine	◯	◯	◯	◉
24.	benzo (a) anthracene *	◯	◉	◯	◯
25.	benzo (a) pyrene	◯	◯	◯	◉
26.	benzo (b) fluoranthene	◯	◉	◯	◯
27.	benzo (g,h,i) perylene *	◯	◉	◯	◯
28.	benzo (k) fluoranthene *	◯	◉	◯	◯
29.	alpha-BHC	◯	◉	◯	◯
30.	beta-BHC	◯	◉	◯	◯
31.	delta-BHC	◯	◉	◯	◯
32.	gamma-BHC *	◯	◯	◯	◉
33.	bis (2-chloroethyl) ether *	◯	◉	◯	◯
34.	bis (2-chloroethoxy) methane *	◯	◉	◯	◯
35.	bis (2-chloroisopropyl) ether *	◯	◉	◯	◯
36.	Reserved				
37.	bis (2-ethylhexyl) phthalate	◯	◉	◯	◯
38.	bromodichloromethane *	◯	◉	◯	◯
39.	bromoform *	◯	◯	◯	◉
40.	bromomethane *	◯	◉	◯	◯
41.	4-bromophenylphenyl ether	◯	◉	◯	◯
42.	butylbenzyl phthalate	◯	◉	◯	◯
43.	carbon tetrachloride *	◯	◯	◯	◉
44.	chlordane	◯	◉	◯	◯
45.	4-chloro-3-methylphenol *	◯	◉	◯	◯
46.	chlorobenzene	◯	◯	◯	◉
47.	chloroethane *	◯	◉	◯	◯
48.	2-chloroethylvinyl ether	◯	◉	◯	◯
49.	chloroform *	◯	◯	◯	◉
50.	chloromethane *	◯	◉	◯	◯
51.	2-chloronaphthalene	◯	◉	◯	◯
52.	2-chlorophenol *	◯	◉	◯	◯
53.	4-chlorophenylphenyl ether	◯	◉	◯	◯
54.	chrysene *	◯	◉	◯	◯
55.	4, 4'-DDD *	◯	◉	◯	◯
56.	4, 4'-DDE *	◯	◉	◯	◯
57.	4, 4'-DDT *	◯	◉	◯	◯
58.	dibenzo (a,h) anthracene *	◯	◉	◯	◯
59.	dibromochloromethane	◯	◉	◯	◯
60.	1, 2-dichlorobenzene *	◯	◯	◯	◉
61.	1, 3-dichlorobenzene *	◯	◉	◯	◯
62.	1, 4-dichlorobenzene *	◉	◯	◯	◯
63.	3, 3'-dichlorobenzidine	◯	◉	◯	◯
64.	Reserved				
65.	1, 1-dichloroethane *	◯	◉	◯	◯
66.	1, 2-dichloroethane *	◯	◯	◯	◉
67.	1, 1-dichloroethene *	◯	◉	◯	◯
68.	trans-1, 2-dichloroethene *	◯	◉	◯	◯
69.	2, 4-dichlorophenol *	◯	◯	◯	◉
70.	1, 2-dichloropropane *	◯	◉	◯	◯

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MSD 045349

Company Name: Washington University School of Medicine
Premise Address: 660 South Euclid Ave

SECTION E - WASTEWATER INFORMATION (Continued)

Priority Pollutant Information (Continued)

SA = "Suspected Absent" KA = "Known Absent" SP = "Suspected Present" KP = "Known Present"

Item No	PRIORITY POLLUTANT	SA	KA	SP	KP
71.	(cis and trans) 1, 3-dichloropropene *	○	●	○	○
72.	dieldrin	○	○	○	●
73.	diethylphthalate *	○	●	○	○
74.	2, 4-dimethylphenol *	○	●	○	○
75.	dimethyl phthalate	○	●	○	○
76.	di-n-butyl phthalate	○	○	○	●
77.	di-n-octyl phthalate *	○	○	○	●
78.	4, 6-dinitro-2-methylphenol *	○	●	○	○
79.	2, 4-dinitrophenol	●	○	○	○
80.	2, 4-dinitrotoluene	○	○	●	○
81.	2, 6-dinitrotoluene	○	●	○	○
82.	1, 2-diphenylhydrazine *	●	○	○	○
83.	endosulfan I *	○	●	○	○
84.	endosulfan II *	○	●	○	○
85.	endosulfan sulfate	○	●	○	○
86.	endrin	○	●	○	○
87.	endrin aldehyde	○	●	○	○
88.	ethylbenzene	○	○	○	●
89.	fluoranthene	○	●	○	○
90.	fluorene *	○	●	○	○
91.	heptachlor	○	●	○	○
92.	heptachlor epoxide	●	○	○	○
93.	hexachlorobenzene *	○	●	○	○
94.	hexachlorobutadiene	○	●	○	○
95.	hexachlorocyclopentadiene *	○	○	○	●
96.	hexachloroethane *	○	○	○	●
97.	indeno (1, 2, 3-cd) pyrene *	○	●	○	○
98.	isophorone *	●	○	○	○
99.	methylene chloride *	○	○	○	●

Item No	PRIORITY POLLUTANT	SA	KA	SP	KP
100.	naphthalene	○	○	○	●
101.	nitrobenzene	○	○	○	●
102.	2-nitrophenol	○	○	○	●
103.	4-nitrophenol *	○	○	○	●
104.	N-nitrosodimethylamine *	○	●	○	○
105.	N-nitrosodi-n-propylamine *	○	●	○	○
106.	N-nitrosodiphenylamine	○	●	○	○
107.	PCB-1016 *	●	○	○	○
108.	PCB-1221 *	●	○	○	○
109.	PCB-1232 *	●	○	○	○
110.	PCB-1242 *	●	○	○	○
111.	PCB-1248 *	●	○	○	○
112.	PCB-1254 *	●	○	○	○
113.	PCB-1260 *	●	○	○	○
114.	pentachlorophenol	○	○	○	●
115.	phenanthrene	○	○	○	●
116.	phenol	○	○	○	●
117.	pyrene	○	○	●	○
118.	2, 3, 7, 8-tetrachlorodibenzo-p-dioxin *	○	○	○	●
119.	1, 1, 2, 2-tetrachloroethane *	○	○	○	●
120.	tetrachloroethene *	○	○	○	●
121.	toluene *	○	○	○	●
122.	toxaphene	○	●	○	○
123.	1, 2, 4-trichlorobenzene	○	●	○	○
124.	1, 1, 1-trichloroethane *	○	○	○	●
125.	1, 1, 2-trichloroethane *	○	○	○	●
126.	trichloroethene *	○	○	○	●
127.	Reserved				
128.	2, 4, 6-trichlorophenol	○	●	○	○
129.	vinyl chloride *	○	●	○	○

9. For priority pollutants in E.8, which are indicated "Known Present" or "Suspected Present", list and provide the following information for each: (Attach additional sheets, if needed.)

Item No.	PRIORITY POLLUTANT	HOW USED (for KP) or WHY SUSPECTED (for SP)	ANNUAL USAGE for KP(lbs)	LOSS TO SEWER for KP(lbs)
		see attached		

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MSD 045350

Company Name: Washington University School of Medicine
Premise Address: 660 South Euclid Ave

SECTION F - NON-SEWERED WASTES

1. Do you generate any liquid wastes or sludges, as described in item 2 below, which are not disposed in the sewer system?

   ◉ Yes ◯ No

   If "Yes" complete items 2 and 3 below. Note: Be sure to include wastewaters listed in Section C.7.c.
   If "No" skip remainder of this section.

2. Information on non-sewered waste:

Type of Waste	Estimated Quantity Disposed/yr	Units	Store On-Site	Dispose On-Site	Dispose Off-Site
☒ Acids and/or Alkalies	with labpacks		☐	☐	☒
☒ Equipment Oils and/or Grease	8000	pounds	☐	☐	☒
☒ Infectious Waste	400,000	pounds	☐	☐	☒
☒ Inks/ Dyes	with labpacks		☐	☐	☐
☒ Kitchen/Food Service Grease	6000	pounds	☐	☐	☒
☒ Organic Compounds	with labpacks		☐	☐	☒
☐ Paints or Paint Sludges	with labpacks		☐	☐	☒
☐ Pesticides			☐	☐	☐
☐ Pretreatment Sludges			☐	☐	☐
☒ Radioactive Waste	1500	pounds	☒	☐	☒
☒ Solvents/Thinners	40,000	pounds	☐	☐	☒
☐ Other Labpack and reagents	14,000	pounds	☐	☐	☒
☐ Other			☐	☐	☐
☐ Other			☐	☐	☐

3. List your USEPA and/or MDNR Hazardous Waste generator numbers:

   USEPA MOT300010857 MDNR 001591

SECTION G - INDUSTRIAL WASTE SURCHARGE INFORMATION

1. Provide the following analytical information for each sampling point or each connection to the public sewer only if your water usage exceeds 80 Ccf per month (1,995 Gal per calendar day). Representative samples of the wastewater in each sewer must be collected and analyzed for the listed parameters. Report the daily average concentrations in mg/l for each point. Permit renewal applications, only, may skip Section G regardless of water usage volume.

Parameter	Sewer Reference Numbers (Refer to Section D.2) If more than 7, attach additional sheets						
	1	2	3	4	5	6	7
Date Sampled							
Sample Start Time (eg. HH:MM PM)							
Sample End Time (eg. HH:MM PM)							
Type of Sample							
Flow (GPD)							
Biochemical Oxygen Demand (5 day)							
Chemical Oxygen Demand							
Total Suspended Solids							

Collected By (Name of organization):

Analyzed By (Name of organization):

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MSD 045351

Company Name: Washington University School of Medicine

Premise Address: 660 South Euclid Ave

SECTION H - CERTIFICATION AND SIGNATURE

1. The following individual may be contacted regarding the information contained in this questionnaire:

   Name of Contact Person: _____

   Title: _____ Phone Number _____

2. "I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

   Name of Signing Official: Lori Isringhausen

   Title: Environmental Compliance Mgr Phone Number 314/362-6735

   Signature: [signature] Date: 6/26/17

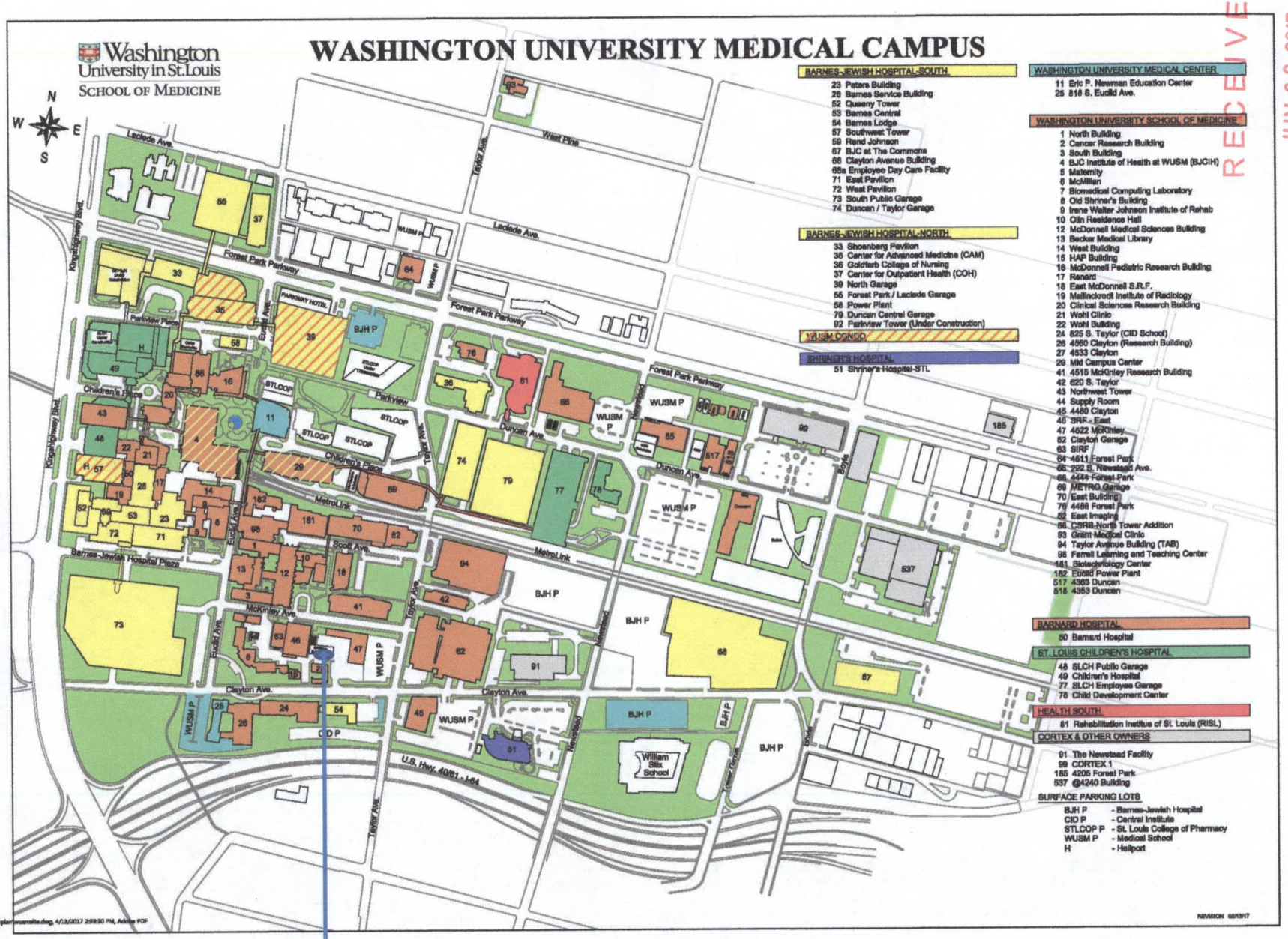
This certification, along with any other reporting documents, must be signed by an individual described as follows: a responsible corporate officer if the user is a corporation; a general partner if the user is a partnership; the proprietor if the user is a sole proprietorship; a duly authorized representative of the individual just described, if that individual submits a written authorization which specifies a person or position within the company, having responsibility for the overall operation of the facility from which the discharge originates, such as a plant manager, or overall responsibility for environmental matters at the company.

List attachments included with this questionnaire:

Sample Point Map	~~Self Monitoring Report~~
Priority Pollutant Chart	

Priority Pollutant		How used or why suspected		annual usage		Loss to Sewer
1. asbestos (fibrous)	SP	in old buildings	<	100	pounds	none
2. cyanide (total)	KP	research	<	500	pounds	none
3. antimony (total)	SP	research	<	10	pounds	none
4. arsenic (total)	SP	research	<	10	pounds	none
5. beryllium (total)	SP	research	<	10	pounds	none
6. cadmium (total)	KP	research	<	5	pounds	none
7. chromium (total)	KP	research	<	5	pounds	none
8. copper (total)	KP	research	<	5	pounds	none
9. lead (total)	KP	research	<	10	pounds	none
10. mercury (total)	KP	research	<	100	pounds	none
11. nickel (total)	KP	research	<	5	pounds	none
12. selenium (total)	KP	research	<	5	pounds	none
13. silver (total)	KP	research	<	100	pounds	none
14. thallium (total)	SA	research				
15. zinc (total)	KP	research	<	20	pounds	none
16. acenaphthene	KP	research	<	5	pounds	none
17. acenaphthylene	KA					
18. acrolein	KP	research	<	5	pounds	none
19. acrylonitrile	KP	research	<	15	pounds	none
20. aldrin	SA	research				
21. anthracene	KP	research	<	10	pounds	none
22. benzene	KP	research	<	500	pounds	none
23. benzidine	KP	research	<	10	pounds	none
24. benzo (a) anthracene *	KA					
25. benzo (a) pyrene	KP	research	<	5	pounds	none
26. benzo (b) fluoranthene	KA					
27. benzo (g,h,i) perylene *	KA					
28. benzo (k) fluoranthene *	KA					
29. alpha-BHC	KA					
30. beta-BHC	KA					
31. delta-BHC	KA					
32. gamma-BHC *	KP	research	<	5	pounds	none
33. bis (2-chloroethyl) ether *	KA					
34. bis (2-chloroethoxy) methane *	KA					
35. bis (2-chloroisopropyl) ether *	KA					
36. Reserved						
37. bis (2-ethylhexyl) phthalate	KP	research	<	5	pounds	none
38. bromodichloromethane *	KA					
39. bromoform *	KP	research	<	10	pounds	none
40. bromomethane *	KA					
41. 4-bromophenylphenyl ether	KA					
42. butylbenzyl phthalate	KA					
43. carbon tetrachlroride *	KP	research	<	10	pounds	none
44. chlordane	SP	research	<	5	pounds	none
45. 4-chloro-3-methylphenol *	KA					
46. chlorobenzene	KP	research	<	10	pounds	none
47. chloroethane *	KA					
48. 2-chloroethylvinyl ether	KA					
49. chloroform *	KP	research	<	5000	pounds	none
50. chloromethane *	KA					
51. 2-chloronaphthalene	KA					
52. 2-chlorophenol *	KA					
53. 4-chlorophenylphenyl ether	KA					
54. chrysene *	KA					
55. 4, 4'-DDD *	KA					
56. 4, 4'-DDE *	KA					
57. 4, 4'-DDT *	KA					
58. dibenzo (a,h) anthracene *	KA					
59. dibromochloromethane	KA					
60. 1, 2-dichlorobenzene *	KP	research	<	25	pounds	none
61. 1, 3-dichlorobenzene *	KA					
62. 1, 4-dichlorobenzene *	SA	research	<	5	pounds	none
63. 3, 3'-dichlorobenzidine	KA					
64. Reserved	KA					
65. 1, 1-dichloroethane *	KA					

Priority Pollutant		How used or why suspected		annual usage		Loss to Sewer
66. 1, 2-dichloroethane *	KP	research	<	200	pounds	none
67. 1, 1-dichloroethene *	KA					
68. trans-1, 2-dichloroethene *	KA					
69. 2, 4-dichlorophenol	SP	research	<	5	pounds	none
70. 1, 2-dichloropropane *	KA					
71.(cis and trans) 1, 3-dichloropropene *	KA					
72. dieldrin	KP	research	<	5	pounds	none
73. diethylphthalate*	KA					
74. 2, 4-dimethylphenol *	KA					
75. dimethyl phthalate	KA					
76. di-n-butyl phthalate	KP	research	<	500	pounds	none
77. di-n-octyl phthalate *	KP	research	<	500	pounds	none
78. 4, 6-dinitro-2-methylphenol •	KA					
79. 2, 4-dinitrophenol	– KA	research	<	50	pounds	none
80.2 , 4-dinitrotoluene	– SA	research	<	5	pounds	none
81. 2, 6-dinitrotoluene	KA					
82. 1, 2-diphenylhydrazine *	– SA	research	<	5	pounds	none
83. endosulfan I *	KA					
84. endosulfan II*	KA					
85. endosulfan sulfate	KA					
86. endrin	KA					
87. endrin aldehyde	KA					
88. ethylbenzene	KP	research	<	50	pounds	none
89.fluoranthene	KA					
90.fluorene *	KA					
91. heptachlor	KA					
92. heptachlor epoxide	– SA	research	<	5	pounds	none
93. hexachlorobenzene *	KA					
94. hexachlorobutadiene	KA					
95. hexachlorocyclopentadiene *	KP	research	<	10	pounds	none
96. hexachloroethane *	KP	research	<	10	pounds	none
97. indeno (1, 2, 3-cd) pyrene *	KA					
98. isophorone *	–SA	research	<	5	pounds	none
99. methylene chloride *	KP	research	<	1000	pounds	none
100. naphthalene	KP	research	<	50	pounds	none
101. nitrobenzene	KP	research	<	50	pounds	none
102. 2-nitrophenol	KP	research	<	50	pounds	none
103. 4-nitrophenol *	KP	research	<	50	pounds	none
104. N-nitrosodimethylamine *	KA					
105. N-nitrosodi-n-propylamine *	KA					
106. N-nitrosodiphenylamine	KA					
107. PCB-1016 *	- SA	caulk/ballasts	<	100	pounds	none
108. PCB-1221 *	– SA	caulk/ballasts	<	100	pounds	none
109. PCB-1232 *	- SA	caulk/ballasts	<	100	pounds	none
110. PCB-1242 *	- SA	caulk/ballasts	<	100	pounds	none
111. PCB-1248 *	– SA	caulk/ballasts	<	100	pounds	none
112. PCB-1254 *	KP	caulk/ballasts	<	100	pounds	none
113. PCB-1260 *	KP	caulk/ballasts	<	100	pounds	none
114. pentachlorophenol	KP	research	<	50	pounds	none
115. phenanthrene	KP	research	<	50	pounds	none
116. phenol	KP	research	<	50	pounds	none
117. pyrene	SP	research	<	50	pounds	none
118. 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin *	KP	research → "SA"	<	1	pounds	none
119. 1, 1, 2, 2-tetrachloroethane *	KP	research	<	50	pounds	none
120. tetrachloroethene *	KP	research	<	50	pounds	none
121. toluene *	KP	research	<	50	pounds	none
122. toxaphene	KA					
123. 1, 2, 4-trichlorobenzene	KA					
124. 1, 1, 1-trichloroethane *	KP	research	<	50	pounds	none
125. 1, 1, 2-trichloroethane *	KP	research	<	50	pounds	none
126. trichloroethene *	KP	research	<	50	pounds	none
127. Reserved						
128. 2, 4, 6-trichlorophenol	KA					
129. vinyl chloride *	KA					



SP001- Flow form W in MH 30' N, 10'W of NE corner of building 27 (in alley)

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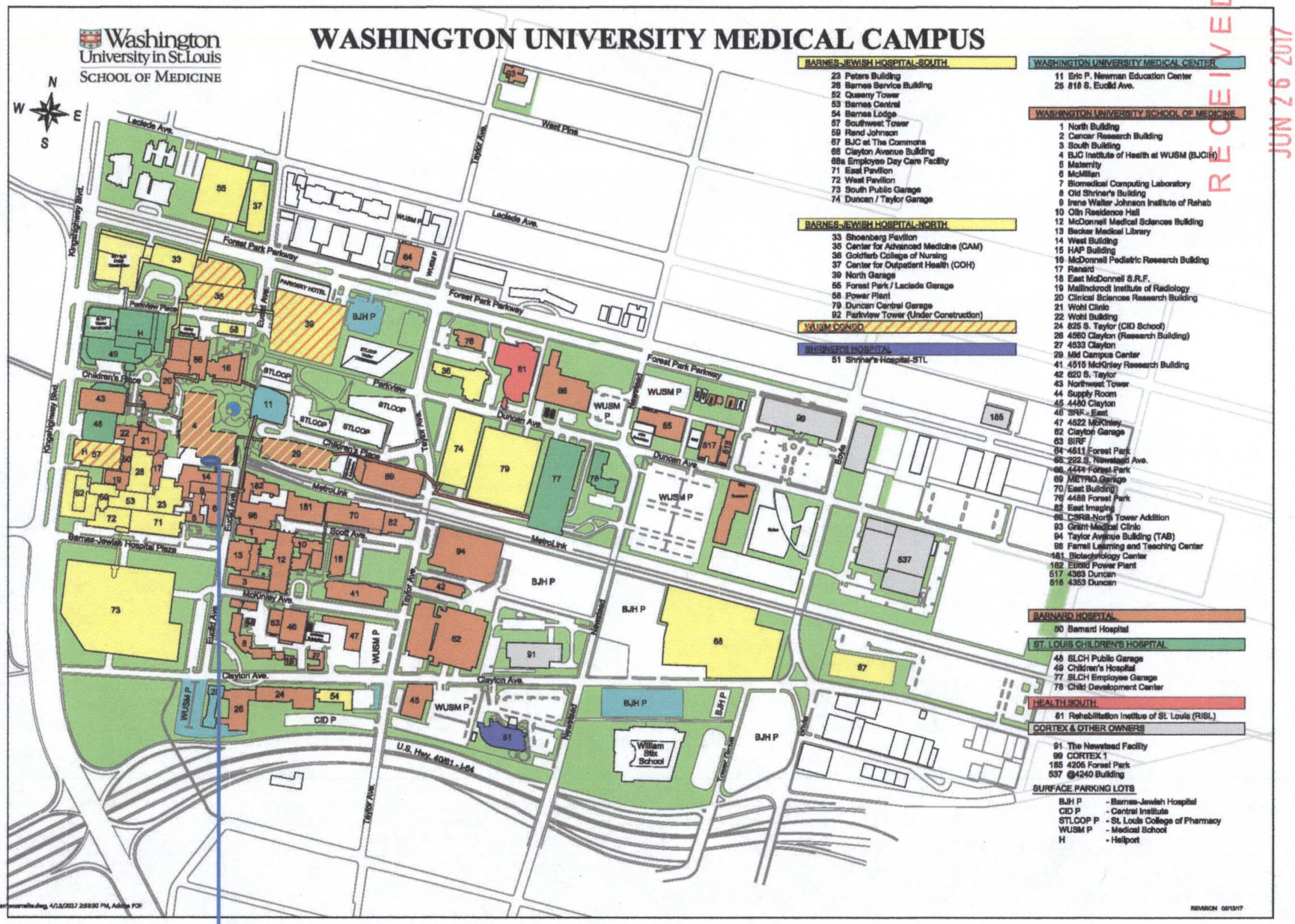
JUN 26 2017
DIVISION OF ENVIRONMENTAL COMPLIANCE



SP003 - Flow from S in MH N of building 14 in drive, 6' S of O_2

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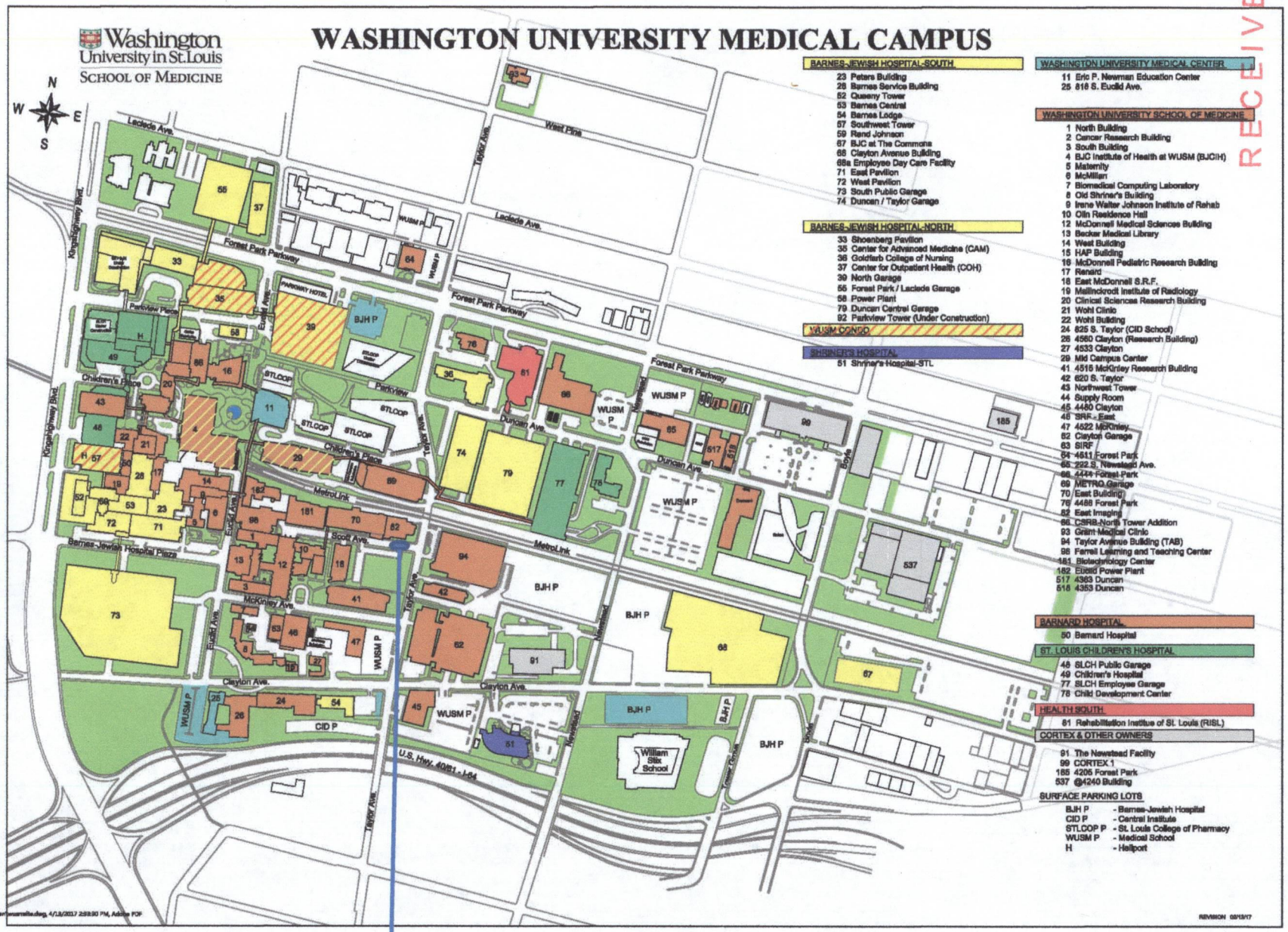

SP005 – MH 200' W of Taylor on S Side of Scott Ave in Street

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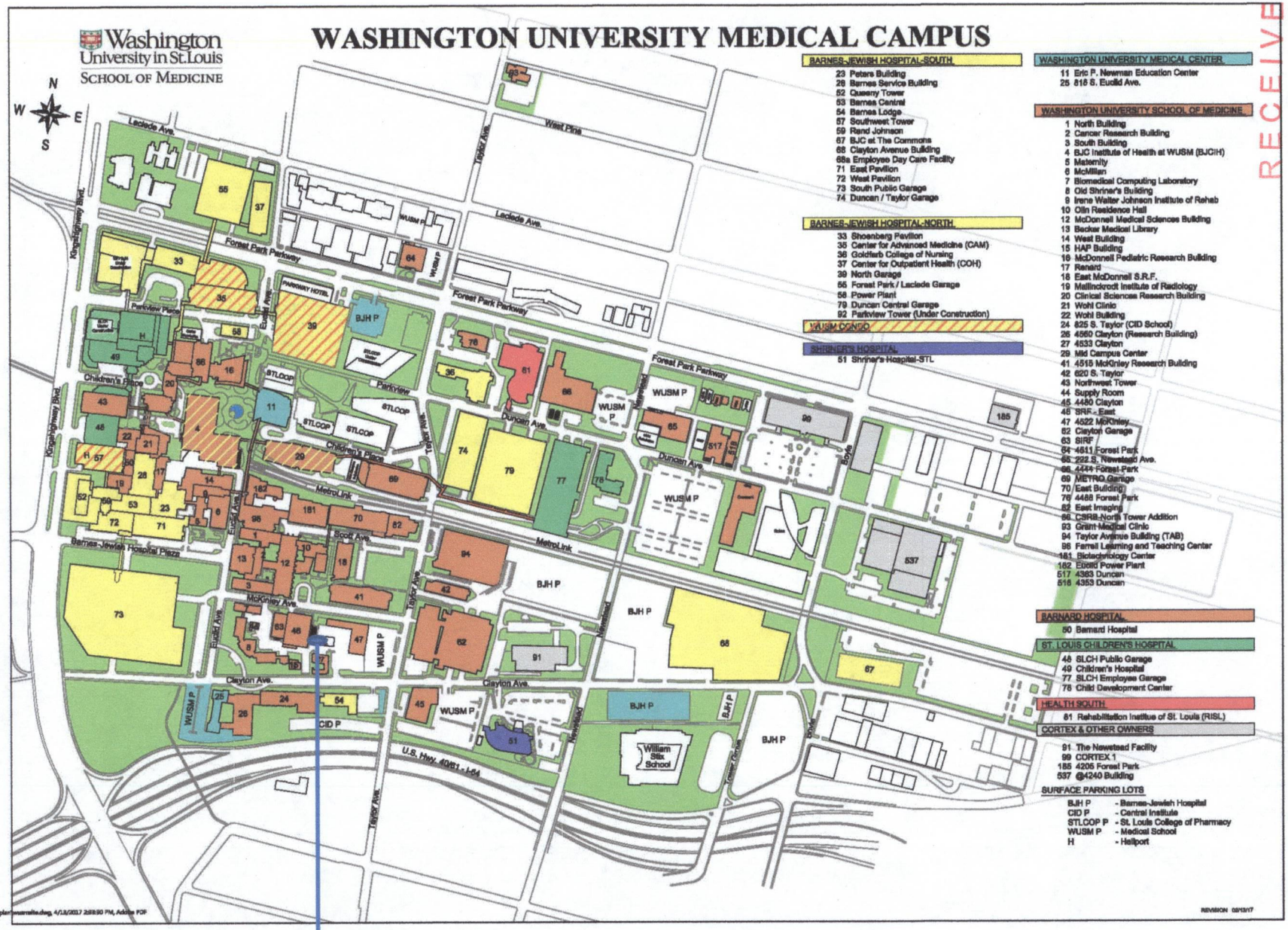

SP007 – Manhole in sidewalk E of building 63, 111' N, 2' E of SE corner of building

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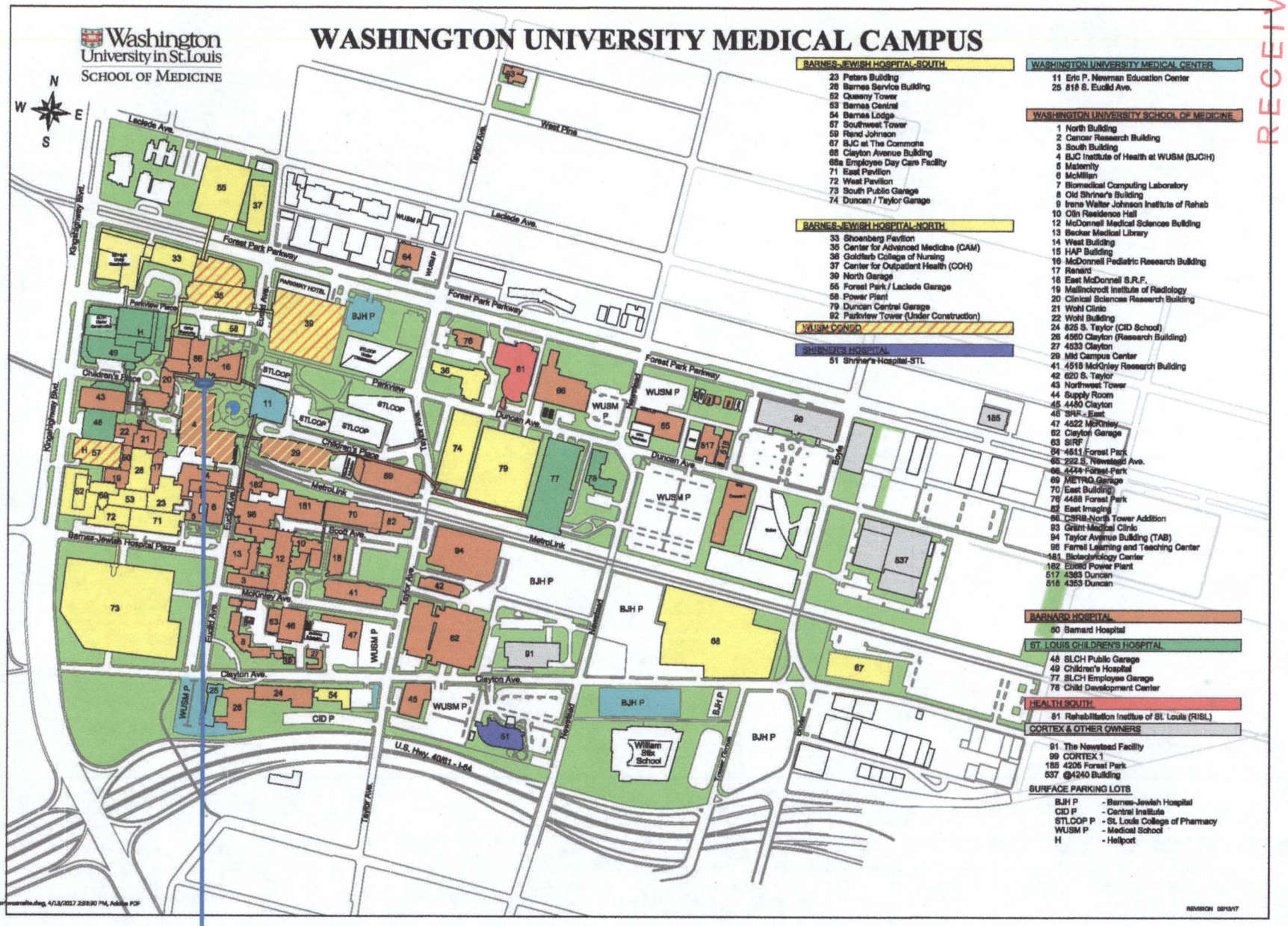

SP008- MH in plaza 27'W,27' N of NE building corner

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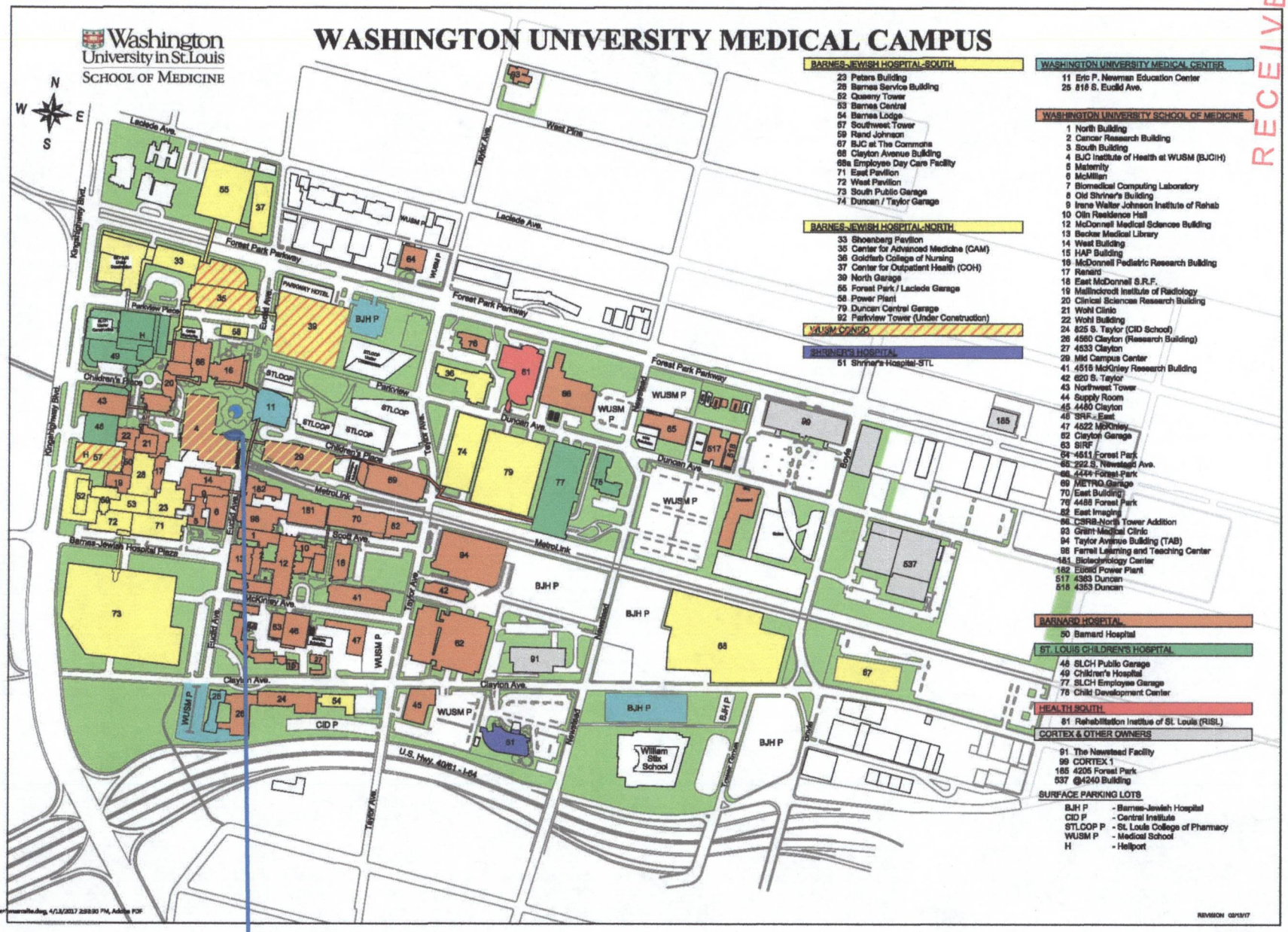
MSD 045359



SP009- MH in plaza 36'N,27'E of S NE building

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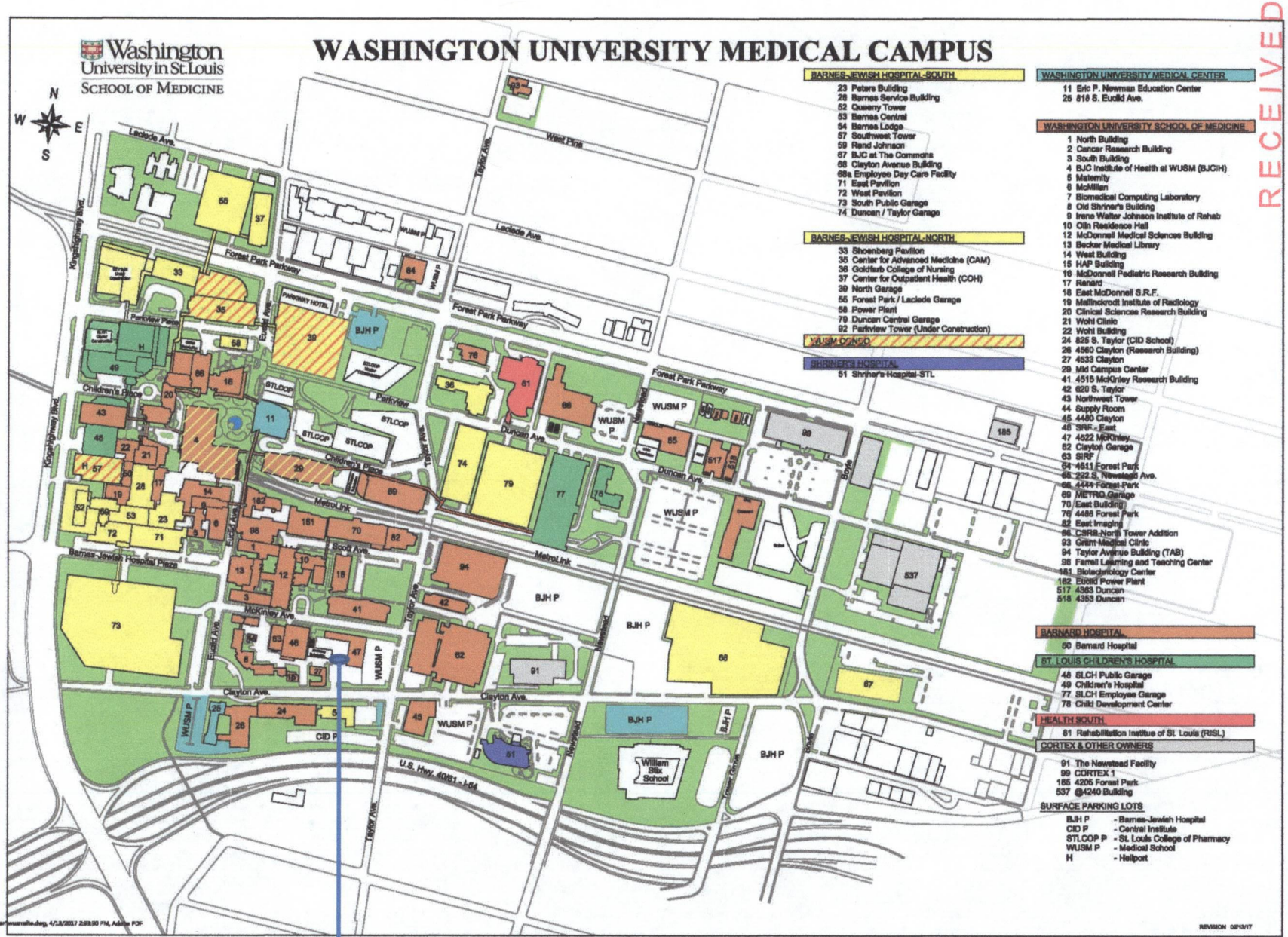

SP010- 6" trapped vent, 10' W, 36'N of EHS SW building corner

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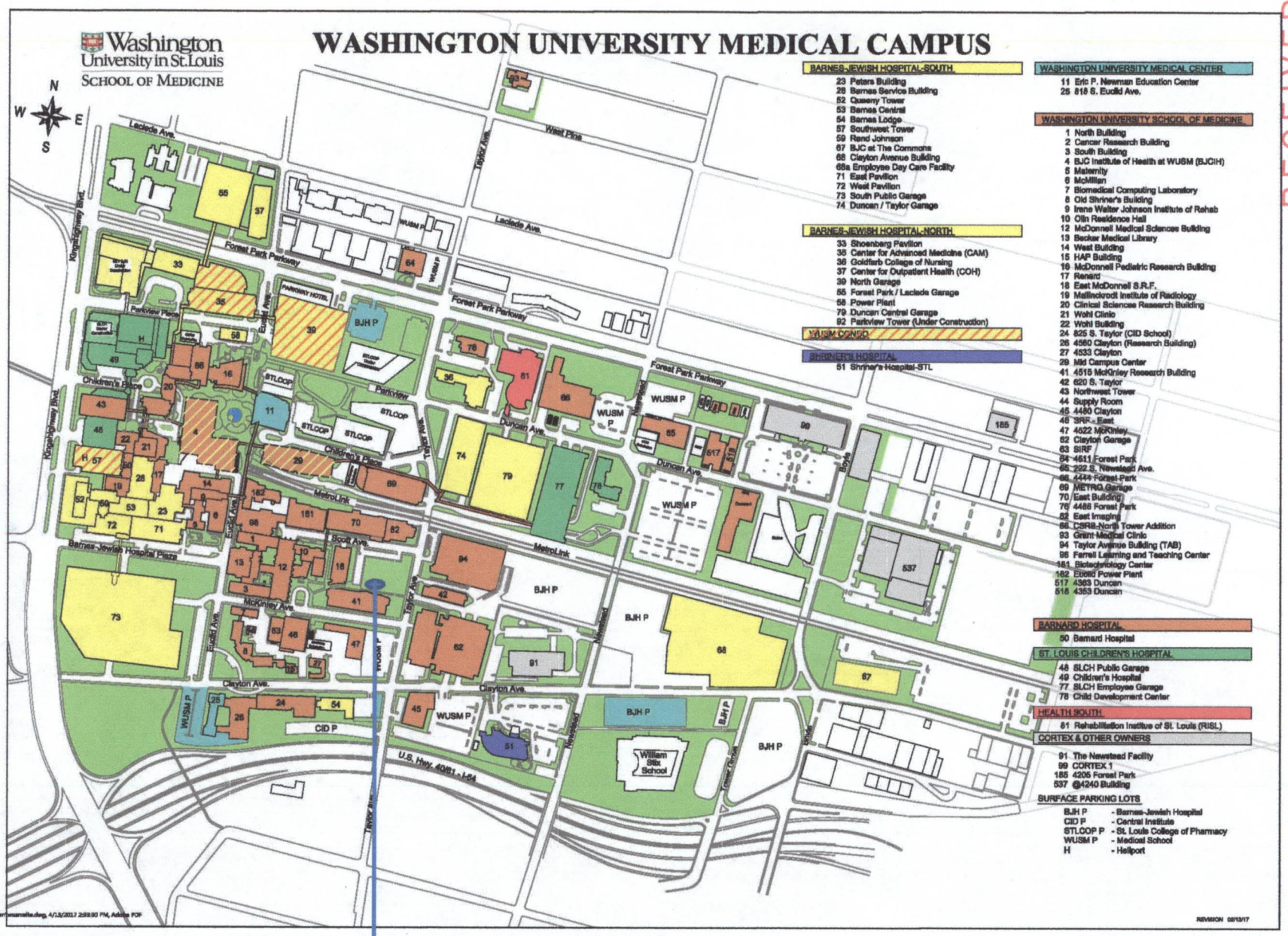

SP011- 12" vent, 125' W, 30'N of NE building corner

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

MSD 045363

~~SP010~~

~~SP010~~

Michael S. Kynion WASH. UNIV. MED. SCHOOL

From: Isringhausen, Mary <isringhausenm@wusm.wustl.edu> 1024-3530-00
Sent: Wednesday, September 16, 2015 10:15 AM
To: SR – Scott Rehmer; Michael S. Kynion
Subject: Revised Questionionnaire
Attachments: Revised pages 4 5.pdf

Good Morning! Here is the revised questionnaire as Mike and I discussed yesterday. Let me know if you need anything else. Thanks!

Scott- Are we ok to not do anymore sampling at 006 and start at 010 for the 4th quarter sampling?

Livi Isringhausen
Environmental Compliance Manager
Washington University Medical School
660 South Euclid Campus Box 8229
St. Louis, Mo 63110
isringhausenm@wusm.wustl.edu
http://ehs.wustl.edu
p-(314)362-6735
c-(314)602-8551
f-(314)362-1095
Washington University in St.Louis
Environmental Health & Safety

Called L. Isringhausen ON 9/16, to inform her that 006 will be discontinued and 010 + 011 will be activated next permit revision. SR

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Company Name: Washington University School of Medicine
Premise Address: 660 South Euclid Ave

SECTION D - SEWER CONNECTION INFORMATION

1. Attach a scale drawing of your premise, which shows (for permit renewals, highlight any changes since last application):
   a. All buildings, structures, alleys, streets and other pertinent features.
   b. All sewers and drains, including all connections, inlets, manholes, vents and other access or control structures. Identify each sewer as sanitary, storm or combined and indicate its size.
   c. A sampling point for each connection to the public sewer.
   d. A sampling point for each discharge from a federally regulated categorical process.
   e. A sampling point for each discharge to a separate storm sewer or watercourse.

2. List each sampling point identified in 1c, d and e above and each connection for which there is no sampling point. Assign a sequential reference number to each location, starting with No. 1. Attach additional sheets, if needed.

Reference Number	Sewer Size (inches)	Description of sewer sampling point or connection. (Vent, manhole, valve, other appurtenance. Indicate size & location)	Upstream to other point? Yes	No	List Ref. No.	Total avg flow per workday(GPD)
010	6"	trapped vent 10'W,36"N of SW bdg corner	○	○		
2011	12"	vent 125"W, 30"N from NE building corner	○	◉		
3			○	○		
4			○	○		
5			○	○		
6			○	○		
7			○	○		

Grand Total Average Flow per Workday: 0

SECTION E - WASTEWATER INFORMATION

1. For each point listed in Section D.2 above, list the wastewater discharge corresponding to each water usage listed in Section C.6. Attach additional sheets, if needed.

Type of Wastewater	Discharge Quantity (GPD-workday) for each sampling point or connection listed in D.2: 010 (upstream to)	2011 (upstream to)	3 (upstream to)	4 (upstream to)	5 (upstream to)	006 Outlet 04 (upstream to)	7 (upstream to)	Facility Total (See instr.)
a. Sanitary	550	20000						20550
c. Non-contact cooling water								0
d. Contact cooling water								0
e. Process (From C.8)								0
Photo and Teaching Lab		2000						2000
Lab Waste		8000						8000
Animal Care		250						250
Photo		250						250
								0
								0
								0
								0
f. Plant & equipment washdown	485	1700						2185
g. Boiler blowdown								0
h. Regeneration/reject water		15500						15500
i. Other CT		15500						15500
Totals (Same as D.2):	1035	63200				(ZERO)		64235

2. If any of the above points discharge to a watercourse or to a separate storm sewer, complete the following:

NPDES Outfall Number	NA	NA					
NPDES Permit Number							

3. Do any of the above sampling points also convey stormwater from your premise ?

	NO	YES					

4. Do you pretreat any of the wastes discharged through any of the above points ?

	Yes	Yes					

Company Name: Washington University School of Medicine
Premise Address: 660 South Euclid Ave

SECTION E - WASTEWATER INFORMATION (Continued)

5. Describe the type of wastewater pretreatment you employ prior to each point for which you marked "Yes" in E.4

Ref. No.	Pretreatment System Description
010	pH adjustment
011	Metal recovery (dark room)

6. Does your facility have a written:

a. Spill control plan ? ◯ Yes ◯ No
b. Waste minimization plan ? ◯ Yes ◯ No
c. Solvent management plan ? ◯ Yes ◯ No
d. Slug discharge control plan ? ◯ Yes ◯ No

7. If any wastewater analyses have been performed on the wastewater discharges from your facility attach copies of the most recent data. Be sure to specify the locations from which the samples were collected. Attach sketches, plans, drawings, etc. as necessary. Permit renewal applications, only, may skip this item.

8. Priority Pollutant Information: Check one of the four boxes by each listed chemical to indicate whether it is: "Suspected Absent", "Known Absent", "Suspected Present" or "Known Present" ON YOUR PREMISE. Any chemical which is used in your manufacturing or service activity or is generated as a product or as a by-product should be marked "Known Present." Some pollutants are known by other names. Refer to the instruction booklet for synonyms for those pollutants which have an asterisk (*):

SA = "Suspected Absent" KA = "Known Absent" SP = "Suspected Present" KP = "Known Present"

Item No	PRIORITY POLLUTANT	SA	KA	SP	KP
1.	asbestos (fibrous)	◯	◯	◯	◯
2.	cyanide (total)	◯	◯	◯	◯
3.	antimony (total)	◯	◯	◯	◯
4.	arsenic (total)	◯	◯	◯	◯
5.	beryllium (total)	◯	◯	◯	◯
6.	cadmium (total)	◯	◯	◯	◯
7.	chromium (total)	◯	◯	◯	◯
8.	copper (total)	◯	◯	◯	◯
9.	lead (total)	◯	◯	◯	◯
10.	mercury (total)	◯	◯	◯	◯
11.	nickel (total)	◯	◯	◯	◯
12.	selenium (total)	◯	◯	◯	◯
13.	silver (total)	◯	◯	◯	◯
14.	thallium (total)	◯	◯	◯	◯
15.	zinc (total)	◯	◯	◯	◯
16.	acenaphthene	◯	◯	◯	◯
17.	acenaphthylene	◯	◯	◯	◯
18.	acrolein	◯	◯	◯	◯
19.	acrylonitrile	◯	◯	◯	◯
20.	aldrin	◯	◯	◯	◯
21.	anthracene	◯	◯	◯	◯
22.	benzene	◯	◯	◯	◯
23.	benzidine	◯	◯	◯	◯
24.	benzo (a) anthracene *	◯	◯	◯	◯
25.	benzo (a) pyrene	◯	◯	◯	◯
26.	benzo (b) fluoranthene	◯	◯	◯	◯
27.	benzo (g,h,i) perylene *	◯	◯	◯	◯
28.	benzo (k) fluoranthene *	◯	◯	◯	◯
29.	alpha-BHC	◯	◯	◯	◯
30.	beta-BHC	◯	◯	◯	◯
31.	delta-BHC	◯	◯	◯	◯
32.	gamma-BHC *	◯	◯	◯	◯
33.	bis (2-chloroethyl) ether *	◯	◯	◯	◯
34.	bis (2-chloroethoxy) methane *	◯	◯	◯	◯
35.	bis (2-chloroisopropyl) ether *	◯	◯	◯	◯
36.	Reserved				
37.	bis (2-ethylhexyl) phthalate	◯	◯	◯	◯
38.	bromodichloromethane *	◯	◯	◯	◯
39.	bromoform *	◯	◯	◯	◯
40.	bromomethane *	◯	◯	◯	◯
41.	4-bromophenylphenyl ether	◯	◯	◯	◯
42.	butylbenzyl phthalate	◯	◯	◯	◯
43.	carbon tetrachloride *	◯	◯	◯	◯
44.	chlordane	◯	◯	◯	◯
45.	4-chloro-3-methylphenol *	◯	◯	◯	◯
46.	chlorobenzene	◯	◯	◯	◯
47.	chloroethane *	◯	◯	◯	◯
48.	2-chloroethylvinyl ether	◯	◯	◯	◯
49.	chloroform *	◯	◯	◯	◯
50.	chloromethane *	◯	◯	◯	◯
51.	2-chloronaphthalene	◯	◯	◯	◯
52.	2-chlorophenol *	◯	◯	◯	◯
53.	4-chlorophenylphenyl ether	◯	◯	◯	◯
54.	chrysene *	◯	◯	◯	◯
55.	4, 4'-DDD *	◯	◯	◯	◯
56.	4, 4'-DDE *	◯	◯	◯	◯
57.	4, 4'-DDT *	◯	◯	◯	◯
58.	dibenzo (a,h) anthracene *	◯	◯	◯	◯
59.	dibromochloromethane	◯	◯	◯	◯
60.	1, 2-dichlorobenzene *	◯	◯	◯	◯
61.	1, 3-dichlorobenzene *	◯	◯	◯	◯
62.	1, 4-dichlorobenzene *	◯	◯	◯	◯
63.	3, 3'-dichlorobenzidine	◯	◯	◯	◯
64.	Reserved				
65.	1, 1-dichloroethane *	◯	◯	◯	◯
66.	1, 2-dichloroethane *	◯	◯	◯	◯
67.	1, 1-dichloroethene *	◯	◯	◯	◯
68.	trans-1, 2-dichloroethene *	◯	◯	◯	◯
69.	2, 4-dichlorophenol	◯	◯	◯	◯
70.	1, 2-dichloropropane *	◯	◯	◯	◯

MSD 045366

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
10 East Grand Ave., St. Louis, MO 63147, 314-436-8710

COMMERCIAL/INDUSTRIAL USER WASTEWATER SURVEY

1. MSD P-Reference Number P-0029713-00 (see instructions)
2. MSD Account Number 0246496-4 Telephone Number 747-0740
   Company Name WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
   Mailing Address 660 S EUCLID AVE.
   ST. LOUIS, MO 63110 (N)
   Premise Address 4515 MCKINLEY AVE - Scientific Med Research Bldg (SMRB)
   ST. LOUIS, MO 63110
3. No. of Employees ± 750 No. days/week 7 No. shifts/day 3 Peak months CONSTANT
4. Please check off all items which describe activities at your premise:

___Doctor/Dental Serv.	___Manufacturing	___Product Formulating	___Vehicle Maintenance
___Dry Cleaning	___Offices	___Product Packaging	___Veterinarian
___Health Care Serv.	___Photo/X-Ray Proc.	___Residential	___Warehousing
___Laundromat	___Printing	___Restaurant	___Wholesale Distribution
___Machine Shop	___Product Assembly	___Retail Sales	

X Other (describe) RESEARCH LABORATORIES - MEDICAL SCHOOL

5. Provide a brief description of the specific activities performed at this establishment:
   SCIENTIFIC / MEDICAL RESEARCH ON AN ACADEMIC SCALE
6. Raw materials & chemicals: CHEMICALS & LABORATORY REAGENTS
   Final products/services: LABORATORY RESEARCH
7. Are other companies located within the same building? Yes___ No X
   If yes, list them: N/A
8. Do you
   Use water in any manufacturing process? Yes___ No X Avg vol/day___
   Use water for cooling purposes? Yes___ No___ Avg vol/day___
   Use water in a boiler system? Yes___ No___ Avg vol/day___
   Use any air pollution devices w/water? Yes___ No___ Avg vol/day___
   Have any above ground storage tanks? Yes___ No X #___ Contents:___
   Have any underground storage tanks? Yes___ No X #___ Contents:___
   Use or have on site any oils or grease? Yes___ No X List:___
   Use or have on site any solvents? Yes X No___ List: SEE ATTACHED LIST #1
9. Do you prepare metal parts for any coating or painting step? Yes___ No X
   If yes, is an acid or acid-containing product used? Yes___ No X
   List the acid or product used: N/A
10. Do you generate hazardous waste? Yes X No___ MO hazardous waste generator # 001591
    If yes, but no HW #, explain:___
    List hazardous wastes generated: SEE ATTACHED LIST #2
11. ==> **ATTACH PLANS AND DRAWINGS AS REQUIRED (see instructions)**
12. Information furnished by: Name: RONALD COLLECH
    Title: SR. PROJ. MGR Telephone No. 314-747-2935

I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision; and the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

13. Name and title of signing official: JIM STUEBER, DIRECTOR OF FACILITIES ENGINEERING
    Telephone No. 747-2893
    Signature: [signature] Date 7-23-13

3/2007

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
10 East Grand Ave., St. Louis, MO 63147, 314-436-8710

COMMERCIAL/INDUSTRIAL USER WASTEWATER SURVEY

1. MSD P-Reference Number P-0008789-02 (see instructions)

2. MSD Account Number _____ Telephone Number _____

Company Name WASHINGTON UNIVERSITY SCHOOL OF MEDICINE

Mailing Address 660 S. EUCLID AVE
ST. LOUIS, MO 63110

Premise Address 4522 McKINLEY AVE. — EHS BLDG (5)
ST. LOUIS, MO 63110

3. No. of Employees 7100, No. days/week 5, No. shifts/day 2, Peak months _____

4. Please check off all items which describe activities at your premise:

___Doctor/Dental Serv.	___Manufacturing	___Product Formulating	___Vehicle Maintenance
___Dry Cleaning	___Offices	___Product Packaging	___Veterinarian
___Health Care Serv.	___Photo/X-Ray Proc.	___Residential	___Warehousing
___Laundromat	___Printing	___Restaurant	___Wholesale Distribution
___Machine Shop	___Product Assembly	___Retail Sales	

X Other (describe) College + University

5. Provide a brief description of the specific activities performed at this establishment:
Animal Specialities, Research organization

6. Raw materials & chemicals: Varies
Final products/services: _____

7. Are other companies located within the same building? Yes___ No X
If yes, list them: _____

8. Do you

Use water in any manufacturing process?	Yes___	No X	Avg vol/day	
Use water for cooling purposes?	Yes___	No___	Avg vol/day	291506
Use water in a boiler system?	Yes___	No___	Avg vol/day	170588
Use any air pollution devices w/water?	Yes___	No___	Avg vol/day	
Have any above ground storage tanks?	Yes___	No X	# ___	Contents:
Have any underground storage tanks?	Yes X	No___	# 2	Contents: Fuel oil
Use or have on site any oils or grease?	Yes ✓	No___	List: attached	
Use or have on site any solvents?	Yes ✓	No___	List: attached	

9. Do you prepare metal parts for any coating or painting step? Yes___ No X
If yes, is an acid or acid-containing product used? Yes___ No___
List the acid or product used: _____

10. Do you generate hazardous waste? Yes ✓ No___ MO hazardous waste generator # MOT 3000 10 857
If yes, but no HW#, explain: _____
List hazardous wastes generated: acids, alkaline, oils, grease, infectious, organic compounds, paint, radioactive, solvents, labreagents

11. ==> ATTACH PLANS AND DRAWINGS AS REQUIRED (see instructions)

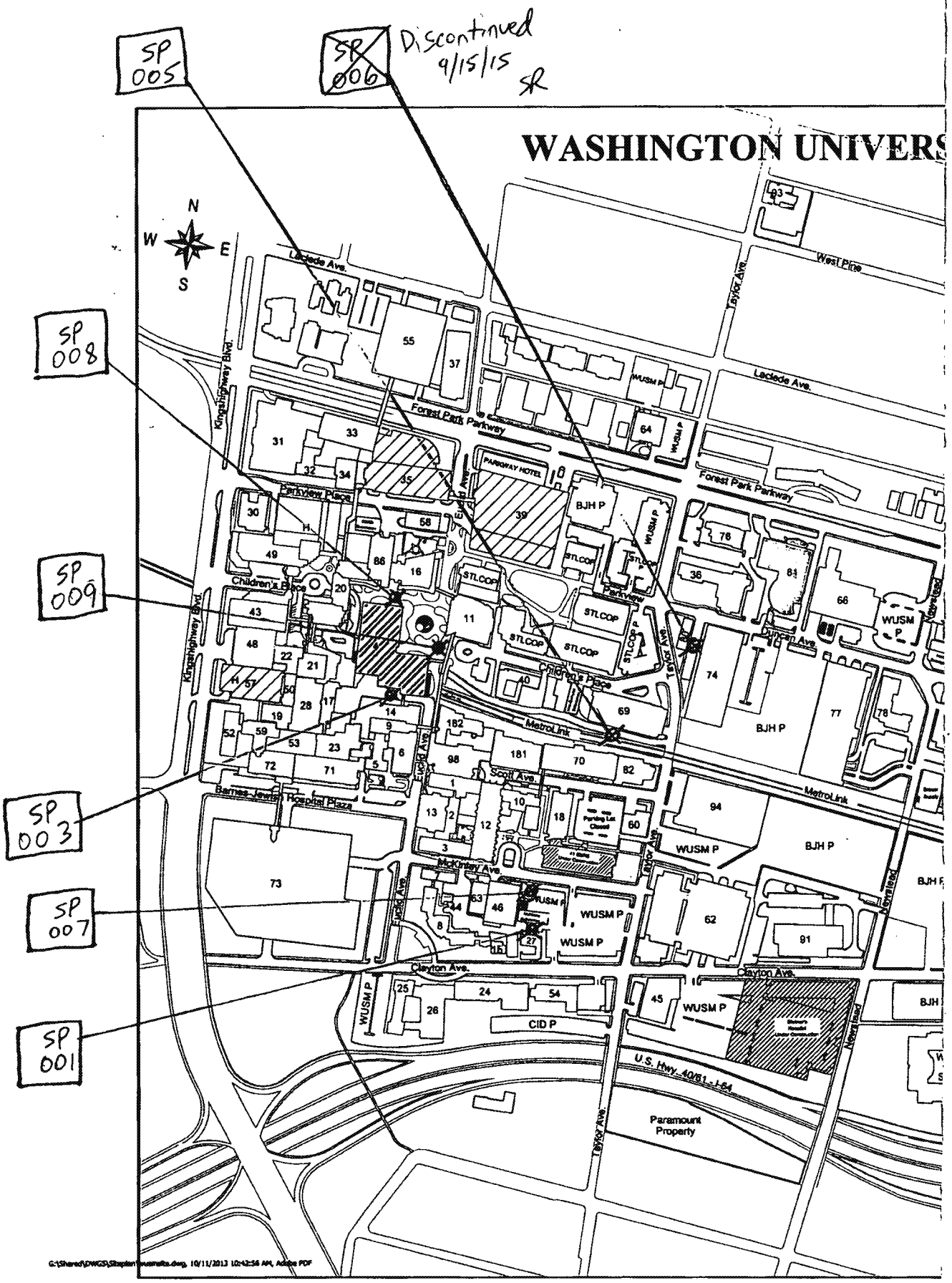
12. Information furnished by: Name: PAUL J. MAYER
Title: PROJECT MANAGER Telephone No. 314-747-5065

I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision; and the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

13. Name and title of signing official JIM STUEBER, DIRECTOR OF FACILITIES ENGINEERING
Telephone No. 314-362-3260
Signature: _____ Date 3/24/14

3/2007

MSD 045368


SP 005
SP 006
Discontinued 9/15/15 SR
WASHINGTON UNIVERS
SP 008
SP 009
SP 003
SP 007
SP 001
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Laclede Ave.
West Pine
Taylor Ave.
Forest Park Parkway
Kingshighway Blvd.
Parkview Place
Children's Place
Eucid Ave.
Parkway Hotel
Duncan Ave.
MetroLink
Scott Ave.
Barnes-Jewish Hospital Plaza
McKinley Ave.
Clayton Ave.
Newstead
U.S. Hwy. 40/61 - I-64
Paramount Property
BJH P
WUSM P
STLCOP
CID P
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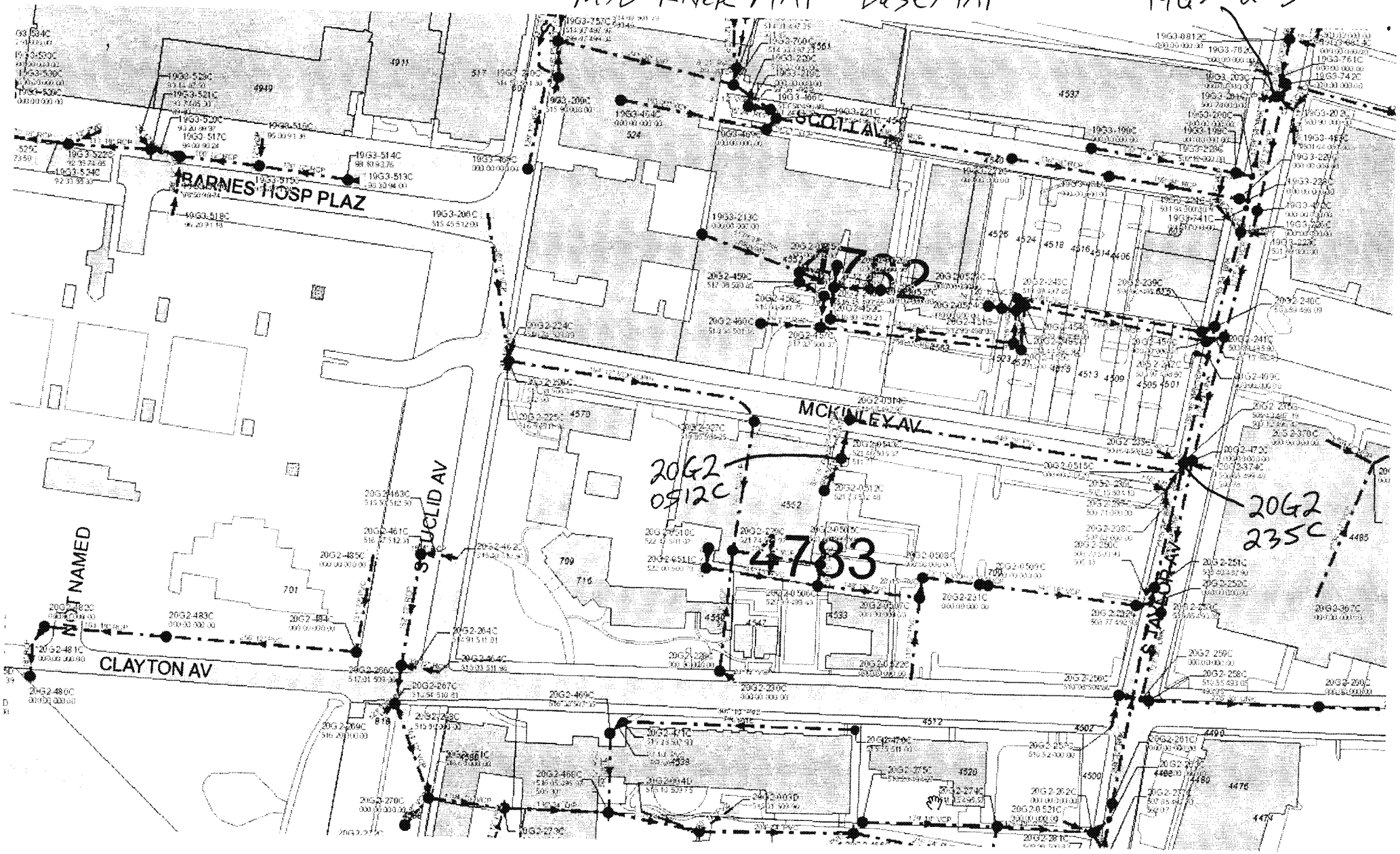
WASH. U. MED. SCHOOL
1024-3530-00

MSD-River MAP - Base MAP



MSD 045370

MSD SR

FOR MSD USE ONLY		
Account Number:	10243530-00	Category: SIU, NONSIU, CIU, NONTOX, TOXIC, SUR, NOPROC, MULTI
TA:	Bissell Point	
TS:	37 - Western Mill Creek	
Reviewer:	JAG	
Date:	7/13/12	

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
INDUSTRIAL USER QUESTIONNAIRE

Note to Signing Official: In accordance with Title 40 of the Code of Federal Regulations Part 403, Section 403.14, information and data provided in this questionnaire, which identifies the nature and frequency of discharge, shall be available to the public without restriction. Requests for confidential treatment of other information shall be governed by procedures specified in 40 CFR Part 2. Should a discharge permit be required for your facility, the information in this questionnaire will be used to develop the permit.

SECTION A - GENERAL INFORMATION

1. Company Name: Washington University School of Medicine
2. Mailing Address: 660 South Euclid Ave Campus Box 8229
   City: St. Louis State Missouri Zip Code 63310
3. Premise Address: 660 South Euclid
   City: St. Louis State Missouri Zip Code 63310
4. Person Authorized to Sign Reporting Documents (see note after Section H):
   Name: Livi Isringhausen
   Title: Environmental Compliance Manager Phone Number (314) 362-6735
5. Check One: (●) Existing Discharge ( ) Proposed Discharge
   If proposed, indicate discharge start date: _____
6. Shift Information:
   a. Number of shifts per work day: 2 and work days per week: 5
   b. Average number of employees per shift: 1st 6,500 2nd 600 3rd _____ Total: 7,100
   c. Shift start times: 1st 9:00 AM (HH:MM AM/PM) 2nd 6:00 PM (HH:MM AM/PM) 3rd _____ (HH:MM AM/PM)

SECTION B - PRODUCT OR SERVICE INFORMATION

1. Briefly describe the primary manufacturing or service activities at the premise address and list the applicable SIC number for each activity:

	PRIMARY ACTIVITY	SIC NUMBER
a.	Animal Specialities	0279
b.	College, Universities & Professional Schools	8221
c.	Non Commercial Research Organization	8733
d.		
e.		
f.		

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Company Name: [redacted]ington University School of Medicine
Premise Address: 660 South Euclid

SECTION B - PRODUCT OR SERVICE INFORMATION (Continued)

2. Are primary activities generally batch or continuous processes ? ◉ batch ○ continuous

3. Principal raw materials used: Varies

4. Principal products produced: Varies

5. Check all activities which are conducted at your premise in addition to the primary activities described in B.1 above Indicate the SIC number, if known. Do not check activities which are already included in B.1.

ACTIVITY (with related 40 CFR Part)	SIC NO.	ACTIVITY (with related 40 CFR Part)	SIC NO.
☐ a. Adhesive and Sealants Mfg.		☐ nn. Nonferrous Metals Mfg. (421)	
☐ b. Aluminum Forming (467)		☐ oo. Oil and Gas Extraction (435)	
☐ c. Asbestos Mfg. (427)		☐ pp. Ore Mining and Dressing (440)	
☐ d. Battery Mfg. (461)		☐ qq. Organic Chem/Plastics/Synthetic Fibers Mfg (414)	
☐ e. Carbon Black Mfg. (458)		☐ rr. Paint Formulating (446)	
☐ f. Cement Mfg. (411)		☐ ss. Painting, Finishing or Paint Stripping	
☐ g. Centralized (non-Haz.) Waste Treatment (437)		☐ tt. Parts Washing	
☐ h. Coal Mining (434)		☐ uu. Paving and Roofing Mat'ls (Tars & Asphalt) (443)	
☐ i. Coil Coating (465)		☐ vv. Pesticide Chem Mfg/Formulating/Packaging (455)	
☐ j. Concentrated Animal Feeding Operations (412)		☐ ww. Petroleum Refining (419)	
☐ k. Concentrated Aquatic Animal Production (451)		☐ xx. Pharmaceutical Mfg. (439)	
☐ l. Copper Forming (468)		☐ yy. Phosphate Mfg. (422)	
☐ m. Dairy Products Processing (405)		☐ zz. Photographic Processing (459)	
☐ n. Drum Reconditioning		☐ aaa. Plastic Molding and Forming (463)	
☐ o. Electrical and Electronic Components (469)		☐ bbb. Porcelain Enameling (466)	
☐ p. Electroplating (413)		☐ ccc. Printing and Publishing	
☐ q. Explosives Mfg. (457)		☐ ddd. Pulp, Paper and Paperboard Mfg. (430)	
☐ r. Ferroalloy Mfg. (424)		☐ eee. Q.C. Laboratory	
☐ s. Fertilizer Mfg. (418)		☐ fff. R & D Laboratory	
☒ t. Food Preparation		☐ ggg. Radioactive Materials Processing	
☐ u. Fruit and Vegetable Processing (407)		☐ hhh. Repair Shop, Garage	
☐ v. General Offices		☐ iii. Rubber and Rubber Products Mfg. (428)	
☐ w. Glass Mfg. (426)		☐ jjj. Seafood Processing (408)	
☐ x. Grain Milling (406)		☐ kkk. Soap and Detergent Mfg. (417)	
☐ y. Gum and Wood Chemical Mfg. (454)		☐ lll. Solvent Recycling	
☐ z. Haz. Waste Treatment, Storage or Disposal		☐ mmm. Steam Electric Power Generation (423)	
☐ aa. Health Care or Hospital (460)		☐ nnn. Sugar Processing (409)	
☐ bb. Industrial Laundry		☐ ooo. Textile Mills (410)	
☐ cc. Ink Formulating (447)		☐ ppp. Timber Products Mfg. (429)	
☐ dd. Inorganic Chemicals Mfg. (415)		☐ qqq. Transportation Equipment Cleaning (442)	
☐ ee. Iron and Steel Mfg. (420)		☐ rrr. Transportation Services	
☐ ff. Leather Tanning and Finishing (425)		☐ sss. Used Oil Reclamation	
☐ gg. Machine Shop		☒ ttt. Vehicle/Equipment Washing	
☐ hh. Machinery Mfg. or Rebuilding (438)		☐ uuu. Warehousing	
☐ ii. Meat Processing (432)		☐ vvv. Waste Combustors (444)	
☐ jj. Metal Finishing (433)		☐ www. Waste Recycling	
☐ kk. Metal Molding and Casting (464)		☐ xxx. Others (Describe) Varies	
☐ ll. Mineral Mining and Processing (436)		☐ yyy. Others (Describe)	
☐ mm. Nonferrous Metals Forming/Metal Powders (471)		☐ zzz. Others (Describe)	

6. Are your activities subject to seasonal variation? If "Yes," explain and indicate the month(s) of peak activity:

○ Yes ◉ No

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MSD 045372

Company Name: Washington University School of Medicine
Premise Address: 660 South Euclid

SECTION C - WATER CONSUMPTION AND WASTEWATER DISCHARGES

1. Raw Water Source(s):
   - [x] City of St. Louis Water Div.
   - [ ] Missouri American Water Co.
   - [ ] Other municipal source _____
   - [ ] Hauled by contractor
   - [ ] Surface water
   - [ ] Private well
   - [ ] Other (describe) _____

2. Water Bill Addressee: Varies - See spreadsheet

3. Water Service Account Numbers: Varies -see spreadsheet

4. List past twelve months water usage from:

				[x] Water Bills	[ ] Other Sources
1st 3 mo period	6/1/11	through	8/31/11	155,855 Ccf	Ccf
2nd 3 mo period	9/1/11	through	11/30/11	127,686.09Ccf	Ccf
3rd 3 mo period	12/1/11	through	2/29/12	89,403.5 Ccf	Ccf
4th 3 mo period	3/1/12	through	5/31/12	99,197.7 Ccf	Ccf

Water Bills and Other Sources Total: 472,242.09 Ccf = 967773 GPD-calendar = ~~1354882.2~~ 967773 GPD-work

5. Describe any treatment or conditioning process performed on the raw water before use (list regeneration/reject water volume in 6h below):

6. Identify all water uses within your facility:

Water Uses	Estimated Average Daily Use (Gal per workday)
a. Sanitary	193923
b. Irrigation & lawn watering	2481
c. Non-contact cooling water	291506
d. Contact cooling water	0
e. Process water	229244
f. Plant & equipment washdown	20618
g. Boiler	170588
h. Regeneration/reject water	59413
i. Other uses	0
j. Total of USES (6a through 6h):	967773

(6a through 6i must equal total at item 4)

7. Identify all water losses and wastewater discharges from your facility:

Water Uses	Estimated Average Daily Loss/Discharge (Gal per workday)
a. Municipal sewer	728354
b. Watercourse, storm drain, surface	2481
c. Haulers	0
d. Evaporation	236938
e. Contained in product	0
f. Total of LOSSES & DISCHARGES:	967773

(7a through 7e must equal total at 6j)

8. For each activity you listed in Sections B.1 and B.5, list the average water usage and average wastewater discharge per workday. Attach additional sheets, if needed. (Total Avg. Water Use must equal total for 6e)

Item No	Activity	Type of Discharge: Cont	Batch	None	Avg. Water Use (GPD)	Avg. Discharge to Mun Sewer (GPD)	Date when activity first commenced at this facility
	Food Preparation	●	○	○	15027.13		
	Laboratory and Animal Care	●	○	○	210848.22		
	Photo Processing	●	○	○	3368.65		
		○	○	○			
		○	○	○			
		○	○	○			
		○	○	○			
		○	○	○			
				Total:	229244		

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REVISED – replaces 7/13/12 p. 3 –JAC

Company Name: [redacted]ington University School of Medicine
Premise Address: 660 South Euclid

SECTION C - WATER CONSUMPTION AND WASTEWATER DISCHARGES

1. Raw Water Source(s):
   - [x] City of St. Louis Water Div.
   - [ ] Missouri American Water Co.
   - [ ] Other municipal source _____
   - [ ] Hauled by contractor
   - [ ] Surface water
   - [ ] Private well
   - [ ] Other (describe) _____

2. Water Bill Addressee: Varies - See spreadsheet

3. Water Service Account Numbers: Varies -see spreadsheet

4. List past twelve months water usage from:

				[x] Water Bills	[ ] Other Sources
1st 3 mo period	6/1/11	through	8/31/11	169,023 Ccf	Ccf
2nd 3 mo period	9/1/11	through	11/30/11	136,643.11 Ccf	Ccf
3rd 3 mo period	12/1/11	through	2/29/12	92,491.95 Ccf	Ccf
4th 3 mo period	3/1/12	through	5/31/12	105,928.36 Ccf	Ccf

Water Bills and Other Sources Total: 504,086.51 Ccf = 1033032 GPD-calendar = 1446244.8 GPD-work

5. Describe any treatment or conditioning process performed on the raw water before use (list regeneration/reject water volume in 6h below):

6. Identify all water uses within your facility:

Water Uses	Estimated Average Daily Use (Gal per workday)
a. Sanitary	422,103
b. Irrigation & lawn watering	0
c. Non-contact cooling water	461343
d. Contact cooling water	0
e. Process water	347,379
f. Plant & equipment washdown	78,780
g. Boiler	11,091
h. Regeneration/reject water	125,549
i. Other uses	
j. Total of USES (6a through 6h):	~~461343~~ 1,446,245

(6a through 6i must equal total at item 4)

7. Identify all water losses and wastewater discharges from your facility:

Water Uses	Estimated Average Daily Loss/Discharge (Gal per workday)
a. Municipal sewer	
b. Watercourse, storm drain, surface	
c. Haulers	
d. Evaporation	
e. Contained in product	
f. Total of LOSSES & DISCHARGES:	

(7a through 7e must equal total at 6j)

8. For each activity you listed in Sections B.1 and B.5, list the average water usage and average wastewater discharge per workday. Attach additional sheets, if needed. (Total Avg. Water Use must equal total for 6e)

Item No	Activity	Type of Discharge: Cont	Batch	None	Avg. Water Use (GPD)	Avg. Discharge to Mun Sewer (GPD)	Date when activity first commenced at this facility
	Food Preperation	◉	○	○	25,510		
	Laboratory and Animal Care	◉	○	○	321,870		
		○	○	○			
		○	○	○			
		○	○	○			
		○	○	○			
		○	○	○			
		○	○	○			
Total:					~~8~~ 347,380		

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see Revised p3 dated 8/29/12 - JAG

Company Name: Washington University School of Medicine
Premise Address: 660 South Euclid

SECTION D - SEWER CONNECTION INFORMATION

1. Attach a scale drawing of your premise, which shows (for permit renewals, highlight any changes since last application):
   a. All buildings, structures, alleys, streets and other pertinent features.
   b. All sewers and drains, including all connections, inlets, manholes, vents and other access or control structures. Identify each sewer as sanitary, storm or combined and indicate its size.
   c. A sampling point for each connection to the public sewer.
   d. A sampling point for each discharge from a federally regulated categorical process.
   e. A sampling point for each discharge to a separate storm sewer or watercourse.

2. List each sampling point identified in 1c, d and e above and each connection for which there is no sampling point. Assign a sequential reference number to each location, starting with No. 1. Attach additional sheets, if needed.

Reference Number	Sewer Size (inches)	Description of sewer sampling point or connection. (Vent, manhole, valve, other appurtenance. Indicate size & location)	Upstream to other point? Yes	No	List Ref. No.	Total avg flow per workday(GPD)
1		see attached	○	○	1	14839
2		see attached	○	○	3	64103
3		see attached	○	○	5	341328
4		see attached	○	○	6	1034
5		see attached	○	○	7	23450
6		see attached	○	○	8	141800
7		see attached	○	○	9	141800

Grand Total Average Flow per Workday: 728354 0
JAG

SECTION E - WASTEWATER INFORMATION

1. For each point listed in Section D.2 above, list the wastewater discharge corresponding to each water usage listed in Section C.6. Attach additional sheets, if needed.

Type of Wastewater	Discharge Quantity (GPD-workday) for each sampling point or connection listed in D.2: 1 (upstream to 1)	2 3 (upstream to 3)	3 5 (upstream to 5)	4 6 (upstream to 6)	5 7 (upstream to 7)	6 8 (upstream to 8)	7 9 (upstream to 9)	Facility Total (See instr.)
a. Sanitary	5199	31974	75445	649	5248	49681	49681	217777
c. Non-contact cooling water	3250	6120	88038	0	413	31057	31057	159935
d. Contact cooling water	0	0	0	0	0	0	0	0
e. Process (From C.6)				0				0
Food Preperation	0	0	9176	0	0	0	0	9176
Photo	671	546	840	0	0	6412	6412	14881
Lab and animal	1733	23284	93406	0	10327	16560	16560	161870
								0
								0
								0
								0
								0
f. Plant & equipment washdown	468	2179	1996	485	7462	4472	4472	21534
g. Boiler blowdown	0	0	39666	0	0	0	0	39666
h. Regeneration/reject water	03518	0	32761	0	0	33618	33618	103515
i. Other								0
Totals (Same as D.2):	14839	64103	341328	1034	23450	141800	141800	728354

2. If any of the above points discharge to a watercourse or to a separate storm sewer, complete the following:

NPDES Outfall Number							
NPDES Permit Number							

3. Do any of the above sampling points also convey stormwater from your premise ?

JAG 9/5/12	YES	YES	YES	YES	YES	YES	YES

4. Do you pretreat any of the wastes discharged through any of the above points ?

JAG 9/5/12	YES	YES	YES	YES	YES	YES	YES

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REVISED - replaces 7/13/12 p.4 - JAG

Company Name: [redacted]ington University School of Medicine
Premise Address: 660 South Euclid

SECTION D - SEWER CONNECTION INFORMATION

1. Attach a scale drawing of your premise, which shows (for permit renewals, highlight any changes since last application):
   a. All buildings, structures, alleys, streets and other pertinent features.
   b. All sewers and drains, including all connections, inlets, manholes, vents and other access or control structures. Identify each sewer as sanitary, storm or combined and indicate its size.
   c. A sampling point for each connection to the public sewer.
   d. A sampling point for each discharge from a federally regulated categorical process.
   e. A sampling point for each discharge to a separate storm sewer or watercourse.

2. List each sampling point identified in 1c, d and e above and each connection for which there is no sampling point. Assign a sequential reference number to each location, starting with No. 1. Attach additional sheets, if needed.

Reference Number	Sewer Size (inches)	Description of sewer sampling point or connection. (Vent, manhole, valve, other appurtenance. Indicate size & location)	Upstream to other point? Yes / No		List Ref. No.	Total avg flow per workday(GPD)
1		see attached	○	○	1	29,655
2		see attached	○	○	3	131,914
3		see attached	○	○	5	695,359
4		see attached	○	○	6	1,943
5		see attached	○	○	7	48,062
6		see attached	○	○	8	269,656
7		see attached	○	○	9	269,656

Grand Total Average Flow per Workday: 1,446,245 gpd

SECTION E - WASTEWATER INFORMATION

1. For each point listed in Section D.2 above, list the wastewater discharge corresponding to each water usage listed in Section C.6. Attach additional sheets, if needed.

Type of Wastewater	Discharge Quantity (GPD-workday) for each sampling point or connection listed in D.2							Facility Total (See instr.)
	1	23	25	26	27	28	29	
	upstream to 1	upstream to 3	upstream to 5	upstream to 6	upstream to 7	upstream to 8	upstream to 9	
a. Sanitary	4129	53557	132687	1123	9813	55056	55056	311421
c. Non-contact cooling water	6647	12516	180053	0	845	4739	4739	209539
d. Contact cooling water	0	0	0	0	0	0	0	0
e. Process (From C.8)	10727	61384	230411	0	22143	124237	124237	573139
								0
								0
								0
								0
								0
								0
								0
								0
f. Plant & equipment washdown	957	4456	4082	820	15261	85624	85624	196824
g. Boiler blowdown	7195	0	81124	0	0	0	0	88319
h. Regeneration/reject water	0	0	67002	0	0	0	0	67002
i. Other								0
Totals (Same as D.2):	29655	131913	695359	1943	48062	269656	269656	1446244

2. If any of the above points discharge to a watercourse or to a separate storm sewer, complete the following:

NPDES Outfall Number

NPDES Permit Number

3. Do any of the above sampling points also convey stormwater from your premise ?

4. Do you pretreat any of the wastes discharged through any of the above points ?

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see Revised p.4 dated 8/29/12 -JAG

MSD 045376

Company Name: [redacted]hington University School of Medicine
Premise Address: 660 South Euclid

SECTION E - WASTEWATER INFORMATION (Continued)

5. Describe the type of wastewater pretreatment you employ prior to each point for which you marked "Yes" in E.4

Ref. No.	Pretreatment System Description
	None
	pH adjustment – SP001, SP003, SP005, SP006, SP007, SP008, SP009
	silver recovery – SP001, SP003, SP005, SP006, SP008, SP009
	Grease trap – SP005
	(Above PT info provided by Liv Fsringhausen per our 9/5/12 phone conversation – JAG)

6. Does your facility have a written:

a.	Spill control plan ?	(•) Yes	( ) No	c.	Solvent management plan ?	(•) Yes	( ) No
b.	Waste minimization plan ?	( ) Yes	(•) No	d.	Slug discharge control plan ?	( ) Yes	(•) No

7. If any wastewater analyses have been performed on the wastewater discharges from your facility attach copies of the most recent data. Be sure to specify the locations from which the samples were collected. Attach sketches, plans, drawings, etc. as necessary. Permit renewal applications, only, may skip this item.

8. Priority Pollutant Information: Check one of the four boxes by each listed chemical to indicate whether it is: "Suspected Absent", "Known Absent", "Suspected Present" or "Known Present" ON YOUR PREMISE. Any chemical which is used in your manufacturing or service activity or is generated as a product or as a by-product should be marked "Known Present." Some pollutants are known by other names. Refer to the instruction booklet for synonyms for those pollutants which have an asterisk (*):

SA = "Suspected Absent" KA = "Known Absent" SP = "Suspected Present" KP = "Known Present"

Item No	PRIORITY POLLUTANT	SA	KA	SP	KP
1.	asbestos (fibrous)	( )	( )	(•)	( )
2.	cyanide (total)	( )	( )	( )	(•)
3.	antimony (total)	( )	( )	( )	(•)
4.	arsenic (total)	( )	( )	( )	(•)
5.	beryllium (total)	( )	( )	( )	(•)
6.	cadmium (total)	( )	( )	( )	(•)
7.	chromium (total)	( )	( )	( )	(•)
8.	copper (total)	( )	( )	( )	(•)
9.	lead (total)	( )	( )	( )	(•)
10.	mercury (total)	( )	( )	( )	(•)
11.	nickel (total)	( )	( )	( )	(•)
12.	selenium (total)	( )	( )	( )	(•)
13.	silver (total)	( )	( )	( )	(•)
14.	thallium (total)	( )	( )	( )	(•)
15.	zinc (total)	( )	( )	( )	(•)
16.	acenaphthene	( )	( )	( )	(•)
17.	acenaphthylene	( )	(•)	( )	( )
18.	acrolein	( )	( )	( )	(•)
19.	acrylonitrile	( )	( )	( )	(•)
20.	aldrin	( )	( )	(•)	( )
21.	anthracene	( )	( )	( )	(•)
22.	benzene	( )	( )	( )	(•)
23.	benzidine	( )	( )	( )	(•)
24.	benzo (a) anthracene *	( )	(•)	( )	( )
25.	benzo (a) pyrene	( )	( )	( )	(•)
26.	benzo (b) fluoranthene	( )	(•)	( )	( )
27.	benzo (g,h,i) perylene *	( )	(•)	( )	( )
28.	benzo (k) fluoranthene *	( )	(•)	( )	( )
29.	alpha-BHC	( )	(•)	( )	( )
30.	beta-BHC	( )	(•)	( )	( )
31.	delta-BHC	( )	(•)	( )	( )
32.	gamma-BHC *	( )	( )	( )	(•)
33.	bis (2-chloroethyl) ether *	( )	( )	(•)	( )
34.	bis (2-chloroethoxy) methane *	( )	( )	(•)	( )
35.	bis (2-chloroisopropyl) ether *	( )	( )	(•)	( )

Item No	PRIORITY POLLUTANT	SA	KA	SP	KP
36.	Reserved				
37.	bis (2-ethylhexyl) phthalate	( )	(•)	( )	( )
38.	bromodichloromethane *	( )	(•)	( )	( )
39.	bromoform *	( )	( )	( )	(•)
40.	bromomethane *	( )	(•)	( )	( )
41.	4-bromophenylphenyl ether	( )	(•)	( )	( )
42.	butylbenzyl phthalate	( )	(•)	( )	( )
43.	carbon tetrachloride *	( )	( )	( )	(•)
44.	chlordane	( )	( )	(•)	( )
45.	4-chloro-3-methylphenol *	( )	(•)	( )	( )
46.	chlorobenzene	( )	( )	( )	(•)
47.	chloroethane *	( )	(•)	( )	( )
48.	2-chloroethylvinyl ether	( )	(•)	( )	( )
49.	chloroform *	( )	( )	( )	(•)
50.	chloromethane *	( )	(•)	( )	( )
51.	2-chloronaphthalene	( )	(•)	( )	( )
52.	2-chlorophenol *	( )	( )	( )	(•)
53.	4-chlorophenylphenyl ether	( )	(•)	( )	( )
54.	chrysene *	( )	(•)	( )	( )
55.	4, 4'-DDD *	( )	(•)	( )	( )
56.	4, 4'-DDE *	( )	(•)	( )	( )
57.	4, 4'-DDT *	( )	(•)	( )	( )
58.	dibenzo (a,h) anthracene *	( )	(•)	( )	( )
59.	dibromochloromethane	( )	(•)	( )	( )
60.	1, 2-dichlorobenzene *	( )	( )	( )	(•)
61.	1, 3-dichlorobenzene *	( )	(•)	( )	( )
62.	1, 4-dichlorobenzene *	( )	( )	( )	(•)
63.	3, 3'-dichlorobenzidine	( )	(•)	( )	( )
64.	Reserved				
65.	1, 1-dichloroethane *	( )	(•)	( )	( )
66.	1, 2-dichloroethane *	( )	( )	( )	(•)
67.	1, 1-dichloroethene *	( )	(•)	( )	( )
68.	trans-1, 2-dichloroethene *	( )	(•)	( )	( )
69.	2, 4-dichlorophenol	( )	( )	(•)	( )
70.	1, 2-dichloropropane *	( )	(•)	( )	( )

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MSD 045377

Company Name: [redacted]hington University School of Medicine
Premise Address: 660 South Euclid

SECTION E - WASTEWATER INFORMATION (Continued)

Priority Pollutant Information (Continued)

SA = "Suspected Absent" KA = "Known Absent" SP = "Suspected Present" KP = "Known Present"

Item No	PRIORITY POLLUTANT	SA	KA	SP	KP
71.	(cis and trans) 1, 3-dichloropropene *	○	●	○	○
72.	dieldrin	○	○	○	●
73.	diethylphthalate *	○	○	○	●
74.	2, 4-dimethylphenol *	○	●	○	○
75.	dimethyl phthalate	○	●	○	○
76.	di-n-butyl phthalate	○	●	○	○
77.	di-n-octyl phthalate *	○	●	○	○
78.	4, 6-dinitro-2-methylphenol *	○	●	○	○
79.	2, 4-dinitrophenol	○	○	●	○
80.	2, 4-dinitrotoluene	○	○	○	●
81.	2, 6-dinitrotoluene	○	○	●	○
82.	1, 2-diphenylhydrazine *	○	○	○	●
83.	endosulfan I *	○	●	○	○
84.	endosulfan II *	○	●	○	○
85.	endosulfan sulfate	○	●	○	○
86.	endrin	○	●	○	○
87.	endrin aldehyde	○	●	○	○
88.	ethylbenzene	○	○	○	●
89.	fluoranthene	○	●	○	○
90.	fluorene *	○	●	○	○
91.	heptachlor	○	●	○	○
92.	heptachlor epoxide	○	○	○	●
93.	hexachlorobenzene *	○	○	●	○
94.	hexachlorobutadiene	○	●	○	○
95.	hexachlorocyclopentadiene *	○	○	○	●
96.	hexachloroethane *	○	○	○	●
97.	indeno (1, 2, 3-cd) pyrene *	○	●	○	○
98.	isophorone *	○	○	○	●
99.	methylene chloride *	○	○	○	●

Item No	PRIORITY POLLUTANT	SA	KA	SP	KP
100.	naphthalene	○	○	○	●
101.	nitrobenzene	○	○	○	●
102.	2-nitrophenol	○	○	○	●
103.	4-nitrophenol *	○	○	○	●
104.	N-nitrosodimethylamine *	○	●	○	○
105.	N-nitrosodi-n-propylamine *	○	●	○	○
106.	N-nitrosodiphenylamine	○	●	○	○
107.	PCB-1016 *	●	○	○	○
108.	PCB-1221 *	●	○	○	○
109.	PCB-1232 *	●	○	○	○
110.	PCB-1242 *	●	○	○	○
111.	PCB-1248 *	●	○	○	○
112.	PCB-1254 *	●	○	○	○
113.	PCB-1260 *	●	○	○	○
114.	pentachlorophenol	○	○	○	●
115.	phenanthrene	○	○	○	●
116.	phenol	○	○	○	●
117.	pyrene	○	○	○	●
118.	2, 3, 7, 8-tetrachlorodibenzo-p-dioxin *	○	○	●	○
119.	1, 1, 2, 2-tetrachloroethane *	○	○	○	●
120.	tetrachloroethene *	○	●	○	○
121.	toluene *	○	○	○	●
122.	toxaphene	○	●	○	○
123.	1, 2, 4-trichlorobenzene	○	●	○	○
124.	1, 1, 1-trichloroethane *	○	○	●	○
125.	1, 1, 2-trichloroethane *	○	○	●	○
126.	trichloroethene *	○	○	●	○
127.	Reserved				
128.	2, 4, 6-trichlorophenol	○	○	●	○
129.	vinyl chloride *	○	●	○	○

9. For priority pollutants in E.8, which are indicated "Known Present" or "Suspected Present", list and provide the following information for each: (Attach additional sheets, if needed.)

Item No.	PRIORITY POLLUTANT	HOW USED (for KP) or WHY SUSPECTED (for SP)	ANNUAL USAGE for KP(lbs)	LOSS TO SEWER for KP(lbs)
		See attached	Varies	None

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Company Name: [redacted]hington University School of Medicine
Premise Address: 660 South Euclid

SECTION F - NON-SEWERED WASTES

1. Do you generate any liquid wastes or sludges, as described in item 2 below, which are not disposed in the sewer system?

(●) Yes ( ) No

If "Yes" complete items 2 and 3 below. Note: Be sure to include wastewaters listed in Section C.7.c.
If "No" skip remainder of this section.

2. Information on non-sewered waste:

Type of Waste	Estimated Quantity Disposed/yr	Units	Store On-Site	Dispose On-Site	Dispose Off-Site
[x] Acids and/or Alkalies	with lab packs		[ ]	[ ]	[x]
[x] Equipment Oils and/or Grease	8000	pounds	[ ]	[ ]	[x]
[x] Infectious Waste	370,200	pounds	[ ]	[ ]	[x]
[ ] Inks/ Dyes			[ ]	[ ]	[ ]
[x] Kitchen/Food Service Grease	6000	pounds	[ ]	[ ]	[x]
[x] Organic Compounds	27,000	pounds	[ ]	[ ]	[x]
[x] Paints or Paint Sludges	2700	pounds	[ ]	[ ]	[ ]
[ ] Pesticides			[ ]	[ ]	[ ]
[ ] Pretreatment Sludges			[ ]	[ ]	[ ]
[x] Radioactive Waste	1500	pounds	[ ]	[ ]	[x]
[x] Solvents/Thinners	53,000	pounds	[ ]	[ ]	[x]
[x] Other Lab chemicals and reagents	13,500	pounds	[ ]	[ ]	[x]
[ ] Other			[ ]	[ ]	[ ]
[ ] Other			[ ]	[ ]	[ ]

3. List your USEPA and/or MDNR Hazardous Waste generator numbers:

USEPA MOT300010857 MDNR 001591

SECTION G - INDUSTRIAL WASTE SURCHARGE INFORMATION

1. Provide the following analytical information for each sampling point or each connection to the public sewer only if your water usage exceeds 80 Ccf per month (1,995 Gal per calendar day). Representative samples of the wastewater in each sewer must be collected and analyzed for the listed parameters. Report the daily average concentrations in mg/l for each point. Permit renewal applications, only, may skip Section G regardless of water usage volume.

Parameter	Sewer Reference Numbers (Refer to Section D.2) If more than 7, attach additional sheets						
	1	2	3	4	5	6	7
	See attached						
Date Sampled							
Sample Start Time (eg. HH:MM PM)							
Sample End Time (eg. HH:MM PM)							
Type of Sample							
Flow (GPD)							
Biochemical Oxygen Demand (5 day)							
Chemical Oxygen Demand							
Total Suspended Solids							

Collected By (Name of organization):

Analyzed By (Name of organization):

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Company Name: [redacted]ington University School of Medicine
Premise Address: 660 South Euclid

SECTION H - CERTIFICATION AND SIGNATURE

1. The following individual may be contacted regarding the information contained in this questionnaire:

Name of Contact Person: Livi Isringhausen

Title: Environmental Compliance Manager Phone Number 314-362-6735

2. "I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name of Signing Official: James T Stueber

Title: Director of Facilities Engineering Phone Number 314-362-3261

Signature: [signature] Date: 7-11-12

This certification, along with any other reporting documents, must be signed by an individual described as follows: a responsible corporate officer if the user is a corporation; a general partner if the user is a partnership; the proprietor if the user is a sole proprietorship; a duly authorized representative of the individual just described, if that individual submits a written authorization which specifies a person or position within the company, having responsibility for the overall operation of the facility from which the discharge originates, such as a plant manager, or overall responsibility for environmental matters at the company.

List attachments included with this questionnaire:

Sample Point Map	Self Monitoring Report
Priority Pollutant Chart	

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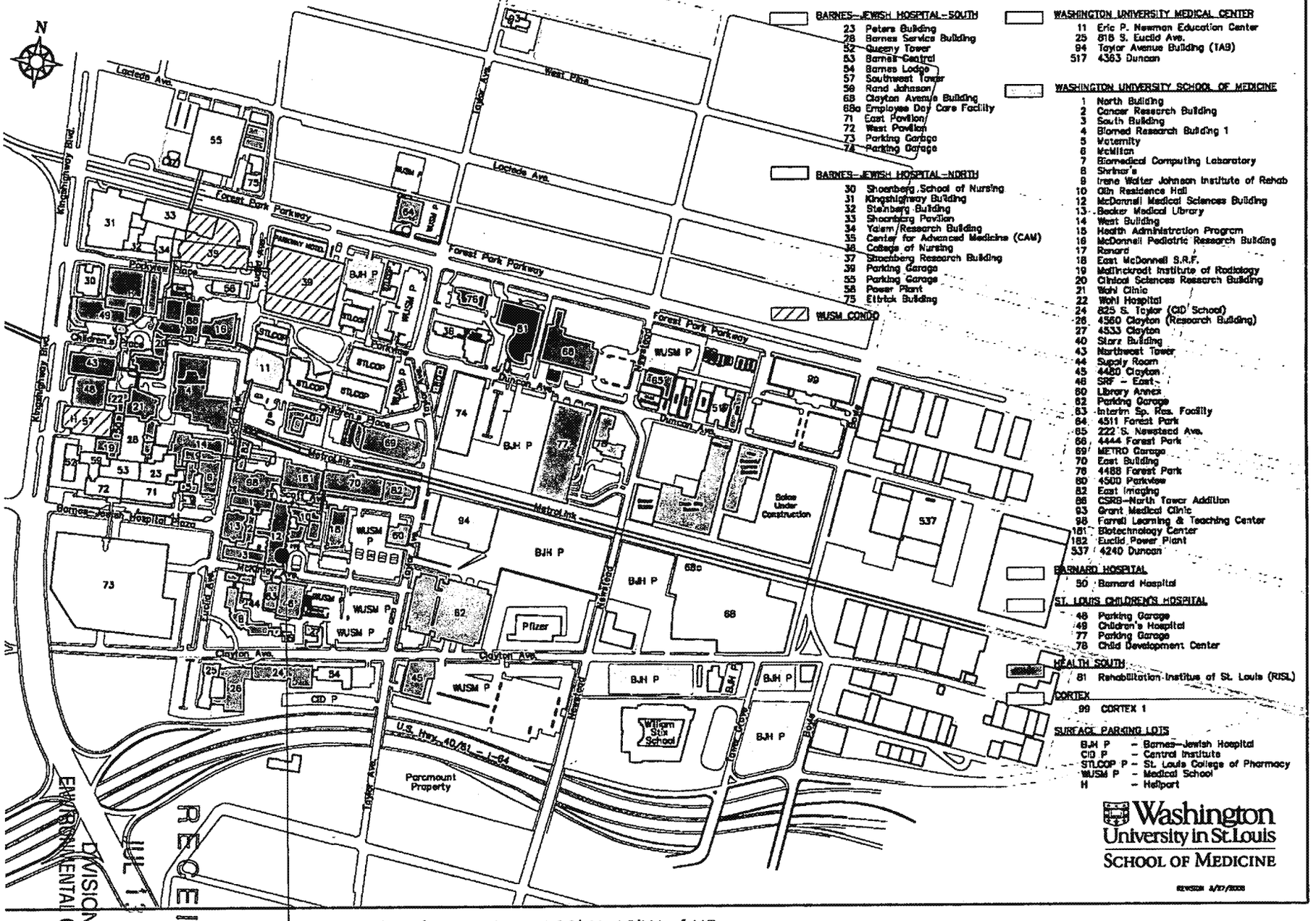

SP001- Flow form W in MH 30' N, 10'W of NE corner of building 27 (in alley)

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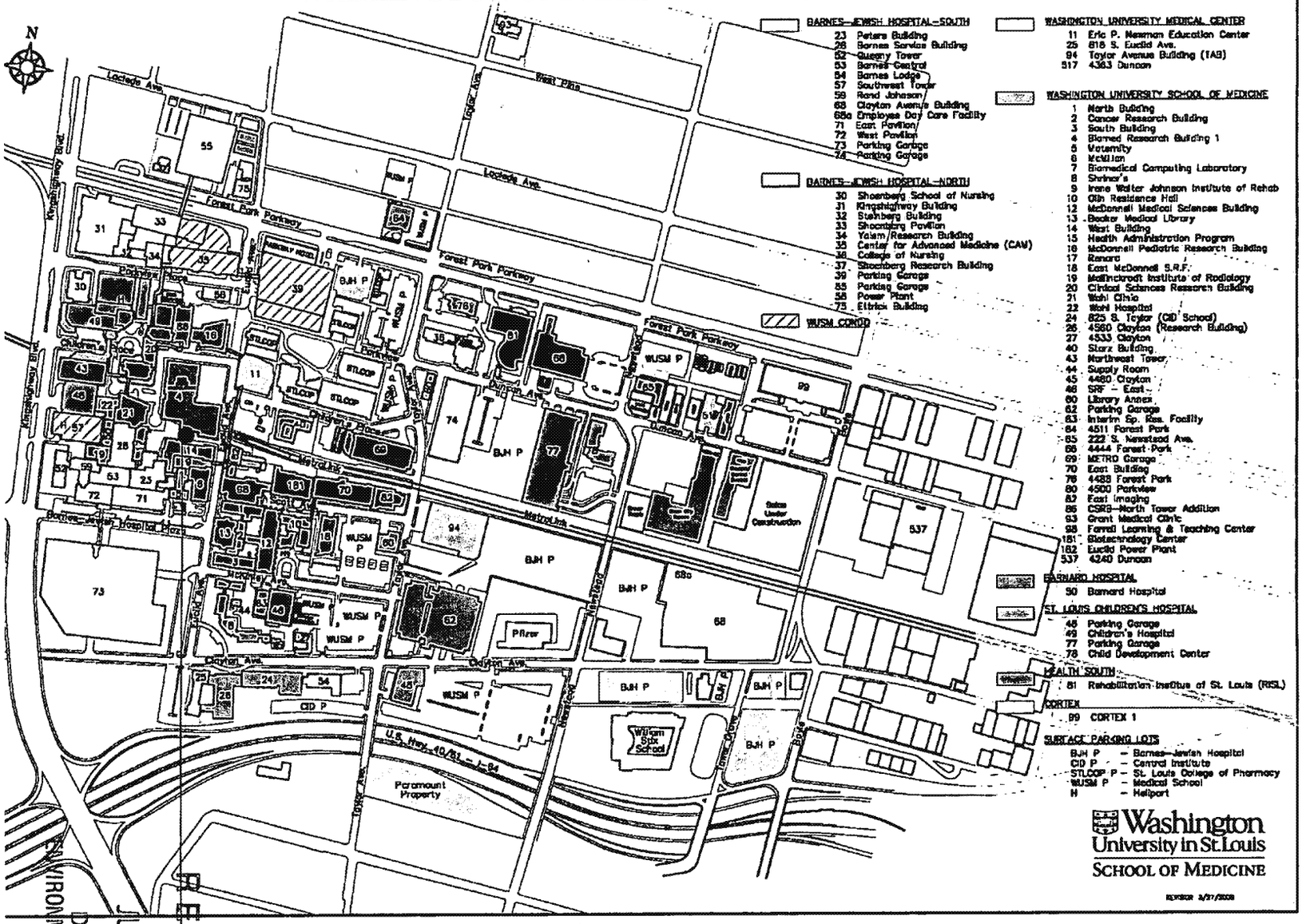

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SP003 - Flow from S in MH N of building 14 in drive, 6' S of O_2

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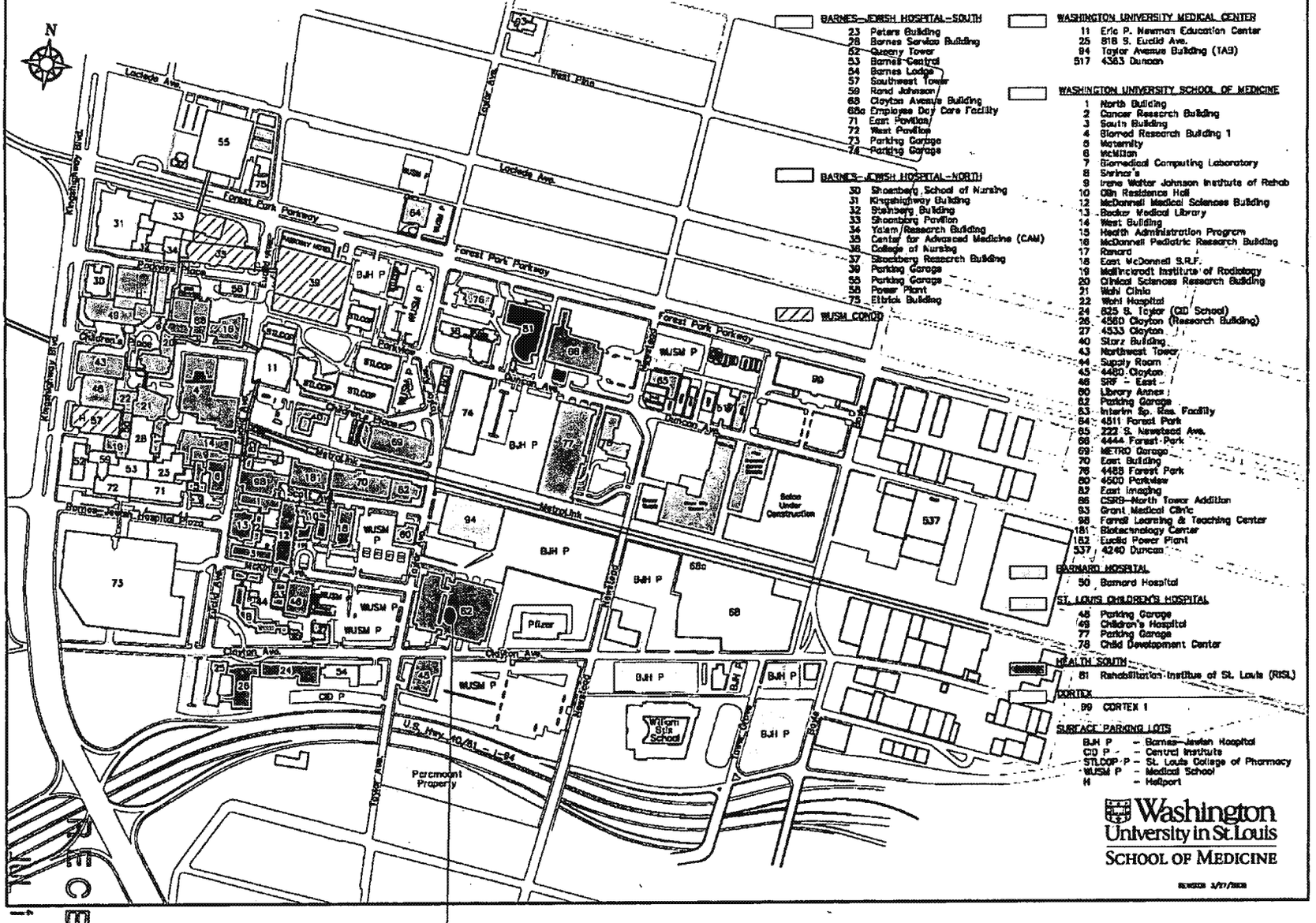

SP005 – MH 200' W of Taylor on S Side of Scott Ave in Street

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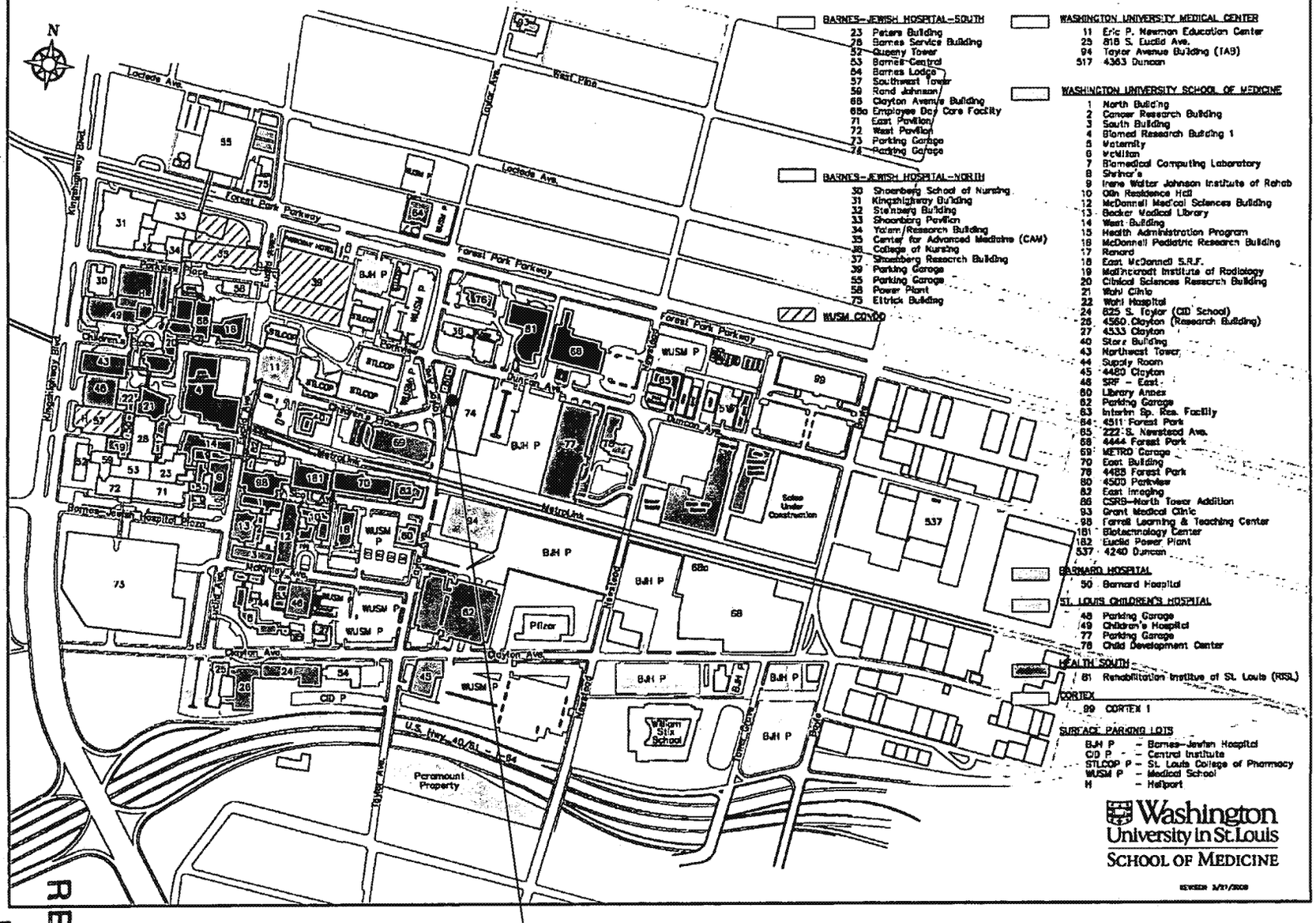

SP006 – 6" Clay pipe 13'N,9"E of SE corner of Building 80

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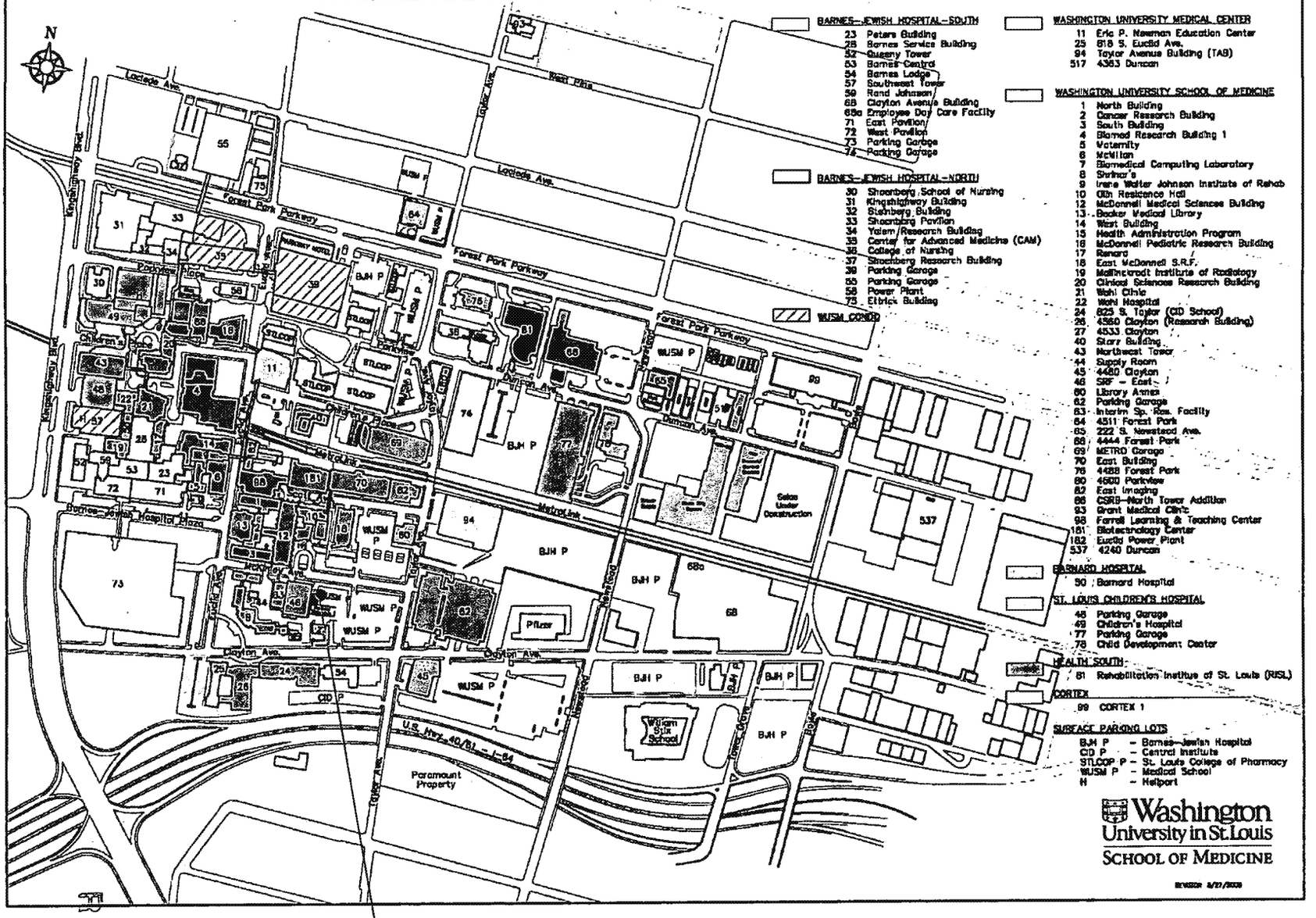

SP007 – Manhole in sidewalk E of building 63, 111' N, 2' E of SE corner of building

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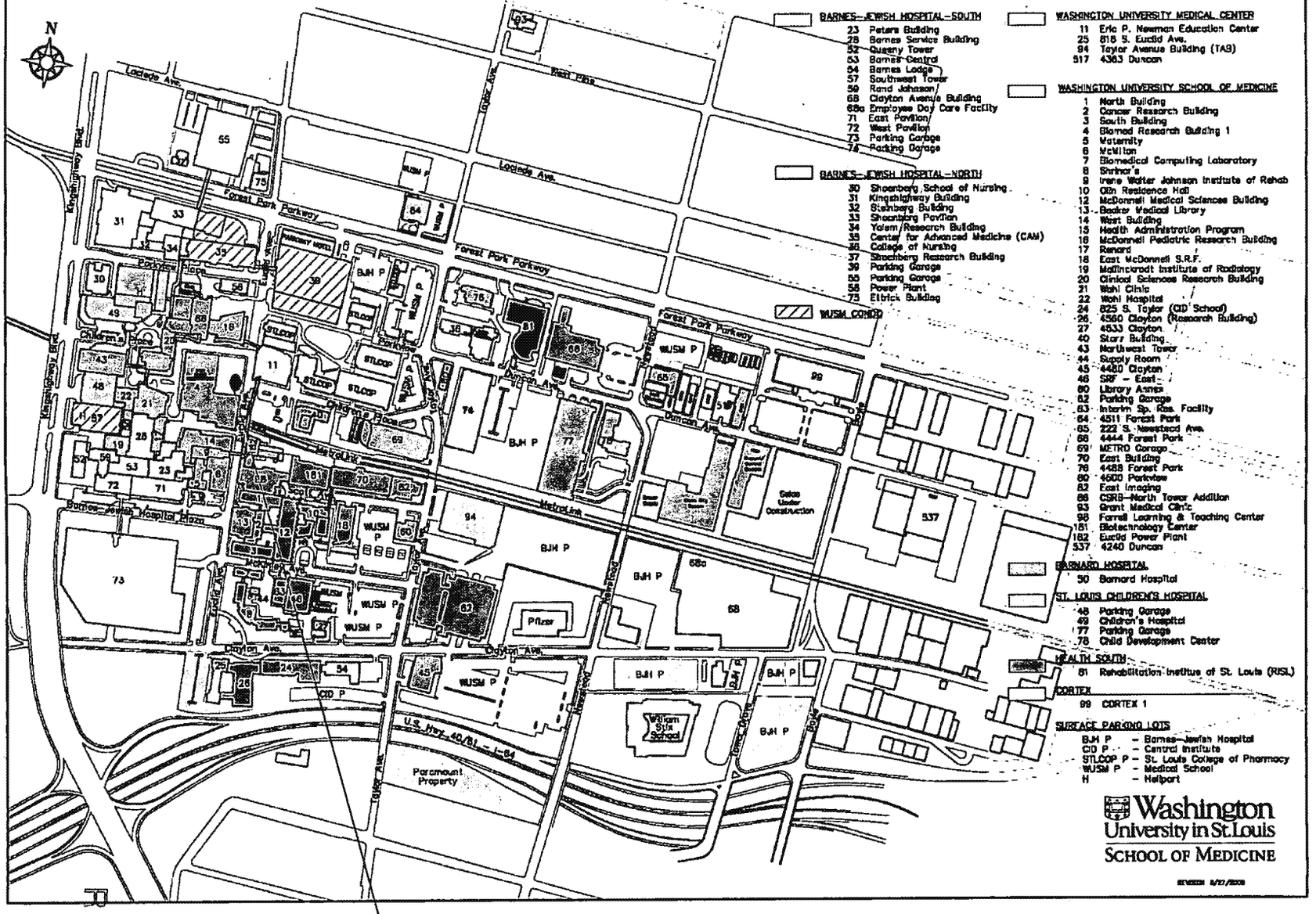

BARNES-JEWISH HOSPITAL-SOUTH
- 23 Peters Building
- 28 Barnes Service Building
- 52 Queeny Tower
- 53 Barnes Central
- 54 Barnes Lodge
- 57 Southwest Tower
- 59 Rand Johnson
- 68 Clayton Avenue Building
- 68a Employee Day Care Facility
- 71 East Pavilion
- 72 West Pavilion
- 73 Parking Garage
- 74 Parking Garage

BARNES-JEWISH HOSPITAL-NORTH
- 30 Shoenberg School of Nursing
- 31 Kingshighway Building
- 32 Steinberg Building
- 33 Shoenberg Pavilion
- 34 Yalem Research Building
- 35 Center for Advanced Medicine (CAM)
- 36 College of Nursing
- 37 Steinberg Research Building
- 39 Parking Garage
- 55 Parking Garage
- 56 Power Plant
- 75 Eltrich Building

WUSM CONDO

WASHINGTON UNIVERSITY MEDICAL CENTER
- 11 Eric P. Newman Education Center
- 25 516 S. Euclid Ave.
- 94 Taylor Avenue Building (TAB)
- 517 4363 Duncan

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
- 1 North Building
- 2 Cancer Research Building
- 3 South Building
- 4 Biomed Research Building 1
- 5 Maternity
- 6 McMillan
- 7 Biomedical Computing Laboratory
- 8 Shrine's
- 9 Irene Walter Johnson Institute of Rehab
- 10 Olin Residence Hall
- 12 McDonnell Medical Sciences Building
- 13 Becker Medical Library
- 14 West Building
- 15 Health Administration Program
- 16 McDonnell Pediatric Research Building
- 17 Renard
- 18 East McDonnell S.R.F.
- 19 Mallinckrodt Institute of Radiology
- 20 Clinical Sciences Research Building
- 21 Wohl Clinic
- 22 Wohl Hospital
- 24 825 S. Taylor (CID School)
- 26 4560 Clayton (Research Building)
- 27 4533 Clayton
- 40 Starr Building
- 43 Northwest Tower
- 44 Supply Room
- 45 4480 Clayton
- 46 SRF - East
- 60 Library Annex
- 62 Parking Garage
- 63 Interim Sp. Res. Facility
- 64 4511 Forest Park
- 65 222 S. Newstead Ave.
- 66 4444 Forest Park
- 69 METRO Garage
- 70 East Building
- 76 4488 Forest Park
- 80 4600 Parkview
- 82 East Imaging
- 86 CSRB—North Tower Addition
- 93 Grant Medical Clinic
- 98 Farrell Learning & Teaching Center
- 181 Biotechnology Center
- 182 Euclid Power Plant
- 537 4240 Duncan

BARNARD HOSPITAL
- 50 Barnard Hospital

ST. LOUIS CHILDREN'S HOSPITAL
- 48 Parking Garage
- 49 Children's Hospital
- 77 Parking Garage
- 78 Child Development Center

HEALTH SOUTH
- 61 Rehabilitation Institute of St. Louis (RISL)

CORTEX
- 99 CORTEX 1

SURFACE PARKING LOTS
- BJH P - Barnes-Jewish Hospital
- CID P - Central Institute
- STLCOP P - St. Louis College of Pharmacy
- WUSM P - Medical School
- H - Heliport

SP008

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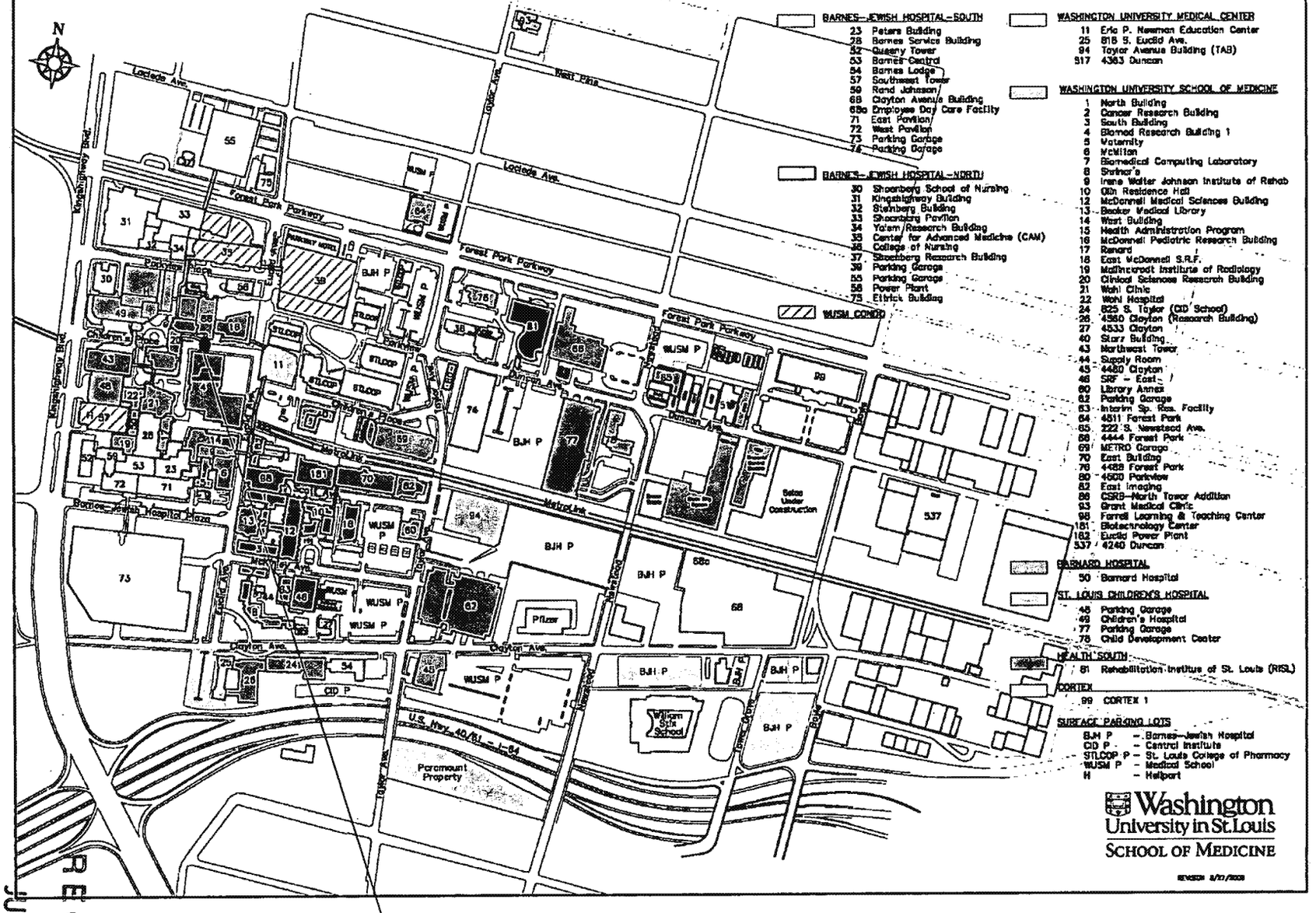

SP009

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Priority Pollutant		How used or why suspected	annual usage		Loss to Sewer
1. asbestos (fibrous)	SP	in old buildings	<	100 pounds	none
2. cyanide (total)	KP	research	<	500 pounds	none
3. antimony (total)	KP	research	<	10 pounds	none
4. arsenic (total)	KP	research	<	25 pounds	none
5. beryllium (total)	KP	research	<	1 pounds	none
6. cadmium (total)	KP	research	<	25 pounds	none
7. chromium (total)	KP	research	<	100 pounds	none
8. copper (total)	KP	research	<	500 pounds	none
9. lead (total)	KP	research	<	500 pounds	none
10. mercury (total)	KP	research	<	100 pounds	none
11. nickel (total)	KP	research	<	25 pounds	none
12. selenium (total)	KP	research	<	25 pounds	none
13. silver (total)	KP	research	<	500 pounds	none
14. thallium (total)	KP	research	<	25 pounds	none
15. zinc (total)	KP	research	<	500 pounds	none
16. acenaphthene	KP	research	<	5 pounds	none
17. acenaphthylene	KA				
18. acrolein	KP	research	<	25 pounds	none
19. acrylonitrile	KP	research	<	25 pounds	none
20. aldrin	SP	research	<	5 pounds	none
21. anthracene	KP	research	<	5 pounds	none
22. benzene	KP	research	<	5000 pounds	none
23. benzidine	KP	research	<	5 pounds	none
24. benzo (a) anthracene *	KA				
25. benzo (a) pyrene	KP	research	<	1 pounds	none
26. benzo (b) fluoranthene	KA				
27. benzo (g,h,i) perylene *	KA				
28. benzo (k) fluoranthene *	KA				
29. alpha-BHC	KA				
30. beta-BHC	KA				
31. delta-BHC	KA				
32. gamma-BHC *	KP	research	<	25 pounds	none
33. bis (2-chloroethyl) ether *	SP	research	<	10 pounds	none
34. bis (2-chloroethoxy) methane *	SP	research	<	10 pounds	none
35. bis (2-chloroisopropyl) ether *	SP	research	<	10 pounds	none
36. Reserved	KA				
37. bis (2-ethylhexyl) phthalate	KA				
38. bromodichloromethane *	KA				
39. bromoform *	KA				
40. bromomethane *	KP	research	<	5 pounds	none
41. 4-bromophenylphenyl ether	KA				
42. butylbenzyl phthalate	KA				
43. carbon tetrachloride *	KP	research	<	25 pounds	none
44. chlordane	SP	research	<	5 pounds	none
45. 4-chloro-3-methylphenol *	KA				
46. chlorobenzene	KP	research	<	100 pounds	none
47. chloroethane *	KA				
48. 2-chloroethylvinyl ether	KA				
49. chloroform *	KP	research	<	5000 pounds	none
50. chloromethane *	KA				
51. 2-chloronaphthalene	KA				
52. 2-chlorophenol *	KP	research	<	25 pounds	none
53. 4-chlorophenylphenyl ether	KA				
54. chrysene *	KA				
55. 4, 4'-DDD *	KA				
56. 4, 4'-DDE *	KA				
57. 4, 4'-DDT *	KA				
58. dibenzo (a,h) anthracene *	KA				
59. dibromochloromethane	KA				
60. 1, 2-dichlorobenzene *	KP	research	<	25 pounds	none
61. 1, 3-dichlorobenzene *	KA				
62. 1, 4-dichlorobenzene *	KP	research	<	25 pounds	none
63. 3, 3'-dichlorobenzidine	KA				
64. Reserved	KA				
65. 1, 1-dichloroethane *	KA				
66. 1, 2-dichloroethane *	KP	research	<	100 pounds	none
67. 1, 1-dichloroethene *	KA				
68. trans-1, 2-dichloroethene *	KA	research	<	pounds	none
69. 2, 4-dichlorophenol	SP	research	<	100 pounds	none
70. 1, 2-dichloropropane *	KA				

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ACCOUNT NUMBER: **10243530-00**

COMPANY NAME: **WASHINGTON UNV MEDICAL**

MAPS

FROM 09-02-98 THRU 01-02-09

IUQ'S

FROM 08-31-98 THRU 07-06-07

X	CORRESPONDANCE LOCATED IN ARCHIVE FILE S