**Sewer Acct.#:** **1011728100**

Company: **SPECGX LLC**

Address: **3600 N 2nd St**

City: **St. Louis**

State and Zip: **MO 63147**

| Industry ID | File Code | File Description |
|---|---|---|
| 35331 | 31 | INDUSTRY OVERFLOW |

**Sewer Acct.#:** **1011728100**

Company: **MALLINCKRODT LLC**

Address: **3600 N 2nd St**

City: **St. Louis**

State and Zip: **MO 63147**

| Industry ID | File Code | File Description |
|---|---|---|
| 35350 | 50 | ARCHIVED INDUSTRY |

ACCOUNT NUMBER: **10117281-00**

COMPANY NAME: **MALLINCKRODT INC**

CORRESPONDENCE

12-26-13

FROM 12-18-12 THRU 08-28-14

| X | CORRESPONDANCE LOCATED IN OVERFLOW INDUSTRY FILE |
|---|---|

03-28-16 Moved to ARDHIVED INDUSTRY files.

## Tom Boehm

**From:** James Hessel
**Sent:** Thursday, August 28, 2014 7:04 PM
**To:** Doug Mendoza
**Cc:** Tom Boehm
**Subject:** Mallinkrot on N Broadway

Mallinckrodt LLC
1011 728100

TCB
SR

I spoke to Brett Shank (sp?) at 4:50pm on 8/28/14 about an incident that occurred on 8/28/14 at their N Broadway facility. He also left a message on Tom's voicemail.

A natural gas line broke at around 3:15pm causing them to cease all hot work and shut down their pump station. Shutting down their pump station caused their effluent to probably bypass their pretreatment and discharge directly into MSDs main. They were also reading high LEL levels in manholes on site so because of safety reasons they weren't able to sample their effluent per their permit requirement.

I told them that if LELs drop back down to safe levels, then please take a sample at that time if it's still bypassing their pretreatment.

They said this effected their plant #5 and sample point #11.

Laclede was on site trying to fix the issue.

I told them to follow up with Tom in the morning.

- added to PTMS
- reminded contact of 5-day follow up

Jim Hessel

**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

August 20, 2014

Jada Wilhelm
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Ms. Wilhelm:

We have reviewed your application dated August 18, 2014 requesting approval to discharge 100 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater consists of an unusable batch of Ioversol from Building 504 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. Information provided previously indicates Ioversol is a contrast imaging media, and that the wastewater in question will be discharged through sampling point 010.

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, Mallinckrodt 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, MALLINCKRODT INC [1011728100]

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt, Inc. Evaluated by: SMG

Premise Address: 3600 N. 2nd St. Date: 8/20/14

Send approval letter to applicant

Application Dated: 8/18/14 Received: 8/20/14 All Requested Info. Received: 8/20/14

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: 1011728100

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 845 Description: unusable batch of Iovarsol from Bldg. 504

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: Mallinckrodt LLC
Premise Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt LLC
Contact Person: Jada Wilhelm
Title: Environmental Specialist
Phone: 314-654-0384 Fax: 314-654-1251

**II. APPLICANT (mailing information):**

Applicant Name: Jada Wilhelm
Title: Environmental Specialist
Company Name: Mallinckrodt LLC
Mailing Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314-654-0384 Fax: 314-654-1251

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Ioversol Solution generated by Building 504
2. Process/activity generating wastewater: Ioversol solution from process generation.
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 |
|---|---|---|
| Ioversol | 30 | % |
| Water | 70 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 100 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: pH adjustment at main plant outfall SP010
   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): _____
Building 504 to plant sewer to SP010 _____ 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):** Jada Wilhelm

**Signature:** Jada Wilhelm **Date:** 08-18-14

**FOR MSD USE ONLY:**

File Name: _____ ID No. _____ Sample Point No. _____

**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

August 20, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Mr. Shank:

We have reviewed your application dated August 11, 2014 requesting approval to discharge 1,600 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is 14% ethylene glycol solution from the chiller system associated with Building 235 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. We understand that the wastewater will be discharged through sampling point 010.

Based on the information you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a 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 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 COD 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 MSD 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 ethylene glycol contained in the wastewater in question, and the proposed discharge volume provided in your application, it is estimated that you will be discharging just under one ton of COD over 600 mg/L. (Our quantitative estimate is 0.93 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, Mallinckrodt 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, MALLINCKRODT INC [1011728100]

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt Inc. Evaluated by: SMG

Premise Address: 3600 N. 2nd St. Date: 8/20/14

Send approval letter to applicant

Application Dated: 8/11/14 Received: 8/12/14 All Requested Info. Received: 8/12/14

SOURCE FILING/DESCRIPTION

| | | |
|---|---|---|
| 1 - Source in PIMS? | (Y) / N | |
| 2 - If No, on IU Cross-Ref list? * | Y / N | SOURCE TYPE (circle): |
| 3 - If No, MSD Account # from E-CIS? | Y / N | (IU) / Dead IU / SD |
| 4 - If none, on "Source" list (pre-IMS)? ** | Y / N | INDUSTRY ID: |
| 5 - If No, assigned SOUR# from PIMS. | | 1011728100 |

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 812 Description: 14% ethylene glycol soln from the chiller system assoc. w/ Bldg. 235

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: 08/20/14
Calculated by: Steve Grace
Source name: MALLINCKRODT LLC [1011728100]
Waste material: used ethylene glycol coolant solution from building 235 chiller system
Discharge volume: 1,600 gallons

**2 STRENGTH INFORMATION:**

| | | | | |
|---|---|---|---|---|
| Sample BOD = | 0 | mg/l = | 0 | lbs BOD to be discharged |
| Sample COD = | 140,000 | mg/l = | 1868 | lbs COD to be discharged |
| Sample TSS = | | 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** | **140** | **146** | **292** | **7,113** | **14,227** | **711** | **1,423** |
| 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** | **1.31** | **20** |
| Coldwater | 0.00 | 0 | 5.28 | 5 |
| Fenton | 0.00 | 0 | 19.37 | 1 |
| Grand Glaize | 0.00 | 0 | 8.56 | 3 |
| Lemay | 0.00 | 0 | 1.94 | 14 |
| Lower Meramec | 0.00 | 0 | 14.08 | 2 |
| Missouri River | 0.00 | 0 | 3.42 | 8 |

**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 = 139400 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 = 2.1 CcF
BOD surcharge = $ -
COD surcharge = $ 288.47
TSS surcharge = $ -
Total discharge charge = $ 288.47
**Customer charge = $ 288.47** DEC charges special discharge customers for total charges > $20.00
Approximate charge/gallon = $ 0.18

**Comments**

require volume report for billing purposes. Smg

Metropolitan St. Louis Sewer District

# APPLICATION FOR SPECIAL DISCHARGE APPROVAL

**I. WASTEWATER SOURCE IDENTIFICATION:**

Site Name: Mallinckrodt LLC

Premise Address: 3600 North 2nd Street

City: St. Louis State: MO Zip: 63147

Owner: Mallinckrodt LLC

Contact Person: Brett Shank

Title: Environmental Manager

Phone: 314.654.0002 Fax: 314.724.4157

**II. APPLICANT (mailing information):**

Applicant Name: Brett Shank

Title: Environmental Manager

Company Name: Mallinckrodt LLC

Mailing Address: 3600 North 2nd Street

City: St. Louis State: MO Zip: 63147

Phone: 314.654.0002 Fax: 314.724.4157

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Ethylene Glycol and Water
2. Process/activity generating wastewater: Clean out of glycol tank and circulation loop in building 235
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 |
|---|---|---|
| Ethylene Glycol | 14 | % |
| Water | 86 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 1600 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: pH adjustment at main plant outfall SP010
   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): _____
Plant sewer to main outfall SP010 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):** Brett Shank

**Signature:** _____ **Date:** 8/11/14

**FOR MSD USE ONLY:**

File Name: Mallinckrodt Inc. ID No. 1011728100 Sample Point No. 812

## Tom Boehm

**From:** Shank, Brett <Brett.Shank@mallinckrodt.com>
**Sent:** Friday, August 15, 2014 8:14 AM
**To:** Tom Boehm
**Cc:** Wilhelm, Jada
**Subject:** Mallinckrodt St. Louis Plant - Request to Discontinue Catch-Test-Pitch Protocol
**Attachments:** Request to Discontinue Catch-Test-Pitch Protcol.pdf

Mallinckrodt LLC
1011 7281 00

Tom:

Please see attached a formal request to discontinue the "catch-test-pitch" protocol currently used on the fusel oil process at the Mallinckrodt St. Louis Plant.

If you have any questions or require more detailed information, don't hesitate to contact me.

Please reply to the message indicating that you have received this letter.

Kind Regards,

Brett Shank I Environmental Manager
**Mallinckrodt Pharmaceuticals**
3600 North 2nd St. I St. Louis, MO 63147 I USA
T: 314.654.0002 I M: 314.724.4157 I F: 314.654.1251
brett.shank@mallinckrodt.com I www.mallinckrodt.com

This information may be confidential and/or privileged. Use of this information by anyone other than the intended recipient is prohibited. If you receive this in error, please inform the sender and remove any record of this message.

Mallinckrodt
Pharmaceuticals

August 15th, 2014

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

**VIA EMAIL**

Re: Request to Discontinue Catch-Test-Pitch Protocol at SP915
Permit No. 1011728100-1.1

Dear Mr. Mendoza,

This letter is a formal request to discontinue the "catch-test-pitch" protocol currently used on the fusel oil process. The fusel oil process was placed under a "catch-test-pitch" protocol in 2005. This was in response to waste water discharges from the fusel oil process repeatedly exceeding allowable limits on toluene. Under the "catch-test-pitch" protocol, waste water from the fusel oil process is collected, sampled and tested prior to discharge to MSD. If lab tests indicate the waste water batch is within allowable limits the batch is discharged to MSD; if not, the batch is sent off-site for treatment.

In November 2009 improvements were made to the fusel oil process' steam stripping operation which removes toluene from waste water. Because of these improvements, it has not been necessary to ship fusel oil waste water offsite for treatment since December 2009.

A project was recently completed that added further safeguards to ensure discharges from the fusel oil system are below permit limits for toluene. This project installed instrumentation and PLC-based controls to prevent toluene from being transferred from T-348 to the fusel oil system. These levels of protection include:

- The transfer operation from T-348 will be manually initiated. The transfer operation will be automatically stopped to maintain a minimum volume in T-348. This is expected to leave any layer of free toluene in T-348 and should prevent toluene from being transferred to the fusel oil system.
- Install and operate a conductivity probe in the outlet piping of T-348 as a back-up to the level control. If the conductivity probe detects toluene, the transfer valve from T-348 to the fusel oil system is interlocked closed and the T-348 transfer pump is interlocked off.
- Install piping to allow the contents of T-348 to be transferred to the toluene Re-Extractor, T-366, for toluene recovery.

MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

Mallinckrodt
Pharmaceuticals

The above-listed engineering changes have been made and the system has undergone commissioning. Procedures have been developed and implemented to satisfy project requirements. Mallinckrodt requests to discontinue the "catch-test-pitch" protocol and rely on routine quarterly sampling to demonstrate compliance with discharge limitations at SP915, similar to other PEG sample locations at the Mallinckrodt St. Louis Plant.

If you have any questions or require more detailed information, please contact me at 314-654-0002 or via email at brett.shank@mallinckrodt.com.

Sincerely,

Brett Shank
Environmental Manager

MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

## Tom Boehm

SR

**From:** Shank, Brett <Brett.Shank@mallinckrodt.com> -Mallinckrodt LLC
**Sent:** Friday, August 15, 2014 7:52 AM -1011-728/000-
**To:** Tom Boehm
**Cc:** Wilhelm, Jada
**Subject:** Mallinckrodt St. Louis Plant - Follow Up to the Magnesium Stearate Release from Building X
**Attachments:** Follow Up to the Magnesium Stearate Release from Building X.pdf

Tom:

As discussed yesterday, please see attached follow-up regarding the August 14, 2014 oral notification of an unplanned release of magnesium stearate from the Mallinckrodt St. Louis Plant.

Please reply to the message indicating that you have received this letter.

-written notification as follow up to phone notification of Magnesium stearate release to sewer

Kind Regards,

Brett Shank I Environmental Manager
**Mallinckrodt Pharmaceuticals**
3600 North 2nd St. I St. Louis, MO 63147 I USA
T: 314.654.0002 I M: 314.724.4157 I F: 314.654.1251
brett.shank@mallinckrodt.com I www.mallinckrodt.com

This information may be confidential and/or privileged. Use of this information by anyone other than the intended recipient is prohibited. If you receive this in error, please inform the sender and remove any record of this message.

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August 15, 2014

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

**VIA EMAIL**

**RE: Follow-up to the Magnesium Stearate Release from Building X at the St. Louis Plant**
PERMIT NO. 1011728100-1.1

This letter is a follow-up regarding the August 14, 2014 oral notification of an unplanned release of approximately 3000 lbs of magnesium stearate (SDS attached) from Building X at the Mallinckrodt St. Louis Plant located at 3600 North Second Street as reported via phone call to Tom Boehm on August 14, 2014.

At approximately 6:15 on August 14, 2014 it was discovered that the strainer basket drain line manual valve located off the T-3 bottom outlet was partially open allowing material to drain to the building trench sewer inside Building X, then through SP010.

Although still under investigation, the likely root cause of the release is operator error. As a result of this incident the drain line has been equipped with a cap as a spill control measure to prevent possible route of escape of materials when the line is not in service. A second corrective action is awareness and training. The building is already working on retraining for all of the operators.

If you have any questions or require additional information, please contact me at 314-654-0002 or via email at brett.shank@mallinckrodt.com.

Sincerely,

Brett Shank
Environmental Manager

Enclosure: SDS

MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

COVIDIEN
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# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

| | |
|---|---|
| Material name | MAGNESIUM STEARATE |
| Version # | 01 |
| Issue date | 04-04-2013 |
| CAS # | 557-04-0 |
| Synonym(s) | Octadecanoic acid, magnesium salt * STEARIC ACID, MAGNESIUM SALT |
| Manufacturer information | Mallinckrodt<br>675 McDonnell Blvd.<br>Hazelwood, MO 63042<br>24 Hour Emergency 314-654-1600<br>Chemtrec 800-424-9300<br>Customer Service 888-744-1414 |
| Item code | 1257, 1277, 1726, 1729, 2254, 2255, 2256, 2257, 2279, 2800, 3508, 4024, 4217, 5705, 5712, 5716, 5774, 5777, 6504, 7205, 7807 |

## 2. Hazards Identification

| | |
|---|---|
| Emergency overview | WARNING<br><br>Dust may form explosive mixture with air. Exposure to powder or dusts may be irritating to eyes, nose and throat. |
| OSHA regulatory status | This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). |
| Potential health effects | |
| Routes of exposure | Inhalation. Eye contact. |
| Eyes | Contact with eyes may cause irritation. Dust or powder may irritate eye tissue. |
| Skin | Health injuries are not known or expected under normal use. |
| Inhalation | Inhalation of dusts may cause respiratory irritation. Coughing. Difficulty in breathing. |
| Ingestion | Health injuries are not known or expected under normal use. |
| Chronic effects | Inhalation of powder/dust may cause lung edema. |
| Potential environmental effects | Ecological injuries are not known or expected under normal use. |

## 3. Composition / Information on Ingredients

| Components | CAS # | Percent |
|---|---|---|
| MAGNESIUM STEARATE | 557-04-0 | 100 |

## 4. First Aid Measures

| | |
|---|---|
| First aid procedures | |
| Eye contact | Rinse with water. Get medical attention if irritation develops and persists. |
| Skin contact | Rinse skin with water/shower. Get medical attention if irritation develops and persists. |
| Inhalation | If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist. |
| Ingestion | Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately. |

## 5. Fire Fighting Measures

| | |
|---|---|
| Flammable properties | Dust may form explosive mixture with air. |
| Extinguishing media | |
| Suitable extinguishing media | Water. Alcohol foam. Carbon dioxide ($CO_2$). Dry chemicals. |

**TO:** Chris Verplancke - Finance Department

**FROM:** Steven M. Grace – DEC SMG

**DATE:** August 11, 2014

**RE:** **Wastewater User Charge Billing for Special Discharge**

Please bill, by invoice, the following charges applicable to an on-site special discharge approved in our original letter dated October 30, 1998, and extended in our most recent letter dated June 23, 2014. The discharge dates and quantity are from information submitted by Sharon Cotner, Corps of Engineers, in a letter dated July 31, 2014.

This charge is based on the rates in MSD Wastewater User Charge Ordinance 13758. Please note that, as of July 1, 2014, the volume charge of $2.82 per 100 cubic feet of wastewater became effective.

**PARTY TO BILL:** **Larry Joellenbeck**
**The Shaw Group Inc.**
**1 Angelrodt Street**
**St. Louis, MO 63147**

**BILLING IS FOR:** **On-Site Special Discharge**

**DISCHARGE PERIOD:** **April through June 2014**

**SOURCE OF WASTE:** **Treated construction water from the St. Louis Downtown FUSRAP Site located at Mallinckrodt, Inc., 3600 N. Second Street, St. Louis, Missouri.**

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| 4/1/14 - 6/30/14 | Volume | 1,576 | CcF | $2.50 | $3,940.00 |
| Totals: | --- | 1,576 | CcF | --- | $3,940.00 |

If you have any questions, please call me on extension 8755.

bv

ec: Cynthia Chalk – Finance Dept.
Laura Joiner – Finance Dept.
Brian Gibson
Doug Mendoza
Larry Joellenbeck, The Shaw Group Inc., 1 Angelrodt St., St. Louis, MO 63147

File: IU, MALLINCKRODT INC [1011728100]

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Pharmaceuticals

SR
8-8

July 24th, 2014

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

Re: 2014 2nd Quarter Self-Monitoring Report for Permit No. 1011728100-1.1

Dear Mr. Mendoza,

Please find enclosed the 2014 2nd Quarter Self-Monitoring report for Mallinckrodt Inc.

The following sample points received no pharmaceutical process water flow during the second quarter: SP080 and SP930.

During this quarter we had an unplanned power outage on June 10th, 2014 that caused the two lift station outfalls, SP008 and SP011, to overflow directly to MSD. Samples were taken and analyzed and are included in this report as well as pH readings during the overflow event.

A planned electrical shut down for maintenance repair activities occurred on Friday, June 27th, 2014 through Saturday, June 28th, 2014. As stated in our letter to you dated June 19th, 2014, the two lift station outfalls, SP008 and SP011, overflowed directly to MSD during this time. Samples were taken and analyzed and are included in this report as well as pH readings during the overflow event for June 27th and June 28th, 2014.

If you have any questions or require more detailed information, please contact me at 314-654-0384 or via email at jada.wilhelm@mallinckrodt.com.

Sincerely,

Jada Wilhelm

Jada Wilhelm
Environmental Specialist

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ENCLOSURES

COVIDIEN/MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

METROPOLITAN ST LOUIS SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT LLC**

Permit No: 1011728100-1.1

Premise Address: 3600 North Second Street, St. Louis, MO 63147

Reporting Period: ☐ JAN-MAR ☒ APR-JUN ☐ JUL-SEP ☐ OCT-DEC

**PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER SYSTEM**

| RADIONUCLIDE | ACTIVITY DISCHARGED (millicuries) |
|---|---|
| | |
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| | |
| | |
| | |
| | |
| TOTAL ACTIVITY DISCHARGED: | **No activity recorded this period.** |

**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

OMB 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 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.

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Print/type name of signing official: Dexter Evans

Title: Senior Site Director

Telephone: 314-654-7695

Signature: Dexter Evans

Date: 7-28-14

## 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.**

| | |
|---|---|
| A | NO CHANGE IN WASTEWATER DISCHARGE AT SAMPLE POINTS WITH NO MONITORING REQUIRED |
| | For permit special conditions that waive monitoring at any sample point(s) specified in your permit, you are required to make the following certification for each report in which monitoring is waived:<br>DME I certify, since the last discharge monitoring report, there has been no change in the character of the wastes discharged at sample points **001 and 002**.<br>_____ I certify, since the last discharge monitoring report, there has been no discharge from sample points **008 and 011**. |
| B | NO CHANGE IN WASTEWATER DISCHARGE AT ACTIVE CONNECTIONS WITHOUT SAMPLE POINTS |
| | For permit special conditions that waive monitoring at active connection points which are not specified as sample points in your permit, you are required to make the following certification:<br>DME I certify, since the last discharge monitoring report, there has been no change in the character of wastes discharged at those active connection points which are not specified in my permit. |
| E | NO DISCHARGE OF CATEGORICAL WASTE |
| | For permit special conditions that prohibit discharge of wastes which are subject to certain categorical pretreatment standards, you are required to make the following certification:<br>DME I certify, since the last discharge monitoring report, there has been no discharge of wastes which are subject to pretreatment standards in 40 CFR 414 (except for those wastes conveyed by Sample Point **905**). |
| F | CYANIDE NOT USED OR GENERATED IN 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from limitations and monitoring for Total Cyanide at the Pharmaceutical sample points **080, 915, and 936,** subject to the following certification:<br>DME I certify, since the last discharge monitoring report, cyanide has not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. |
| H | CATEGORICAL POLLUTANTS NOT USED OR GENERATED IN CATEGORICAL OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants at the Pharmaceutical sample points **915 and 936,** subject to the following certification:<br>DME I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, have not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. In addition, the above-referenced report remains valid. |
| I | SURROGATE MONITORING ALLOWED FOR 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants, and replaced by monitoring for surrogate pollutant(s), at the Pharmaceutical sample points **920 and 937** subject to the following certification:<br>DME I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, continue to receive the same degree of treatment as the surrogate pollutant(s). In addition, the above-referenced report remains valid. |

## PART IV: GENERAL CERTIFICATION STATEMENTS

| | |
|---|---|
| B | DISCHARGE MONITORING REPORT CERTIFICATION |
| | **All permittees must sign and complete the information below:**<br>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.<br>RECEIVED<br>Print or type name of signing official: Dexter Evans<br>JUL 29 2014<br>Title: Senior Site Director Telephone: 314-654-7695<br>Signature: Dexter M. Evans Date: 7-28-14<br>DIVISION OF ENVIRONMENTAL COMPLIANCE |

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X_(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **001** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated fld | | | | | | UNITS |
| FLOW | | E | 1,000 | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2032 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ___(JAN-MAR) _X_(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **002** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 2,200 | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X__(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | 003 | | 009 | | 099 | | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | 4/4/2014 | | 4/4/2014 | | Calculated | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | 0710, 0810, 0910, 1010 | | 0730, 0830, 0930, 1030 | | N/A | | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | M | 92,275 | M | 31,536 | E | 60,739 | gal/day |
| Oil & Grease | 200 | G | <5 | G | <5 | E | <5 | mg/l |
| Biochemical Oxygen Demand | **** | C | 63 | C | 117 | E | 35 | mg/l |
| Chemical Oxygen Demand | **** | C | 145 | C | 318 | E | 55 | mg/l |
| Total Suspended Solids | **** | C | 43 | C | 22 | E | 54 | mg/l |
| Temperature | **** | G | 16.7 | G | 14.4 | E | 15.6 | deg C |
| pH | **** | G | 7.0 | G | 7.0 | E | 7.0 | S.U. |
| Lab Dilution Factor | | | 1 | | 1 | | N/A | |

**** No limits for SP003 or SP009;
monitoring requirement only for calculation at SP099

* Calculated value was less than zero.

Shaded values represent detection limits

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ___(JAN-MAR) __X__(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----> | | **005** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----> | | 4/4/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----> | | 0720, 0820, 0920, 1020 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | gal/day |
| Oil & Grease | 200 | G | 16 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 29 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 106 | | | | | mg/l |
| Total Suspended Solids | **** | C | 40 | | | | | mg/l |
| Temperature | 60 | G | 14.4 | | | | | deg C |
| pH | 5.5 - 11.5 | G | 6 | | | | | S.U. |
| **** No limits for SP005 | | | | | | | | |
| Lab Dilution Factor | | | 1 | | | | | |

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ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ___(JAN-MAR) _X_(APR-JUNE) ___(JULY-SEPT) ___(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **008** | | **008** | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 6/10/2014 | | 6/27/2014 | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0840 | | 0710 | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | 14,000 | | 14,000 | | | gal/day |
| Oil & Grease | 200 | G | <6 | | 3 | | | mg/l |
| Biochemical Oxygen Demand | **** | G | 2 | | 7 | | | mg/l |
| Chemical Oxygen Demand | **** | G | <50 | | 49 | | | mg/l |
| Temperature | 60 | G | 28.2 | | 26.7 | | | deg C |
| Total Suspended Solids | **** | G | 7 | | 5 | | | mg/L |
| pH | 5.5 - 11.5 | G | see attached | | see attached | | | S.U. |
| Shaded values represent detection limits | | | | | | | | |
| Lab Dilution Factor | | | 1 | | 1 | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X__(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ------> | | **008** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ------> | | 6/10/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ------> | | 0840 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated fl | | | | | | UNITS |
| FLOW | | E | 14,000 | | | | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | | G | <0.005 | | | | | mg/l |
| 1,1,2-Trichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloroethane | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloropropane | | G | <0.005 | | | | | mg/l |
| 1,3-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 1,4-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 2-Chloroethylvinylether | | G | <0.02 | | | | | mg/l |
| Acrolein | | G | <0.1 | | | | | mg/l |
| Acrylonitrile | | G | <0.005 | | | | | mg/l |
| Benzene | | G | <0.002 | | | | | mg/l |
| Bromodichloromethane | | G | <0.005 | | | | | mg/l |
| Bromoform | | G | <0.005 | | | | | mg/l |
| Bromomethane | | G | <0.01 | | | | | mg/l |
| Carbon Tetrachloride | | G | <0.005 | | | | | mg/l |
| Chlorobenzene | | G | <0.005 | | | | | mg/l |
| Chloroethane | | G | <0.01 | | | | | mg/l |
| Chloroform | | G | 0.004 | | | | | mg/l |
| Chloromethane | | G | <0.01 | | | | | mg/l |
| cis-1,3-Dichloropropene | | G | <0.005 | | | | | mg/l |
| Dibromochloromethane | | G | <0.005 | | | | | mg/l |
| Ethylbenzene | | G | <0.005 | | | | | mg/l |
| Methylene Chloride | | G | <0.005 | | | | | mg/l |
| Tetrachloroethene | | G | <0.005 | | | | | mg/l |
| Toluene | | G | 0.003 | | | | | mg/l |
| 1,2-Dichloroethene | | G | <0.005 | | | | | mg/l |
| trans-1,3-Dichloropropene | | G | <0.005 | | | | | mg/l |
| Trichloroethene | | G | <0.005 | | | | | mg/l |
| Vinyl Chloride | | G | <0.002 | | | | | mg/l |
| 1,2,4-Trichlorobenzene | | G | <0.008 | | | | | mg/l |
| 2,4,6-Trichlorophenol | | G | <0.008 | | | | | mg/l |
| 2,4-Dichlorophenol | | G | <0.008 | | | | | mg/l |
| 2,4-Dimethylphenol | | G | <0.008 | | | | | mg/l |
| 2,4-Dinitrophenol | | G | <0.016 | | | | | mg/l |
| 2,4-Dinitrotoluene | | G | <0.008 | | | | | mg/l |
| 2,6-Dinitrotoluene | | G | <0.008 | | | | | mg/l |
| 2-Chloronapthalene | | G | <0.008 | | | | | mg/l |
| 2-Chlorophenol | | G | <0.008 | | | | | mg/l |
| 2-Nitrophenol | | G | <0.016 | | | | | mg/l |
| 3,3-Dichlorobenzidine | | G | <0.008 | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | | G | <0.016 | | | | | mg/l |
| 4-Bromophenyl-phenylether | | G | <0.008 | | | | | mg/l |
| 4-Chloro-3-methylphenol | | G | <0.016 | | | | | mg/l |
| 4-Chlorophenyl-phenylether | | G | <0.008 | | | | | mg/l |
| 4-Nitrophenol | | G | <0.016 | | | | | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X__(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **008** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 6/10/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0840 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 14,000 | | | | | gal/day |
| Acenapthene | | G | <0.008 | | | | | mg/l |
| Acenaphthylene | | G | <0.008 | | | | | mg/l |
| Anthracene | | G | <0.008 | | | | | mg/l |
| Benzidine | | G | <0.032 | | | | | mg/l |
| Benzo(a)anthracene | | G | <0.008 | | | | | mg/l |
| Benzo(a)pyrene | | G | <0.008 | | | | | mg/l |
| Benzo(b)fluoranthene | | G | <0.008 | | | | | mg/l |
| Benzo(g,h,i)perylene | | G | <0.008 | | | | | mg/l |
| Benzo(k)fluoranthene | | G | <0.008 | | | | | mg/l |
| Bis(2-chloroethoxy)methane | | G | <0.008 | | | | | mg/l |
| Bis(2-chloroethyl)ether | | G | <0.008 | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | | G | <0.008 | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | | G | <0.005 | | | | | mg/l |
| Butyl benzyl phthalate | | G | <0.008 | | | | | mg/l |
| Chrysene | | G | <0.008 | | | | | mg/l |
| Dibenzo(a,h)anthracene | | G | <0.008 | | | | | mg/l |
| Diethyl phthalate | | G | <0.008 | | | | | mg/l |
| Dimethyl phthalate | | G | <0.008 | | | | | mg/l |
| Di-n-butyl phthalate | | G | <0.008 | | | | | mg/l |
| Di-n-octyl-phthalate | | G | <0.008 | | | | | mg/l |
| Fluorene | | G | <0.008 | | | | | mg/l |
| Fluoranthene | | G | <0.008 | | | | | mg/l |
| Hexachlorobenzene | | G | <0.008 | | | | | mg/l |
| Hexachlorobutadiene | | G | <0.008 | | | | | mg/l |
| Hexachlorocyclopentadiene | | G | <0.016 | | | | | mg/l |
| Hexachloroethane | | G | <0.008 | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | | G | <0.008 | | | | | mg/l |
| Isophorone | | G | <0.008 | | | | | mg/l |
| Naphthalene | | G | <0.008 | | | | | mg/l |
| Nitrobenzene | | G | <0.008 | | | | | mg/l |
| N-nitrosodimethylamine | | G | <0.016 | | | | | mg/l |
| N-nitrosodi-n-propylamine | | G | <0.008 | | | | | mg/l |
| N-nitrosodiphenylamine | | G | <0.008 | | | | | mg/l |
| Pentachlorophenol | | G | <0.016 | | | | | mg/l |
| Phenanthrene | | G | <0.008 | | | | | mg/l |
| Phenol | | G | <0.004 | | | | | mg/l |
| Pyrene | | G | <0.008 | | | | | mg/l |
| 1,2-Diphenylhydrazine | | G | <0.008 | | | | | mg/l |
| | | | | | | | | |
| **Total Toxic Organics** | 5.844 | -- | 0.7890 | | | | | mg/l |
| Shaded values represent detection limits | | | | | | | | |
| | | | | | | | | |
| Lab Dilution Factor | | | 1 | | | | | |

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MSD 013333

| Unplanned Power Outage Manual pH Monitoring | | | |
|---|---|---|---|
| Date | 6/10/2014 | | |
| Sample Point | SP008 | | |
| | | | |
| Time | pH | | |
| 0840 | 9.0 | | |
| 0951 | 9.1 | | |

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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Friday, June 27th, 2014 | | |
| Sample Point | SP008 | | |
| | | | |
| Time | pH | Time | pH |
| 0610 | No Flow | 1805 | 6.66 |
| 0640 | No Flow | 1835 | 6.60 |
| 0710 | 6.44 | 1905 | 6.36 |
| 0740 | 7.69 | 1935 | 5.98 |
| 0810 | 8.13 | 2005 | 5.51 |
| 0840 | 8.07 | 2035 | 5.30 |
| 0910 | 7.90 | 2105 | 5.18 |
| 0940 | 7.60 | 2135 | 6.00 |
| 1010 | 7.75 | 2205 | 6.56 |
| 1040 | 7.74 | 2235 | 6.67 |
| 1110 | 7.81 | 2305 | 6.65 |
| 1140 | 7.22 | 2335 | 6.74 |
| 1210 | 6.89 | | |
| 1240 | 6.74 | | |
| 1310 | 6.58 | | |
| 1340 | 6.56 | | |
| 1410 | 6.58 | | |
| 1440 | 6.89 | | |
| 1510 | 7.09 | | |
| 1540 | 7.04 | | |
| 1610 | 6.83 | | |
| 1640 | 7.09 | | |
| 1710 | 7.22 | | |
| 1735 | 6.83 | | |

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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Saturday, June 28th, 2014 | | |
| Sample Point | SP008 | | |
| | | | |
| Time | pH | | |
| 0005 | 6.80 | | |
| 0035 | 6.61 | | |
| 0105 | 6.10 | | |
| 0135 | 5.75 | | |
| 0205 | 5.50 | | |
| 0235 | 5.50 | | |
| 0305 | 5.50 | | |
| 0335 | 5.97 | | |
| 0405 | 6.11 | | |
| 0435 | 6.22 | | |
| 0505 | 6.46 | | |
| 0535 | 6.48 | | |
| 0605 | 6.56 | | |
| 0635 | 6.44 | | |
| 0705 | 5.81 | | |
| 0735 | 5.72 | | |
| 0805 | 5.86 | | |
| 0835 | 6.96 | | |
| | | | |
| | | | |
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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X__(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **010** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 4/4/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0740, 0840, 0940, 1040 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated fl | | | | | | UNITS |
| FLOW | | E | 1,142,913 | | | | | gal/day |
| Oil & Grease | 200 | G | 58 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 590 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 1020 | | | | | mg/l |
| Total Suspended Solids | **** | C | 260 | | | | | mg/l |
| Temperature | 60 | G | 25.6 | | | | | deg C |
| pH | 5.5 - 11.5 | G | see attached | | | | | S.U. |
| Chromium | 5.0 | C | 0.005 | | | | | mg/l |
| Copper | 2.7 | C | 0.0182 | | | | | mg/l |
| Nickel | 2.3 | C | 0.0084 | | | | | mg/l |
| Zinc | 3.0 | C | 0.103 | | | | | mg/l |
| Cyanide | 1.2 | C | <0.007 | | | | | mg/l |
| Shaded values represent detection limits | | | | | | | | |
| Lab Dilution Factor | | | 1, 2.22, 5 | | | | | |

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Mallinckrodt pH Monitoring for SP010: April 2014

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 4/2/14 17:25 | 3.0 | 5 |
| 4/6/14 0:15 | 5.4 | |
| 4/6/14 0:20 | 4.4 | |
| 4/6/14 0:25 | 3.5 | 15 |
| 4/9/14 3:00 | 4.9 | 5 |
| 4/10/14 10:00 | 5.0 | 5 |
| 4/14/14 10:05 | 3.9 | 5 |
| 4/19/14 21:25 | 5.3 | 5 |
| 4/19/14 21:40 | 2.7 | 5 |
| 4/21/14 17:30 | 4.4 | 5 |
| 4/21/14 17:50 | 4.2 | 5 |
| 4/21/14 18:00 | 5.5 | 5 |
| 4/30/14 11:55 | 3.4 | |
| 4/30/14 12:00 | 2.6 | 10 |
| | **April Total** | **70** |

Mallinckrodt pH Monitoring for SP010: May 2014

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 5/1/14 0:15 | 4.1 | 5 |
| 5/4/14 22:15 | 4.7 | |
| 5/4/14 22:20 | 4.7 | |
| 5/4/14 22:25 | 4.7 | |
| 5/4/14 22:30 | 4.5 | |
| 5/4/14 22:35 | 4.9 | 25 |
| 5/5/14 12:20 | 4.3 | |
| 5/5/14 12:25 | 4.7 | 10 |
| 5/5/14 12:40 | 11.6 | 5 |
| 5/8/14 7:15 | 4.3 | |
| 5/8/14 7:20 | 2.4 | |
| 5/8/14 7:25 | 2.6 | |
| 5/8/14 7:30 | 2.3 | |
| 5/8/14 7:35 | 2.4 | 25 |
| 5/12/14 3:20 | 5.4 | 5 |
| 5/13/14 11:05 | 5.1 | 5 |
| 5/14/14 2:10 | 11.5 | |
| 5/14/14 2:15 | 11.5 | 10 |
| 5/14/14 2:30 | 2.7 | 5 |
| 5/15/14 12:10 | 3.2 | 5 |
| 5/17/14 16:30 | 4.5 | |
| 5/17/14 16:35 | 5.4 | 10 |
| 5/19/14 3:40 | 11.7 | |
| 5/19/14 3:45 | 11.6 | |
| 5/19/14 3:50 | 11.5 | 15 |
| 5/19/14 10:50 | 4.7 | 5 |
| 5/19/14 18:10 | 4.0 | 5 |
| 5/20/14 15:25 | 5.4 | 5 |
| 5/21/14 2:05 | 3.5 | 5 |
| 5/21/14 20:10 | 3.0 | 5 |

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| | | |
|---|---|---|
| 5/22/14 19:55 | 3.8 | 5 |
| 5/24/14 21:45 | 3.8 | |
| 5/24/14 21:50 | 4.2 | 10 |
| 5/26/14 10:55 | 5.4 | 5 |
| 5/30/14 19:10 | 5.2 | 5 |
| 5/31/14 2:05 | 3.2 | 5 |
| | **May Total** | **180** |

Mallinckrodt pH Monitoring for SP010: June 2014

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 6/1/14 15:25 | 3.4 | 5 |
| 6/2/14 3:20 | 4.1 | 5 |
| 6/2/14 3:45 | 4.5 | 5 |
| 6/2/14 11:20 | 4.8 | 5 |
| 6/2/14 20:40 | 3.0 | 5 |
| 6/3/14 2:00 | 4.2 | 5 |
| 6/3/14 18:25 | 5.2 | 5 |
| 6/4/14 0:00 | 3.8 | 5 |
| 6/5/14 12:05 | 5.1 | 5 |
| 6/5/14 22:30 | 5.2 | 5 |
| 6/7/14 4:45 | 5.5 | 5 |
| 6/9/14 1:10 | 5.2 | 5 |
| 6/9/14 1:25 | 5.2 | 5 |
| 6/9/14 4:25 | 5.0 | 5 |
| 6/10/14 12:30 | 4.0 | 5 |
| 6/10/14 13:30 | 3.5 | |
| 6/10/14 13:35 | 4.1 | 10 |
| 6/10/14 14:05 | 2.9 | |
| 6/10/14 14:10 | 4.1 | 10 |
| 6/19/14 23:00 | 3.0 | 5 |
| 6/23/14 10:00 | 5.2 | 5 |
| 6/26/14 11:00 | 3.3 | 5 |
| 6/29/14 6:30 | 4.8 | |
| 6/29/14 6:35 | 5.3 | 10 |
| | **June Total:** | **120** |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X_(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | **011** | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 6/10/2014 | | 6/27/2014 | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0851 | | 0600 | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | 14,000 | | 14,000 | | | gal/day |
| Oil & Grease | 200 | G | 5 | | 5 | | | mg/l |
| Biochemical Oxygen Demand | **** | G | 112 | | 18 | | | mg/l |
| Chemical Oxygen Demand | **** | G | 368 | | 102 | | | mg/l |
| Total Suspended Solids | **** | G | 24 | | 14 | | | mg/l |
| Temperature | 60 | G | 33.0 | | 26.7 | | | deg C |
| pH | 5.5 - 11.5 | G | see attached | | see attached | | | S.U. |
| Lab Dilution Factor | | | 1 | | 1 | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X__(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----->> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----->> | | 6/10/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----->> | | 0851 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 14,000 | | | | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | | G | <0.005 | | | | | mg/l |
| 1,1,2-Trichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloroethane | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloropropane | | G | <0.005 | | | | | mg/l |
| 1,3-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 1,4-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 2-Chloroethylvinylether | | G | <0.02 | | | | | mg/l |
| Acrolein | | G | <0.1 | | | | | mg/l |
| Acrylonitrile | | G | <0.005 | | | | | mg/l |
| Benzene | | G | <0.002 | | | | | mg/l |
| Bromodichloromethane | | G | <0.005 | | | | | mg/l |
| Bromoform | | G | <0.005 | | | | | mg/l |
| Bromomethane | | G | <0.01 | | | | | mg/l |
| Carbon Tetrachloride | | G | <0.005 | | | | | mg/l |
| Chlorobenzene | | G | <0.005 | | | | | mg/l |
| Chloroethane | | G | <0.01 | | | | | mg/l |
| Chloroform | | G | 0.006 | | | | | mg/l |
| Chloromethane | | G | <0.01 | | | | | mg/l |
| cis-1,3-Dicholropropene | | G | <0.005 | | | | | mg/l |
| Dibromochloromethane | | G | <0.005 | | | | | mg/l |
| Ethylbenzene | | G | <0.005 | | | | | mg/l |
| Methylene Chloride | | G | <0.005 | | | | | mg/l |
| Tetrachloroethene | | G | <0.005 | | | | | mg/l |
| Toluene | | G | 0.004 | | | | | mg/l |
| trans-1,2-Dichloroethene | | G | <0.005 | | | | | mg/l |
| trans-1,3-Dichloropropene | | G | <0.005 | | | | | mg/l |
| Trichloroethene | | G | <0.005 | | | | | mg/l |
| Vinyl Chloride | | G | 0.003 | | | | | mg/l |
| 1,2,4-Trichlorobenzene | | G | <0.081 | | | | | mg/l |
| 2,4,6-Trichlorophenol | | G | <0.081 | | | | | mg/l |
| 2,4-Dichlorophenol | | G | <0.081 | | | | | mg/l |
| 2,4-Dimethylphenol | | G | <0.081 | | | | | mg/l |
| 2,4-Dinitrophenol | | G | <0.161 | | | | | mg/l |
| 2,4-Dinitrotoluene | | G | <0.081 | | | | | mg/l |
| 2,6-Dinitrotoluene | | G | <0.081 | | | | | mg/l |
| 2-Chloronapthalene | | G | <0.081 | | | | | mg/l |
| 2-Chlorophenol | | G | <0.081 | | | | | mg/l |
| 2-Nitrophenol | | G | <0.161 | | | | | mg/l |
| 3,3-Dichlorobenzidine | | G | <0.081 | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | | G | <0.161 | | | | | mg/l |
| 4-Bromophenyl-phenylether | | G | <0.081 | | | | | mg/l |
| 4-Chloro-3-methylphenol | | G | <0.161 | | | | | mg/l |
| 4-Chlorophenyl-phenylether | | G | <0.081 | | | | | mg/l |
| 4-Nitrophenol | | G | <0.161 | | | | | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X__(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 6/10/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0851 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 14,000 | | | | | gal/day |
| Acenapthene | | G | <0.081 | | | | | mg/l |
| Acenaphthylene | | G | <0.081 | | | | | mg/l |
| Anthracene | | G | <0.081 | | | | | mg/l |
| Benzidine | | G | <0.323 | | | | | mg/l |
| Benzo(a)anthracene | | G | <0.081 | | | | | mg/l |
| Benzo(a)pyrene | | G | <0.081 | | | | | mg/l |
| Benzo(b)fluoranthene | | G | <0.081 | | | | | mg/l |
| Benzo(g,h,i)perylene | | G | <0.081 | | | | | mg/l |
| Benzo(k)fluoranthene | | G | <0.081 | | | | | mg/l |
| Bis(2-chloroethoxy)methane | | G | <0.081 | | | | | mg/l |
| Bis(2-chloroethyl)ether | | G | <0.081 | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | | G | <0.081 | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | | G | <0.048 | | | | | mg/l |
| Butyl benzyl phthalate | | G | <0.081 | | | | | mg/l |
| Chrysene | | G | <0.081 | | | | | mg/l |
| Dibenzo(a,h)anthracene | | G | <0.081 | | | | | mg/l |
| Diethyl phthalate | | G | <0.081 | | | | | mg/l |
| Dimethyl phthalate | | G | <0.081 | | | | | mg/l |
| Di-n-butyl phthalate | | G | <0.081 | | | | | mg/l |
| Di-n-octyl-phthalate | | G | <0.081 | | | | | mg/l |
| Fluoranthene | | G | <0.081 | | | | | mg/l |
| Fluorene | | G | <0.081 | | | | | mg/l |
| Hexachlorobenzene | | G | <0.081 | | | | | mg/l |
| Hexachlorobutadiene | | G | <0.081 | | | | | mg/l |
| Hexachlorocyclopentadiene | | G | <0.161 | | | | | mg/l |
| Hexachloroethane | | G | <0.081 | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | | G | <0.081 | | | | | mg/l |
| Isophorone | | G | <0.081 | | | | | mg/l |
| Naphthalene | | G | <0.081 | | | | | mg/l |
| Nitrobenzene | | G | <0.081 | | | | | mg/l |
| N-nitrosodimethylamine | | G | <0.161 | | | | | mg/l |
| N-nitrosodi-n-propylamine | | G | <0.081 | | | | | mg/l |
| N-nitrosodiphenylamine | | G | <0.081 | | | | | mg/l |
| Pentachlorophenol | | G | <0.161 | | | | | mg/l |
| Phenanthrene | | G | <0.081 | | | | | mg/l |
| Phenol | | G | <0.04 | | | | | mg/l |
| Pyrene | | G | <0.081 | | | | | mg/l |
| 1,2-Diphenylhydrazine | | G | <0.081 | | | | | mg/l |
| **Total Toxic Organics** | 5.844 | -- | 5.462 | | | | | mg/l |
| Shaded values represent detection limits | | | | | | | | |
| Lab Dilution Factor | | | 1, 10 | | | | | |

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| Unplanned Power Outage Manual pH Monitoring | | | |
|---|---|---|---|
| Date | 6/10/2014 | | |
| Sample Point | SP011 | | |
| | | | |
| Time | pH | | |
| 0851 | 6.3 | | |
| 0951 | 6.5 | | |

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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Friday, June 27th, 2014 | | |
| Sample Point | SP011 | | |
| | | | |
| Time | pH | Time | pH |
| 0600 | 8.68 | 1800 | 8.41 |
| 0630 | 8.55 | 1830 | 8.39 |
| 0700 | 8.58 | 1900 | 8.38 |
| 0730 | 8.77 | 1930 | 8.38 |
| 0800 | 8.55 | 2000 | 8.37 |
| 0830 | 8.62 | 2030 | 8.33 |
| 0900 | 8.73 | 2100 | 8.37 |
| 0930 | 8.72 | 2130 | 8.33 |
| 1000 | 8.70 | 2200 | 8.31 |
| 1030 | 8.68 | 2230 | 8.23 |
| 1100 | 8.65 | 2300 | 8.27 |
| 1130 | 8.64 | 2330 | 8.34 |
| 1200 | 8.64 | | |
| 1230 | 8.63 | | |
| 1300 | 8.60 | | |
| 1330 | 8.50 | | |
| 1400 | 8.41 | | |
| 1430 | 8.47 | | |
| 1500 | 8.49 | | |
| 1530 | 7.34 | | |
| 1600 | 7.20 | | |
| 1630 | 7.95 | | |
| 1700 | 7.94 | | |
| 1730 | 8.24 | | |

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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Saturday, June 28th, 2014 | | |
| Sample Point | SP011 | | |
| | | | |
| Time | pH | | |
| 0000 | 8.36 | | |
| 0030 | 8.36 | | |
| 0100 | 8.35 | | |
| 0130 | 8.33 | | |
| 0200 | 8.30 | | |
| 0230 | 8.27 | | |
| 0300 | 8.27 | | |
| 0330 | 8.21 | | |
| 0400 | 8.20 | | |
| 0430 | 8.16 | | |
| 0500 | 8.17 | | |
| 0530 | 6.17 | | |
| 0600 | 8.19 | | |
| 0630 | 8.16 | | |
| 0700 | 8.17 | | |
| 0730 | 8.16 | | |
| 0800 | 7.64 | | |
| 0830 | 7.79 | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) __X__(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | -----> | | **080** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | -----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | -----> | | NA | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Amyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | * | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Diethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | * | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | * | | | | | | mg/L |
| Triethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| | | | | | | | | | | | |
| Oil & Grease | 1664 | 200 | | G | * | | | | | | mg/L |
| Biochemical Oxygen Demand | | **** | | C | * | | | | | | mg/L |
| Chemical Oxygen Demand | | **** | | C | * | | | | | | mg/L |
| Total Suspended Solids | | **** | | C | * | | | | | | mg/L |
| Temperature | | 60 | | G | * | | | | | | deg C |
| pH | | 5.5 - 11.5 | | G | * | | | | | | S.U. |
| *** No flow from SP080 in 2nd QTR 2014** | | | | | | | | | | | |
| Dilution by lab | | | | | NA | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2011 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X__(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----->> | | **080** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----->> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----->> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E= | | | | | | UNITS |
| FLOW | | E | * | | | | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | | G | * | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | | G | * | | | | | mg/l |
| 1,1,2-Trichloroethane | | G | * | | | | | mg/l |
| 1,1-Dichloroethane | | G | * | | | | | mg/l |
| 1,1-Dichloroethene | | G | * | | | | | mg/l |
| 1,2-Dichlorobenzene | | G | * | | | | | mg/l |
| 1,2-Dichloroethane | | G | * | | | | | mg/l |
| 1,2-Dichloropropane | | G | * | | | | | mg/l |
| 1,3-Dichlorobenzene | | G | * | | | | | mg/l |
| 1,4-Dichlorobenzene | | G | * | | | | | mg/l |
| 2-Chloroethylvinylether | | G | * | | | | | mg/l |
| Acrolein | | G | * | | | | | mg/l |
| Acrylonitrile | | G | * | | | | | mg/l |
| Benzene | | G | * | | | | | mg/l |
| Bromodichloromethane | | G | * | | | | | mg/l |
| Bromoform | | G | * | | | | | mg/l |
| Bromomethane | | G | * | | | | | mg/l |
| Carbon Tetrachloride | | G | * | | | | | mg/l |
| Chlorobenzene | | G | * | | | | | mg/l |
| Chloroethane | | G | * | | | | | mg/l |
| Chloroform | | G | * | | | | | mg/l |
| Chloromethane | | G | * | | | | | mg/l |
| cis-1,3-Dicholropropene | | G | * | | | | | mg/l |
| Dibromochloromethane | | G | * | | | | | mg/l |
| Ethylbenzene | | G | * | | | | | mg/l |
| Methylene Chloride | | G | * | | | | | mg/l |
| Tetrachloroethene | | G | * | | | | | mg/l |
| Toluene | | G | * | | | | | mg/l |
| trans-1,2-Dichloroethene | | G | * | | | | | mg/l |
| trans-1,3-Dichloropropene | | G | * | | | | | mg/l |
| Trichloroethene | | G | * | | | | | mg/l |
| Vinyl Chloride | | G | * | | | | | mg/l |
| 1,2,4-Trichlorobenzene | | G | * | | | | | mg/l |
| 2,4,6-Trichlorophenol | | G | * | | | | | mg/l |
| 2,4-Dichlorophenol | | G | * | | | | | mg/l |
| 2,4-Dimethylphenol | | G | * | | | | | mg/l |
| 2,4-Dinitrophenol | | G | * | | | | | mg/l |
| 2,4-Dinitrotoluene | | G | * | | | | | mg/l |
| 2,6-Dinitrotoluene | | G | * | | | | | mg/l |
| 2-Chloronapthalene | | G | * | | | | | mg/l |
| 2-Chlorophenol | | G | * | | | | | mg/l |
| 2-Nitrophenol | | G | * | | | | | mg/l |
| 3,3-Dichlorobenzidine | | G | * | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | | G | * | | | | | mg/l |
| 4-Bromophenyl-phenylether | | G | * | | | | | mg/l |
| 4-Chloro-3-methylphenol | | G | * | | | | | mg/l |
| 4-Chlorophenyl-phenylether | | G | * | | | | | mg/l |
| 4-Nitrophenol | | G | * | | | | | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2011 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X__(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----->> | | **080** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----->> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----->> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E= | | | | | | UNITS |
| FLOW | | E | * | | | | | gal/day |
| Acenapthene | | G | * | | | | | mg/l |
| Acenaphthylene | | G | * | | | | | mg/l |
| Anthracene | | G | * | | | | | mg/l |
| Benzidine | | G | * | | | | | mg/l |
| Benzo(a)anthracene | | G | * | | | | | mg/l |
| Benzo(a)pyrene | | G | * | | | | | mg/l |
| Benzo(b)fluoranthene | | G | * | | | | | mg/l |
| Benzo(g,h,i)perylene | | G | * | | | | | mg/l |
| Benzo(k)fluoranthene | | G | * | | | | | mg/l |
| Bis(2-chloroethoxy)methane | | G | * | | | | | mg/l |
| Bis(2-chloroethyl)ether | | G | * | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | | G | * | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | | G | * | | | | | mg/l |
| Butyl benzyl phthalate | | G | * | | | | | mg/l |
| Chrysene | | G | * | | | | | mg/l |
| Dibenzo(a,h)anthracene | | G | * | | | | | mg/l |
| Diethyl phthalate | | G | * | | | | | mg/l |
| Dimethyl phthalate | | G | * | | | | | mg/l |
| Di-n-butyl phthalate | | G | * | | | | | mg/l |
| Di-n-octyl-phthalate | | G | * | | | | | mg/l |
| Fluoranthene | | G | * | | | | | mg/l |
| Fluorene | | G | * | | | | | mg/l |
| Hexachlorobenzene | | G | * | | | | | mg/l |
| Hexachlorobutadiene | | G | * | | | | | mg/l |
| Hexachlorocyclopentadiene | | G | * | | | | | mg/l |
| Hexachloroethane | | G | * | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | | G | * | | | | | mg/l |
| Isophorone | | G | * | | | | | mg/l |
| Naphthalene | | G | * | | | | | mg/l |
| Nitrobenzene | | G | * | | | | | mg/l |
| N-nitrosodimethylamine | | G | * | | | | | mg/l |
| N-nitrosodi-n-propylamine | | G | * | | | | | mg/l |
| N-nitrosodiphenylamine | | G | * | | | | | mg/l |
| Pentachlorophenol | | G | * | | | | | mg/l |
| Phenanthrene | | G | * | | | | | mg/l |
| Phenol | | G | * | | | | | mg/l |
| Pyrene | | G | * | | | | | mg/l |
| 1,2-Diphenylhydrazine | | G | * | | | | | mg/l |
| | | | | | | | | |
| | | | | | | | | |
| **Total Toxic Organics** | 5.844 | -- | * | | | | | mg/l |
| | | | | | | | | |
| *** No flow from SP080 in 2nd QTR 2014** | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Lab Dilution Factor | | | NA | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) __X__(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | ----> | | **905** | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | ----> | | 5/1/2014 | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | ----> | | 1325 | | | |
| | MONTHLY LIMIT (ave) | DAILY MAX LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | |
| PARAMETER | (gm/day) | (gm/day) | | | Lab results mg/L | | UNITS |
| FLOW | | | M | 19399 | | | gal/day |
| 1,2,4-Trichlorobenzene | 74 | 301 | G | 7.34 | 0.100 | | gm/day |
| 1,2-Dichlorobenzene | 74 | 301 | G | 0.37 | 0.005 | | gm/day |
| 1,3-Dichlorobenzene | 54 | 144 | G | 0.37 | 0.005 | | gm/day |
| 1,4-Dichlorobenzene | 54 | 144 | G | 0.37 | 0.005 | | gm/day |
| 2-Nitrophenol | 25 | 87 | G | 14.69 | 0.200 | | gm/day |
| 2-Methyl-4,6-dinitrophenol | 30 | 105 | G | 14.69 | 0.200 | | gm/day |
| 4-Nitrophenol | 61 | 218 | G | 14.69 | 0.200 | | gm/day |
| Acenapthene | 7 | 18 | G | 0.73 | 0.010 | | gm/day |
| Anthracene | 7 | 18 | G | 0.73 | 0.010 | | gm/day |
| Bis(2-ethylhexyl)phthalate | 36 | 98 | G | 4.41 | 0.060 | | gm/day |
| Diethyl phthalate | 17 | 43 | G | 7.34 | 0.100 | | gm/day |
| Dimethyl phthalate | 7 | 18 | G | 0.73 | 0.010 | | gm/day |
| Di-n-butyl phthalate | 8 | 16 | G | 7.34 | 0.100 | | gm/day |
| Fluoranthene | 8 | 20 | G | 7.34 | 0.100 | | gm/day |
| Fluorene | 7 | 18 | G | 0.73 | 0.010 | | gm/day |
| Hexachlorobenzene | 74 | 301 | G | 7.34 | 0.100 | | gm/day |
| Hexachlorobutadiene | 54 | 144 | G | 7.34 | 0.100 | | gm/day |
| Hexachloroethane | 74 | 301 | G | 7.34 | 0.100 | | gm/day |
| Naphthalene | 7 | 18 | G | 0.73 | 0.010 | | gm/day |
| Phenanthrene | 7 | 18 | G | 0.73 | 0.010 | | gm/day |
| Pyrene | 8 | 18 | G | 7.34 | 0.100 | | gm/day |
| 1,1,1-Trichloroethane | 8 | 22 | G | 0.37 | 0.005 | | gm/day |
| 1,1,2-Trichloroethane | 12 | 48 | G | 0.37 | 0.005 | | gm/day |
| 1,1-Dichloroethane | 8 | 22 | G | 0.37 | 0.005 | | gm/day |
| 1,1-Dichloroethene | 8 | 23 | G | 0.37 | 0.005 | | gm/day |
| 1,2-Dichloroethane | 74 | 301 | G | 0.37 | 0.005 | | gm/day |
| 1,2-Dichloropropane | 74 | 301 | G | 0.37 | 0.005 | | gm/day |
| Benzene | 22 | 51 | G | 0.15 | 0.002 | | gm/day |
| Carbon Tetrachloride | 54 | 144 | G | 0.37 | 0.005 | | gm/day |
| Chlorobenzene | 54 | 144 | G | 0.37 | 0.005 | | gm/day |
| Chloroethane | 42 | 112 | G | 0.73 | 0.010 | | gm/day |
| Chloroform | 42 | 123 | G | 0.37 | 0.005 | | gm/day |
| Chloromethane | 42 | 112 | G | 0.73 | 0.010 | | gm/day |
| cis-1,3-Dichloropropene | 74 | 301 | G | 0.37 | 0.005 | | gm/day |
| Ethylbenzene | 54 | 144 | G | 0.37 | 0.005 | | gm/day |
| Methylene Chloride | 14 | 64 | G | 0.37 | 0.005 | | gm/day |
| Nitrobenzene | 847 | 2423 | G | 7.34 | 0.100 | | gm/day |
| Tetrachloroethene | 20 | 62 | G | 0.37 | 0.005 | | gm/day |
| Toluene | 11 | 28 | G | 0.37 | 0.005 | | gm/day |
| trans-1,2-Dichloroethene | 9 | 25 | G | 0.37 | 0.005 | | gm/day |
| trans-1,3-Dichloropropene | 74 | 301 | G | 0.37 | 0.005 | | gm/day |
| Trichloroethene | 10 | 26 | G | 0.37 | 0.005 | | gm/day |
| Vinyl Chloride | 37 | 65 | G | 0.15 | 0.002 | | gm/day |
| | | | | | | | |
| | | | | | | | |
| Shaded values represent detection limits | | | | | | | |
| | | | | | | | |
| Lab Dilution Factor | | | | 1,10 | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) _X_(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **912** | | **912** | | **912** | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 4/4/2014 | | 5/6/2014 | | 6/2/2014 | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 1330 | | 1310 | | 1300 | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated fld | | | | | | UNITS |
| FLOW | | M | 26556 | M | 7530 | M | 23048 | gal/day |
| | | | | | | | | |
| DMAC (daily max) | 7091 | C | 451 | C | 2 | C | 5 | lb/day |
| DMAC (monthly average) | 5459 | C | 451 | C | 2 | C | 5 | lb/day |
| | | | | | | | | |
| | | | | | | | | |
| | | | 2040 | | 32 | | 26 | mg/L |
| A ~~lb~~ 1 ~~day~~ 1 ~~gal~~ ~~lb~~ | 1e6 | mg | | | | | | |
| ~~day~~ vol ~~gal~~ 3.785L 2.2 ~~lb~~ | | ~~kg~~ | | | | | | |
| Lab Dilution Factor | | | 2 | | 1 | | 1 | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: **MALLINCKRODT INC.**
Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) _X_(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | | | 915 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | | | 5/7/2014 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | | | 0935 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.05 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.05 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.05 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.05 | | | | | | mg/L |
| Chloroform | 524.2 | 0.10 | 0.03 | G | <0.01 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.05 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.05 | | | | | | mg/L |
| Diethyl amine* | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.05 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.05 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.05 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.2 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.05 | | | | | | mg/L |
| Triethyl amine* | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.13 | | | | | | mg/L |
| *** Annual monitoring requirement done in 1st qtr 2014* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 10 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) _X_(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 920 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 4/25/2014 | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1100 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 13,000 | | | | | | | gal/day |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.4 | | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | | mg/L |
| Cyanide (total) | 335.4 | 33.50 | 9.40 | | <0.007 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 1, 20 | | | | | | | |

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Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) X (APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 927 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 6/2/2014 | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1255 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | 0.152 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

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Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) X (APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 930 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | NA | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | NA | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| * No flow from SP930 in 2nd QTR 2014 | | | | | | | | | | | |
| Dilution by lab | | | | | NA | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: Mallinckrodt Inc.

Permit No.: 1011728100-1.1 ·Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) X (APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 933 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 4/7/2014 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0845 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW * | | | | E | * 100 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | 0.008 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.005 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.01 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.005 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.005 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 1 | | | | | | |

* confirmed flow rate per pc w/ J. WILHELM on 8-8-14. SR

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) X (APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** -----> | | | | | **936** | | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** -----> | | | | | 5/6/2014 | | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** -----> | | | | | 1300 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 16,500 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <0.5 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.05 | | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.05 | | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.05 | | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.05 | | | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | <0.01 | | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.05 | | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.05 | | | | | | | mg/L |
| Diethyl amine** | 1671 | 255.00 | 100.00 | G | ** | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.1 | | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.1 | | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.05 | | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.05 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.05 | | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.2 | | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.05 | | | | | | | mg/L |
| Triethyl amine** | 1671 | 255.00 | 100.00 | G | ** | | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.13 | | | | | | | mg/L |
| | | | | | | | | | | | | |
| *** Chloroform Results** | **Raw Water** | **SP936** | **SP936- Raw Water** | | | | | | | | | |
| **5/6/2014** | **<0.01** | **<0.01** | **<0.01** | | | | | | | | | |
| | | | | | | | | | | | | |
| ***Results above reported as the difference between SP936 and Raw Water*** | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| *** Annual monitoring requirement done in 1st qtr 2014* | | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 10 | | | | | | | |

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2014 2Q SP9XX PEG.xlsx

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) _X_(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **937** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 4/25/2014 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1100 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow** | | | | | | | UNITS |
| FLOW | | | | E | 23,000 | | | | | | gal/day |
| Tetrahydrofuran | 524.2 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Cyanide (total) | 335.4 | 33.50 | 9.40 | G | <0.007 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 1, 20 | | | | | | |

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Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | | | 938 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | | | 5/8/2014 | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | | | 0930 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 71 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <0.5 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.05 | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.05 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.05 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 10 | | | | | | | |

RECEIVED
JUL 29 2014
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

June 23, 2014

Sharon R. Cotner
**DEPARTMENT OF THE ARMY,**
**CORPS OF ENGINEERS**
8945 Latty Avenue
Berkeley, MO 63134

**Re: FUSRAP St. Louis Downtown Site**

Dear Ms. Cotner:

We have reviewed your request dated May 1, 2014 for extension of a special discharge originally approved in our letters dated July 23, 2001 and October 13, 2004, and extended in our most recent letter dated May 24, 2012. This approval was for stormwater and groundwater that accumulates in excavations of radioactively contaminated soils at the St. Louis Downtown FUSRAP site located at the Mallinckrodt facility, 3600 N. 2nd Street, St. Louis, Missouri. You have requested a two-year extension of your current approval.

Your request for an extension is granted. This approval will expire on July 23, 2016.

As a condition of this approval, you must notify us of any changes that would affect the characteristics of this discharge. The self-monitoring reporting requirements and all other conditions of the above-referenced approvals remain in effect.

Please contact me at (314) 436-8755 with questions or comments.

Sincerely,
**METROPOLITAN ST. LOUIS SEWER DISTRICT**

Steven M. Grace

Steve Grace
Environmental Assistant Engineer

bv

ec: Brian Gibson
Doug Mendoza

File: IU – MALLINCKRODT INC [1011728100]; SP809

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

May 01, 2014

REPLY TO
ATTENTION OF:

FUSRAP/SLDS

Mr. Steve Grace
Metropolitan St. Louis Sewer District
Office of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

SUBJECT: FUSRAP St. Louis Downtown Site (SLDS) Metropolitan St. Louis Sewer District (MSD) Discharge Permit

Dear Mr. Grace:

The U.S. Army Corps of Engineers (USACE) is requesting a 2-year extension to the existing SLDS MSD Discharge Permit. The total amount of water discharged from this site will remain limited to 100,000 gallons per day, unless otherwise authorized by the MSD.

Please contact Ms. Susan Adams of the USACE at 314.260.3932 with any questions.

Sincerely,

Sharon Cotner

Sharon Cotner
FUSRAP Program Manager

CF:
Distribution

Mallinckrodt Pharmaceuticals

SR
TB

June 19th, 2014

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147
**VIA FED EX: 8057 6404 9005**

RE: **Planned Electrical Outage** - PERMIT NO. 1011728100-1.1

Dear Mr. Mendoza,

A plant-wide electrical outage for maintenance repairs is expected to occur on or about June 28th in order to initiate repairs to one of the plant's electrical feeders. This schedule is dependent on coordinating repair activities with Ameren UE and is anticipated to last approximately 12 hours. As a result of this outage, the two lift stations at Sample Points 008 and 011 will lose power, causing the plant's wastewater to overflow through these sample points rather than to the plant-wide pH neutralization tanks and through our main outfall, Sample Point 010.

Per our permit conditions, a sample will be taken at the two sample points after overflow discharge commences, in addition to the collection of pH readings. There will be no processes in operation as a result of the power outage, and therefore reduced wastewater discharge is expected. This notification is in accordance with Ordinance 12559 and Permit #1011728100-1.1.

If you have any questions or require additional information, please contact me at 314-654-0384 or via email at jada.wilhelm@mallinckrodt.com.

Sincerely,

Jada Wilhelm

Jada Wilhelm
Environmental Specialist

cc: Tom Boehm, MSD (via email)
Brett Shank, Environmental Manager (via email)

RECEIVED
JUN 20 2014
DIVISION OF
ENVIRONMENTAL COMPLIANCE

MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

**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 17, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Mr. Shank:

We have reviewed your application dated June 12, 2014 requesting approval to discharge 1,500 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater consists of a calcium chloride solution, which was an extra raw material unable to be processed in Building X at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. We understand that the wastewater will be discharged through sampling point 010.

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. The discharge into the sewer must be controlled at a rate that will not surcharge the lines in the 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 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, Mallinckrodt 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, MALLINCKRODT INC [1011728100]

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt LLC  Evaluated by: SMG

Premise Address: 3600 N. 2nd St.  Date: 6/17/14

Send approval letter to applicant

Application Dated: 6/12/14 Received: 6/12/14 All Requested Info. Received: 6/17/14

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: 101172810 0

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 8 18 Description: Calcium chloride soln. (extra raw matl. unable to be processed in Bldg. X

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: Mallinckrodt LLC
Premise Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt LLC
Contact Person: Brett Shank
Title: Environmental Manager
Phone: 314.654.0002 Fax: 314.724.4157

## II. APPLICANT (mailing information):

Applicant Name: Brett Shank
Title: Environmental Manager
Company Name: Mallinckrodt LLC
Mailing Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314.654.0002 Fax: 314.724.4157

## III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):

1. Wastewater description/location: Calcium Chloride Solution (Salt Water) from Building X
2. Process/activity generating wastewater: Extra raw material unable to process.
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 |
|---|---|---|
| Calcium Chloride | 28 - 42 | % |
| Water | 53 - 72 | % |
| Potassium Chloride | 0 - 3 | % |
| Sodium Chloride | 0 - 2 | % |

| 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: _____ Gallons
   b. Proposed discharge volume: 1500 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: pH adjustment at main plant outfall SP010
   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): _____
Building X to plant sewer to SP010 _____ 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):** Brett Shank

**Signature:** _____ **Date:** 06/12/2014

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 1011728100 Sample Point No. 818

**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 10, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Mr. Shank:

We have reviewed your application dated June 6, 2014 requesting approval to discharge 350 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater consists of an unusable batch of Ioversol from Building 504 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. Information provided previously indicates Ioversol is a contrast imaging media, and that the wastewater in question will be discharged through sampling point 010.

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, Mallinckrodt 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, MALLINCKRODT INC [1011728100]

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt LLC  Evaluated by: SMG

Premise Address: 3600 N. 2nd St.  Date: 6/10/14

Send approval letter to applicant

Application Dated: 6/6/14 Received: 6/9/14 All Requested Info. Received: 6/10/14

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: 1011728100

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 845 Description: unusable batch of Ioversol soln. from Bldg. 504

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: Mallinckrodt LLC
Premise Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt LLC
Contact Person: Brett Shank
Title: Environmental Manager
Phone: 314.654.0002 Fax: 314.724.4157

**II. APPLICANT (mailing information):**

Applicant Name: Brett Shank
Title: Environmental Manager
Company Name: Mallinckrodt LLC
Mailing Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314.654.0002 Fax: 314.724.4157

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Ioversol Solution from Building 504
2. Process/activity generating wastewater: Ioversol solution from process generation.
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 |
|---|---|---|
| Ioversol | 30 | % |
| Water | 70 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 350 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: pH adjustment at main plant outfall SP010
   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): _____
Building 504 to plant sewer to SP010 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):** Brett Shank

**Signature:** _____ **Date:** 06/06/14

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 1011728100 Sample Point No. 845

Mallinckrodt Pharmaceuticals

Mallinckrodt LLC
1011 728100

May 23, 2014

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147
**VIA FED EX: 8057 6404 8925**

- 5 day follow-up for problem discharge on 5/20/14

RE: Follow-up Report for Potential Hydraulic Oil Discharge from Mallinckrodt St. Louis Plant on May 20, 2014

This letter is a follow-up written notification regarding the May 20, 2014 oral notification of a potential release of hydraulic oil at the Mallinckrodt plant located at 3600 North Second Street, St. Louis MO.

At approximately 06:10 am on May 20, 2014 approximately 0.3 gallons of hydraulic oil was spilled as a result of a water main break in the alley between buildings 5 and 6/7 and a portion of that amount was discharged to the combined sewer which discharges wastewater from the plant to the MSD system. Courtesy notification to MSD was provided by the EHS On-Call representative at 6:20 am as building representatives noticed an oily sheen emanating from the elevator pit which was draining to the combined sewer in the alley.

The source of the oily sheen emanating from the elevator pit in building 5 was a small amount of material from a container that is used to capture skimmed oil during routine operation of the elevator. Due to the type of elevator system that is present, the pole that the elevator travels on receives a slight coat of hydraulic oil as the elevator travels and uses a skimmer to clean the pole. This skimmed oil is then subsequently collected at the base of the pole in a container. During routine maintenance and inspection, the material that is collected in the container is recycled from the bucket back into the hydraulic oil system. It is standard practice that this container does not exceed approximately 0.3 gallons of material at a given time. When water rushed into the building, the container overturned and as a result a small quantity of material was released. Some portion of this material was contained in the elevator system and has subsequently been managed as waste material. No employees were exposed to the spilled material.

MSD's emergency response personnel visited the Plant at approximately 11:15 am on May 20, 2014, observed the source location of the spilled material, and considered at the time that this not a compliance issue. Corrective actions that will be implemented as a result of this incident are repairs to the subsurface water line which are currently in process. Intentions for installation of isolation valves are intended in order to rapidly isolate potential future leaks in this area of the plant. By being able to quickly isolate subsurface water line breaks will result in less potential for flooding areas that are located below grade such as the elevator pit.

RECEIVED
MAY 27 2014
DIVISION OF ENVIRONMENTAL COMPLIANCE

MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
314-654-1231

Mallinckrodt
Pharmaceuticals

If you have any questions or require additional information, please contact me at 314-654-0002 or via email at brett.shank@mallinckrodt.com.

Sincerely,

Brett Shank
Environmental Manager

RECEIVED
MAY 27 2014

MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

TCB
SR ✓
DE 5/29/14

# INDUSTRY REPORT OF FLOW MEASUREMENT AT TIME OF MSD SAMPLING FOR DISCHARGE POINTS HAVING MASS LIMITATIONS

COMPANY NAME: Mallinckrodt LLC PERMIT NO: 101728100

Presented to company representative (Name) Jada Wilhelm by:

MSD Ind. Waste Technician Dave Sheppers Date 5/20/14 Time 10:25

Certain wastewater discharges from your facility are subject to mass limitations as specified in your Industrial Wastewater Discharge Permit. MSD technicians collected samples from these locations on the date and times indicated below.

In order for MSD to fully evaluate the results of this sampling, you must, for each point, provide MSD with a measured flow for a 24-hour period. The 24 hour period must include the hours between the sample collection Start and End Times shown.

If you have any questions, you may contact Doug Mendoza at (314) 436-8717.

**Industry Representative: Please fill in the information on the right side of this table and sign below:**

| Samp Pt # | Sample Collection by MSD | | | | | 24-hour Flow Measurement by Company | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Sample Match # | Start Date | End Date | Start Time | End Time | Start Time | End Time | Total Flow | Units |
| 905 | 1497797 | 5/20/14 | 5/21/14 | 10:23 am | 10:11 am | 1028 | 1015 | 29,570 | gal. |
| | | | | | | 05-20-14 | 05-21-14 | | |
| | | | | | | | | | |
| | | | | | | | | | |

I certify under penalty of Law that the flow information in this document was 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.

Signature: Jada L. Wilhelm Date: 05-27-14

**As soon as possible, and no later than 14 days after the Sample End date, send the completed form:**

Via US Mail: Attn: Doug Mendoza
Metropolitan St. Louis Sewer District
Office of Environmental Compliance
10 E. Grand Avenue
St. Louis, MO 63147

or, via fax: Attn: Doug Mendoza
(314) 436-8753

MSD-OEC 01/02

## Tom Boehm

SR

**From:** Tom Boehm
**Sent:** Tuesday, May 20, 2014 2:48 PM
**To:** Doug Mendoza; Alverda Oppermann
**Cc:** Mike Merli; Scott Rehmer
**Subject:** RE: MALLINCKRODT, 3600 N 2ND ST 1011729.00

- notification of problem discharge (hydraulic oil)

**Tracking:**

| Recipient | Delivery |
|---|---|
| Doug Mendoza | Delivered: 5/20/2014 2:48 PM |
| Alverda Oppermann | Delivered: 5/20/2014 2:48 PM |
| Mike Merli | Delivered: 5/20/2014 2:48 PM |
| Scott Rehmer | Delivered: 5/20/2014 2:48 PM |

All,

A representative of Mallinckrodt called Customer Service this morning at 6:30 am to report a discharge of oil from an elevator shaft sump, but no details were given.

I called the facility contact, Brett Shank, at ~ 8:00 am and asked for additional details and to remind him of the 5 day follow up requirement.

He left a voicemail stating a fire main broke and the water reached an elevator shaft sump and mixed with hydraulic oil which flowed to sewer. He estimated only a gallon or so of oil was impacted.

He will gather details and submit a 5 day follow up letter.

Please call or write with any questions or comments.

Tom Boehm | Metropolitan St. Louis Sewer District | Engineering/Environmental Compliance | p. 314.436.8719 | f. 314.436.8753

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**From:** Alverda Oppermann
**Sent:** Tuesday, May 20, 2014 7:36 AM
**To:** Doug Mendoza
**Cc:** Mike Merli; Scott Rehmer
**Subject:** MALLINCKRODT, 3600 N 2ND ST

Doug,

I received Service Request (SR) 95670 for an internal oil discharge to the sanitary main.
The SR is time stamped 05/20/14 @ 06:31 AM.
Customer called: Mealine Dunay, 314-486-2963.

Summary: "THERE WAS A WATER MAIN BREAK IN THE AREA CAUSING WATER INTO THE ELEVATOR SHAFT, AND THAT RELEASED OIL INTO THE SEWER. THEY WERE TOLD THEY HAVE TO NOTIFY MSD."

This is in a hazardous zone, and with the flow in the main, it is unlikely that we would see anything in the sanitary at this point. I just thought you might want to have someone call Mallinckrodt for ISU standpoint. Please let me know if you will take the lead on this issue.

If you are going to check into this then I'll not send anyone out from this group, but if you need anything from this group just let me know. Thanks.

*Alverda K. Oppermann*
*Division Inspector*
*Division of Environmental Compliance*
*Metropolitan St. Louis Sewer District*
*10 East Grand Avenue*
*St. Louis, MO 63147-2913*
*PH: 314-436-8735*
*FAX: 314-436-8766*
*Email: akoppe@stlmsd.com*

*Please consider the environment before printing this email.*

**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

May 12, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Mr. Shank:

We have reviewed your application dated May 7, 2014 requesting approval to discharge 30 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is an off-specification batch of iothalmic acid resulting from a process upset in Building 200 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. We understand that the wastewater will be discharged through sampling point 010.

Based on the information and laboratory analytical report you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a combined sewer on site. The discharge into the sewer must be controlled at a rate that will not surcharge the lines in the area. **This approval is valid for 30 days from the date of this letter.**

You must be certain the waste is discharged into a 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, Mallinckrodt 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, MALLINCKRODT LLC [1011728100]

Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

# APPLICATION FOR SPECIAL DISCHARGE APPROVAL

**I. WASTEWATER SOURCE IDENTIFICATION:**

Site Name: Mallinckrodt LLC
Premise Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt LLC
Contact Person: Brett Shank
Title: Environmental Manager
Phone: 314.654.0002 Fax: 314.724.4157

**II. APPLICANT (mailing information):**

Applicant Name: Brett Shank
Title: Environmental Manager
Company Name: Mallinckrodt LLC
Mailing Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314.654.0002 Fax: 314.724.4157

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Half Amide Solution from Building 200W
2. Process/activity generating wastewater: Process Upset
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 |
|---|---|---|
| Half Amide Solution | 15 | % |
| Water | 85 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 30 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: pH adjustment at main plant outfall SP010
   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): _____
Building 200W to plant sewer to SP010 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):** Brett Shank

**Signature:** _____ **Date:** 05/07/2014

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 1011728100 Sample Point No. 853

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt LLC  Evaluated by: SMG

Premise Address: 3600 N. 2nd St  Date: 5/12/14

Send approval letter to applicant

Application Dated: 5/7/14 Received: 5/8/14 All Requested Info. Received: 5/12/14

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: 1011728100

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 853 Description: Off-spec batch of half amide soln. (iothalmic acid) resulting from a process upset

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

**TO:** Chris Verplancke - Finance Department

**FROM:** Steven M. Grace – DEC SMG

**DATE:** May 7, 2014

**RE:** **Wastewater User Charge Billing for Special Discharge**

Please bill, by invoice, the following charges applicable to an on-site special discharge approved in our original letter dated October 30, 1998, and extended in our most recent letter dated May 24, 2012. The discharge dates and quantity are from information submitted by Sharon Cotner, Corps of Engineers, in a letter dated April 30, 2014.

This charge is based on the rates in MSD Wastewater User Charge Ordinance 13042.

**PARTY TO BILL:** **Larry Joellenbeck**
**The Shaw Group Inc.**
**1 Angelrodt Street**
**St. Louis, MO 63147**

**BILLING IS FOR:** **On-Site Special Discharge**

**DISCHARGE PERIOD:** **January through March 2014**

**SOURCE OF WASTE:** **Treated construction water from the St. Louis Downtown FUSRAP Site located at Mallinckrodt, Inc., 3600 N. Second Street, St. Louis, Missouri.**

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| 1/1/14 - 3/31/14 | Volume | 103 | CcF | $2.50 | $257.50 |
| Totals: | --- | 103 | CcF | --- | $257.50 |

If you have any questions, please call me on extension 8755.

bv

ec: Cynthia Chalk – Finance Dept.
Laura Joiner – Finance Dept.
Brian Gibson
Doug Mendoza
Larry Joellenbeck, The Shaw Group Inc., 1 Angelrodt St., St. Louis, MO 63147

File: IU, MALLINCKRODT INC [1011728100]

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

SR

April 30, 2014

Formerly Utilized Sites Remedial Action Program (FUSRAP)

SUBJECT: Quarterly Metropolitan Sewer District (MSD) Self-Monitoring Report for January through March 2014, FUSRAP St. Louis Sites

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

Dear Mr. Grace:

During the first quarter of 2014, one batch of wastewater from the North St. Louis County Sites was discharged to the MSD. Batch 288 occurred late in the fourth quarter of CY 2013 and is included in this report. For the batches reported in this quarter, 196,026 gallons of wastewater were discharged with activities of 7.1E-07 curies of thorium, 8.8E-06 curies of uranium, and 8.1E-07 curies of radium. Both batches (Batch 288 and Batch 289) were from the St. Louis Airport Site Vicinity Properties.

During the first quarter of 2014, five batches of wastewater from the St. Louis Downtown Site were discharged to the MSD. Batch 517 occurred late in the fourth quarter of CY 2013 and is included in this report. Batches 521 and Batch 522 occurred late in the first quarter of CY 2014 and will be included in the second quarter of 2014 report. For the batches reported in this quarter, 76,935 gallons of wastewater were discharged with activities of 4.8E-07 curies of thorium, 2.8E-05 curies of uranium, and 5.1E-07 curies of radium. Three batches (Batch 517, Batch 518, and Batch 520) were from Plant 6 West Half. One batch (Batch 519) was from the City Property Vicinity Property (DT-2). Data for each discharge are presented on the attached pages.

Should you have any comments or questions regarding this letter, please feel free to contact Ms. Laura Ruf at (314) 260-3917.

Sincerely,

Sharon Cotner

Sharon R. Cotner
FUSRAP Program Manager

Enclosures

RECEIVED
MAY 02 2014
DIVISION OF
ENVIRONMENTAL COMPLIANCE

## FUSRAP North St. Louis County Sites
## Self-Monitoring Report for 1st Quarter 2014

| Parameter | Batch Number | Date of Discharge | Batch[1] Results | | Amount Discharged (Gallons) | Total Activity[4] per Discharge (Ci) | MSD Limits | | 10CFR20 Limits | | 10CFR20 Sum of Ratios |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Alpha (raw water) | SLAPS-288[6] | 12/03/13 | 33 | pCi/L | 50,423 | 8.2E-06 | 3000 | pCi/L | 3000 | pCi/L | |
| Gross Beta | | (Ballfields SLAPS VP) | <12 | pCi/L | | 1.1E-06 | N/A | pCi/L | N/A | pCi/L | |
| TH-228 | | | <0.4 | pCi/L | | 4.2E-08 | 2000 | pCi/L | 2000 | pCi/L | |
| TH-230 | | | 1 | pCi/L | | 2.0E-07 | 1000 | pCi/L | 1000 | pCi/L | |
| Uranium (KPA) | | | 32 | pCi/L | | 6.0E-06 | 3000 | pCi/L | 3000 | pCi/L | |
| RA-226 | | | <2 | pCi/L | | 2.4E-07 | 10 | pCi/L | 600 | pCi/L | |
| RA-228[2] | | | <0.4 | pCi/L | | 4.2E-08 | 30 | pCi/L | 600 | pCi/L | 0.01 |
| Barium | | | [8] | mg/L | | | 10 | mg/L | | | |
| Lead | | | [8] | mg/L | | | 0.40 | mg/L | | | |
| Selenium[5] | | | [8] | mg/L | | | 0.20 | mg/L[5] | | | |
| BOD[3] | | | | mg/L | | | | | | | |
| COD[3] | | | | mg/L | | | | | | | |
| Gross Alpha (TSS filtrate) | | | 36 | pCi/L | | | | | | | |
| Total Suspended Solids | | | 13 | mg/L | | | | | | | |
| Gross Alpha (raw water) | SLAPS-289[7] | 02/19/14 - 02/20/14 | <12 | pCi/L | 145,603 | 3.2E-06 | 3000 | pCi/L | 3000 | pCi/L | |
| Gross Beta | | (Ballfields SLAPS VP) | <12 | pCi/L | | 3.3E-06 | N/A | pCi/L | N/A | pCi/L | |
| TH-228 | | | <0.5 | pCi/L | | 1.3E-07 | 2000 | pCi/L | 2000 | pCi/L | |
| TH-230 | | | 0.6 | pCi/L | | 3.3E-07 | 1000 | pCi/L | 1000 | pCi/L | |
| Uranium (KPA) | | | 5 | pCi/L | | 2.8E-06 | 3000 | pCi/L | 3000 | pCi/L | |
| RA-226 | | | <1..5 | pCi/L | | 4.0E-07 | 10 | pCi/L | 600 | pCi/L | |
| RA-228[2] | | | <0.5 | pCi/L | | 1.3E-07 | 30 | pCi/L | 600 | pCi/L | 0.00 |
| Barium | | | [8] | mg/L | | | 10 | mg/L | | | |
| Lead | | | [8] | mg/L | | | 0.40 | mg/L | | | |
| Selenium[5] | | | [8] | mg/L | | | 0.20 | mg/L[5] | | | |
| BOD[3] | | | | mg/L | | | | | | | |
| COD[3] | | | | mg/L | | | | | | | |
| Gross Alpha (TSS filtrate) | | | <12 | pCi/L | | | | | | | |
| Total Suspended Solids | | | 8 | mg/L | | | | | | | |

[1] = Non-detect sample results are converted to half the detection limit.
[2] = Ra-228 assumed to be in equilibrium with Th-228
[3] = MSD surcharges apply for BOD concentration > 300 mg/L and COD concentration > 600 mg/L.
[4] = The weighted average was used to calculate the total activity.
[5] = The limit for selenium can be a daily total mass of 76 grams, with a concentration not to exceed 0.90 mg/L. See Attachment 1 for selenium variance calculation.
[6] = Batch 288 occurred late in the Fourth Quarter and is included in this First Quarter Report.
[7] = See Attachment 2 - Batch 289 Discharge Table
[8] = Analysis for metals is not required per MSD Letter 05/24/12.
N/A - Not applicable
pCi/L - picocuries per liter
mg/L - milligrams per liter
Ci - curies

**Total Activity Discharged in 1st Quarter of CY14 (Ci)**

| | |
|---|---|
| TH-228 | 1.7E-07 |
| TH-230 | 5.3E-07 |
| Uranium (KPA) | 8.8E-06 |
| RA-226 | 6.4E-07 |
| RA-228[2] | 1.7E-07 |

**Total Volume for 1st Quarter of CY14 (gal)**

| | |
|---|---|
| Gallons | 196,026 |

**Total Activity Discharged through 03/31/14 (Ci)**

| | |
|---|---|
| TH-228 | 1.7E-07 |
| TH-230 | 5.3E-07 |
| Uranium (KPA) | 8.8E-06 |
| RA-226 | 6.4E-07 |
| RA-228[2] | 1.7E-07 |

1.031 e-5 Ci
= 1.031 e-2 mCi

**Volume Discharged through 03/31/14 (gal)**

| | |
|---|---|
| Gallons | 196,026 |

## Attachment 2
## FUSRAP North St. Louis County Sites
## Batch 289 Discharge Table 02/19/14 - 02/20/14

| NCVP | Date: | 02/19/14 | 02/20/14 | Total | Result[3,4] |
|---|---|---|---|---|---|
| | Volume Discharged: | 75,255 | 70,348 | 145,603 | |
| | Sample ID: | SVP122433 | SVP122434 | | |
| Gross Alpha, raw water (HISS, pCi/L): | | 10.24 | 11.52 | | 10.86 |
| Gross Beta, raw water (HISS, pCi/L): | | 15.39 | 8.17 | | 11.90 |
| Total Uranium, KPA (filtered, HISS, pCi/L): | | 1.61 | 8.20 | | 4.79 |
| Isotopics (HISS, pCi/L): | | | | | |
| | Th-228 | 0.12 | 0.56 | | 0.33 |
| | Th-230 | 0.52 | 0.60 | | 0.56 |
| | Ra-226 | -0.12 | 0.10 | | -0.01 |
| | Ra-228[2] | 0.12 | 0.56 | | 0.33 |
| Barium (mg/L)[1]: | | 5 | | | 5 |
| Lead (mg/L)[1]: | | 5 | | | 5 |
| Selenium (mg/L)[1]: | | 5 | | | 5 |
| BOD (mg/L): | | N/A | | | N/A |
| COD (mg/L): | | N/A | | | N/A |
| Gross Alpha, TSS filtrate (HISS, pCi/L): | | 5.44 | 3.84 | | 4.67 |
| Total Suspended Solids (HISS, mg/L): | | 6.50 | 8.60 | | 7.51 |

NOTES:

[1] = The chemical results were used for final discharge

[2] = Ra-228 assumed to be in equilibrium with Th-228

[3] = Highest MDA used for calculation

[4] = Volume weighted average was used to calculate the total activity.

[5] = Analysis for metals is not required per MSD Letter 05/24/12.

N/A=Not Applicable

MDA=Minimum Detectable Activity

pCi/L - picocuries per liter

mg/L - milligrams per liter

Ci - curies

## FUSRAP St. Louis Downtown Site
## Self-Monitoring Report for 1st Quarter 2014

| Parameter | Batch Number | Date of Discharge | Batch[1] Results | Amount Discharged (gallons) | Total Activity[3] per Discharge (Ci) | MSD Limits | 10CFR20 Limits | 10CFR20 Sum of Ratios |
|---|---|---|---|---|---|---|---|---|
| Gross Alpha (raw water) | SLDS-BK517[4] | 12/23/13 (6WH) | 50 pCi/L | 28,185 | 5.3E-06 | 3,000 pCi/L | 3,000 pCi/L | |
| Gross Beta | | | 23 pCi/L | | 2.5E-06 | N/A | N/A | |
| TH-228 | | | 0.6 pCi/L | | 6.4E-08 | 2,000 pCi/L | 2,000 pCi/L | |
| TH-230 | | | 1 pCi/L | | 1.3E-07 | 1,000 pCi/L | 1,000 pCi/L | |
| TH-232 | | | <0.3 pCi/L | | 1.3E-08 | 300 pCi/L | 300 pCi/L | |
| Uranium (KPA) | | | 42 pCi/L | | 4.5E-06 | 3,000 pCi/L | 3,000 pCi/L | |
| RA-226 | | | <3 pCi/L | | 1.7E-07 | 10 pCi/L | 600 pCi/L | |
| RA-228[2] | | | 0.6 pCi/L | | 6.4E-08 | 30 pCi/L | 600 pCi/L | 0.02 |
| Total Suspended Solids | | | 13 mg/L | | | | | |
| Gross Alpha (raw water) | SLDS-BK518[5] | 01/13/14 - 01/14/14 (6WH) | 129 pCi/L | 35,060 | 1.7E-05 | 3,000 pCi/L | 3,000 pCi/L | |
| Gross Beta | | | 36 pCi/L | | 4.8E-06 | N/A | N/A | |
| TH-228 | | | <1 pCi/L | | 6.5E-08 | 2,000 pCi/L | 2,000 pCi/L | |
| TH-230 | | | <1 pCi/L | | 8.4E-08 | 1,000 pCi/L | 1,000 pCi/L | |
| TH-232 | | | <0.7 pCi/L | | 4.6E-08 | 300 pCi/L | 300 pCi/L | |
| Uranium (KPA) | | | 160 pCi/L | | 2.1E-05 | 3,000 pCi/L | 3,000 pCi/L | |
| RA-226 | | | <2 pCi/L | | 1.4E-07 | 10 pCi/L | 600 pCi/L | |
| RA-228[2] | | | <1 pCi/L | | 6.5E-08 | 30 pCi/L | 600 pCi/L | 0.06 |
| Total Suspended Solids | | | 22 mg/L | | | | | |
| Gross Alpha (raw water) | SLDS-BK519 | 02/14/14 (City Property) | <12 pCi/L | 1,000 | 2.2E-08 | 3,000 pCi/L | 3,000 pCi/L | |
| Gross Beta | | | <12 pCi/L | | 2.3E-08 | N/A | N/A | |
| TH-228 | | | <0.7 pCi/L | | 1.2E-09 | 2,000 pCi/L | 2,000 pCi/L | |
| TH-230 | | | 2 pCi/L | | 7.6E-09 | 1,000 pCi/L | 1,000 pCi/L | |
| TH-232 | | | <0.4 pCi/L | | 7.9E-10 | 300 pCi/L | 300 pCi/L | |
| Uranium (KPA) | | | <2.5 pCi/L | | 4.6E-09 | 3,000 pCi/L | 3,000 pCi/L | |
| RA-226 | | | <2 pCi/L | | 3.1E-09 | 10 pCi/L | 600 pCi/L | |
| RA-228[2] | | | <0.7 pCi/L | | 1.2E-09 | 30 pCi/L | 600 pCi/L | 0.01 |
| Total Suspended Solids | | | 44 mg/L | | | | | |
| Gross Alpha (raw water) | SLDS-BK520[6] | 02/19/14 (6WH) | 80 pCi/L | 12,690 | 3.8E-06 | 3,000 pCi/L | 3,000 pCi/L | |
| Gross Beta | | | 60 pCi/L | | 2.9E-06 | N/A | N/A | |
| TH-228 | | | <0.4 pCi/L | | 1.0E-08 | 2,000 pCi/L | 2,000 pCi/L | |
| TH-230 | | | 1 pCi/L | | 5.8E-08 | 1,000 pCi/L | 1,000 pCi/L | |
| TH-232 | | | <0.2 pCi/L | | 4.8E-09 | 300 pCi/L | 300 pCi/L | |
| Uranium (KPA) | | | 51 pCi/L | | 2.4E-06 | 3,000 pCi/L | 3,000 pCi/L | |
| RA-226 | | | <2 pCi/L | | 5.3E-08 | 10 pCi/L | 600 pCi/L | |
| RA-228[2] | | | <0.4 pCi/L | | 1.0E-08 | 30 pCi/L | 600 pCi/L | 0.02 |
| Total Suspended Solids | | | 37 mg/L | | | | | |

NOTES:
[1] = Non-detect sample results are converted to half the detection limit.
[2] = Ra-228 assumed to be in equilibrium with Th-228
[3] = The weighted average was used to calculate the total activity.
[4] = Batch 517 occurred late in the Fourth Quarter and is included in this First Quarter Report.
[5] = See Attachment 1 - Batch 518 Discharge Table
[6] = Batch 521 and Batch 522 occurred late in the First Quarter and will be included in the Second Quarter Report.
N/A = Not applicable
pCi/L - picocuries per liter
mg/L - milligrams per liter
Ci - curies

**Total Activity Discharged in 1st Quarter of CY14 (Ci)**

| | |
|---|---|
| TH-228 | 1.4E-07 |
| TH-230 | 2.8E-07 |
| TH-232 | 6.5E-08 |
| Uranium (KPA) | 2.8E-05 |
| RA-226 | 3.7E-07 |
| RA-228[2] | 1.4E-07 |

**Total Activity Discharged through 03/31/14 (Ci)**

| | |
|---|---|
| TH-228 | 1.4E-07 |
| TH-230 | 2.8E-07 |
| TH-232 | 6.5E-08 |
| Uranium (KPA) | 2.8E-05 |
| RA-226 | 3.7E-07 |
| RA-228[2] | 1.4E-07 |

0.028995 mCi

**Total Volume for 1st Quarter of CY14 (gal)**
Gallons 76,935

**Volume Discharged through 03/31/14 (gal)**
Gallons 76,935

St. Louis Downtown Site MSD 1st Quarter 2014 Data

| Batch | Sample ID | Collection Date | Analyte | Units | Results | MDA | Lab ID | Location |
|---|---|---|---|---|---|---|---|---|
| Batch 517 (01) | SLD155718TW | 12/23/2013 | Gross Alpha | pCi/L | 49.60 | 11.39 | HISS | 6WH LOADOUT |
| Batch 517 (01) | SLD155718TW | 12/23/2013 | TotalU | pCi/L | 41.96 | 3.42 | HISS | 6WH LOADOUT |
| Batch 517 (01) | SLD155718TW | 12/23/2013 | pH | pH units | 7.41 | 0.10 | HISS | 6WH LOADOUT |
| Batch 517 (01) | SLD155718TW | 12/23/2013 | RA-226 | pCi/L | 1.29 | 3.28 | HISS | 6WH LOADOUT |
| Batch 517 (01) | SLD155718TW | 12/23/2013 | TH-228 | pCi/L | 0.60 | 0.55 | HISS | 6WH LOADOUT |
| Batch 517 (01) | SLD155718TW | 12/23/2013 | TH-230 | pCi/L | 1.20 | 0.25 | HISS | 6WH LOADOUT |
| Batch 517 (01) | SLD155718TW | 12/23/2013 | TH-232 | pCi/L | 0.09 | 0.25 | HISS | 6WH LOADOUT |
| Batch 517 (01) | SLD155718TW | 12/23/2013 | Total Suspended Solids | mg/L | 12.80 | 5.33 | HISS | 6WH LOADOUT |
| Batch 517 (01) | SLD155718TW | 12/23/2013 | Gross Beta | pCi/L | 23.24 | 11.94 | HISS | 6WH LOADOUT |
| Batch 518 (01) | SLD155719TW | 1/13/2014 | Gross Alpha | pCi/L | 24.00 | 11.4 | HISS | 6WH LOADOUT |
| Batch 518 (01) | SLD155719TW | 1/13/2014 | TotalU | pCi/L | 31.40 | 4.89 | HISS | 6WH LOADOUT |
| Batch 518 (01) | SLD155719TW | 1/13/2014 | pH | pH units | 7.03 | 0.1 | HISS | 6WH LOADOUT |
| Batch 518 (01) | SLD155719TW | 1/13/2014 | RA-226 | pCi/L | 0.34 | 1.36 | HISS | 6WH LOADOUT |
| Batch 518 (01) | SLD155719TW | 1/13/2014 | TH-228 | pCi/L | 0.88 | 0.983 | HISS | 6WH LOADOUT |
| Batch 518 (01) | SLD155719TW | 1/13/2014 | TH-230 | pCi/L | 1.41 | 1.26 | HISS | 6WH LOADOUT |
| Batch 518 (01) | SLD155719TW | 1/13/2014 | TH-232 | pCi/L | 0.18 | 0.701 | HISS | 6WH LOADOUT |
| Batch 518 (01) | SLD155719TW | 1/13/2014 | Total Suspended Solids | mg/L | 9.2 | 5.33 | HISS | 6WH LOADOUT |
| Batch 518 (01) | SLD155719TW | 1/13/2014 | Gross Beta | pCi/L | 6.25 | 11.9 | HISS | 6WH LOADOUT |
| Batch 518 (02) | SLD155720TW | 1/14/2014 | Gross Alpha | pCi/L | 212.00 | 11.4 | HISS | 6WH LOADOUT |
| Batch 518 (02) | SLD155720TW | 1/14/2014 | TotalU | pCi/L | 261.00 | 2.45 | HISS | 6WH LOADOUT |
| Batch 518 (02) | SLD155720TW | 1/14/2014 | pH | pH units | 6.78 | 0.1 | HISS | 6WH LOADOUT |
| Batch 518 (02) | SLD155720TW | 1/14/2014 | RA-226 | pCi/L | -0.12 | 2.05 | HISS | 6WH LOADOUT |
| Batch 518 (02) | SLD155720TW | 1/14/2014 | TH-228 | pCi/L | 0.15 | 0.208 | HISS | 6WH LOADOUT |
| Batch 518 (02) | SLD155720TW | 1/14/2014 | TH-230 | pCi/L | 0.69 | 0.208 | HISS | 6WH LOADOUT |
| Batch 518 (02) | SLD155720TW | 1/14/2014 | TH-232 | pCi/L | 0.15 | 0.208 | HISS | 6WH LOADOUT |
| Batch 518 (02) | SLD155720TW | 1/14/2014 | Total Suspended Solids | mg/L | 32.20 | 5.33 | HISS | 6WH LOADOUT |
| Batch 518 (02) | SLD155720TW | 1/14/2014 | Gross Beta | pCi/L | 59.10 | 11.9 | HISS | 6WH LOADOUT |
| Batch 519 (01) | SLD155721TW | 2/14/2014 | Gross Alpha | pCi/L | -1.28 | 11.60 | HISS | City Property |
| Batch 519 (01) | SLD155721TW | 2/14/2014 | TotalU | pCi/L | -0.53 | 2.45 | HISS | City Property |
| Batch 519 (01) | SLD155721TW | 2/14/2014 | pH | pH units | 11.08 | 0.10 | HISS | City Property |
| Batch 519 (01) | SLD155721TW | 2/14/2014 | RA-226 | pCi/L | 1.12 | 1.64 | HISS | City Property |
| Batch 519 (01) | SLD155721TW | 2/14/2014 | TH-228 | pCi/L | 0.21 | 0.66 | HISS | City Property |
| Batch 519 (01) | SLD155721TW | 2/14/2014 | TH-230 | pCi/L | 2.34 | 0.19 | HISS | City Property |
| Batch 519 (01) | SLD155721TW | 2/14/2014 | TH-232 | pCi/L | -0.04 | 0.42 | HISS | City Property |
| Batch 519 (01) | SLD155721TW | 2/14/2014 | Total Suspended Solids | mg/L | 43.50 | 5.33 | HISS | City Property |
| Batch 519 (01) | SLD155721TW | 2/14/2014 | Gross Beta | pCi/L | 0.96 | 11.94 | HISS | City Property |
| Batch 520 (01) | SLD155722TW | 2/19/2014 | Gross Alpha | pCi/L | 80.33 | 11.60 | HISS | 6WH LOADOUT |
| Batch 520 (01) | SLD155722TW | 2/19/2014 | TotalU | pCi/L | 50.86 | 11.94 | HISS | 6WH LOADOUT |
| Batch 520 (01) | SLD155722TW | 2/19/2014 | pH | pH units | 9.24 | 0.10 | HISS | 6WH LOADOUT |
| Batch 520 (01) | SLD155722TW | 2/19/2014 | RA-226 | pCi/L | 0.71 | 2.19 | HISS | 6WH LOADOUT |
| Batch 520 (01) | SLD155722TW | 2/19/2014 | TH-228 | pCi/L | 0.33 | 0.43 | HISS | 6WH LOADOUT |
| Batch 520 (01) | SLD155722TW | 2/19/2014 | TH-230 | pCi/L | 1.23 | 0.20 | HISS | 6WH LOADOUT |
| Batch 520 (01) | SLD155722TW | 2/19/2014 | TH-232 | pCi/L | 0.20 | 0.20 | HISS | 6WH LOADOUT |
| Batch 520 (01) | SLD155722TW | 2/19/2014 | Total Suspended Solids | mg/L | 37.20 | 5.33 | HISS | 6WH LOADOUT |
| Batch 520 (01) | SLD155722TW | 2/19/2014 | Gross Beta | pCi/L | 59.79 | 11.94 | HISS | 6WH LOADOUT |

**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

May 5, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

**Re: Wastewater User Charge Billing for Special Discharge**

Dear Mr. Shank:

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 8, 2014. That charge was determined using the ethylene glycol concentration in your application for special discharge. The discharge dates and quantities are from information submitted by you in an email dated April 28, 2014.

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 13402. 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 25-26, 2014

**SOURCE OF WASTE:** 40% ethylene glycol solution generated during clean out activities of the north chilled water circulation loop at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri.

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| 4/25-26/14 | Extra-Strength Surcharge | 6,000 | Gal | $0.52 | $3,120.00 |
| **Total:** | ------ | **6,000** | Gal | ----- | **$3,120.00** |

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 - Finance Dept.
Cynthia Chalk - Finance
Laura Joiner – Finance Dept.
Doug Mendoza
Brian Gibson

File: IU, MALLINCKRODT LLC [1011728100], 3600 N. 2nd Street, St. Louis

## Steve Grace

**From:** Shank, Brett <Brett.Shank@mallinckrodt.com>
**Sent:** Monday, April 28, 2014 1:47 PM
**To:** Steve Grace
**Subject:** RE: Mallinckrodt - Discharge of Ethylene Glycol Solution

Start Date was actually 4/25/14.

---

**From:** Shank, Brett
**Sent:** Monday, April 28, 2014 12:30 PM
**To:** Steve Grace (sgrace@stlmsd.com)
**Subject:** Mallinckrodt - Discharge of Ethylene Glycol Solution

Steve:

The following discharge has taken place associated with the April 8, 2014 MSD Permit.

Start Time: 04/15/14 - 1320
End Time: 04/26/14 – 0825
Total Quantity Discharged: 6600 gallons

Please let me know if you need any additional information.

Brett Shank I Environmental Manager
**Mallinckrodt Pharmaceuticals**
3600 North 2nd St. I St. Louis, MO 63147 I USA
T: 314.654.0002 I M: 314.724.4157 I F: 314.654.1251
brett.shank@mallinckrodt.com I www.mallinckrodt.com

This information may be confidential and/or privileged. Use of this information by anyone other than the intended recipient is prohibited. If you receive this in error, please inform the sender and remove any record of this message.

SR
4/21

Mallinckrodt
Pharmaceuticals

April 17, 2014

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

Re: 2014 1st Quarter Self-Monitoring Report
Discharge Permit No. 101-1728-100-1.1
3600 North Second Street, St. Louis, Missouri 63147

Dear Mr. Mendoza,

Please find enclosed the 2014 1st Quarter Self-Monitoring report for the Mallinckrodt LLC St. Louis Plant. The following sample points received no pharmaceutical process water flow during the fourth quarter: SP008, SP080, and SP930.

On February 12, 2014 pH probe 1209-005 (primary) falsely documented Mallinckrodt out of compliance low for ~170 continuous minutes however Mallinckrodt provided documentation to MSD in a February 13, 2014 email from Brett Shank to Tom Boehm of MSD that the pH readings collected from the 1209-007 (backup) probe demonstrate that Mallinckrodt was within the limitations allowed under the ordinance during the time period the 1209-005 was reading incorrectly.

On February 28, 2014 the lift station outfall SP011 overflowed directly to MSD for approximately 18 minutes. This was due to a faulty level sensor resulting in the sump overflowing. During this overflow event the boilerhouse personnel were able to lower the setpoint of the sump level which stopped the overflow event. The level sensor was subsequently repaired.

If you have any questions or require more detailed information, please contact me at 314-654-0002.

Sincerely,

Brett Shank
Environmental Manager

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ENCLOSURES

MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

INDUSTRIAL USER SELF MONITORING REPORT PAGE 2

## 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**.

| | |
|---|---|
| A | NO CHANGE IN WASTEWATER DISCHARGE AT SAMPLE POINTS WITH NO MONITORING REQUIRED |
| | For permit special conditions that waive monitoring at any sample point(s) specified in your permit, you are required to make the following certification for each report in which monitoring is waived:<br>DME I certify, since the last discharge monitoring report, there has been no change in the character of the wastes discharged at sample points **001 and 002**.<br>_____ I certify, since the last discharge monitoring report, there has been no discharge from sample points **008 and 011**.<br>Refer to cover letter describing 02/28/14 event |
| B | NO CHANGE IN WASTEWATER DISCHARGE AT ACTIVE CONNECTIONS WITHOUT SAMPLE POINTS |
| | For permit special conditions that waive monitoring at active connection points which are not specified as sample points in your permit, you are required to make the following certification:<br>DME I certify, since the last discharge monitoring report, there has been no change in the character of wastes discharged at those active connection points which are not specified in my permit. |
| E | NO DISCHARGE OF CATEGORICAL WASTE |
| | For permit special conditions that prohibit discharge of wastes which are subject to certain categorical pretreatment standards, you are required to make the following certification:<br>DME I certify, since the last discharge monitoring report, there has been no discharge of wastes which are subject to pretreatment standards in 40 CFR 414 (except for those wastes conveyed by Sample Point **905**). |
| F | CYANIDE NOT USED OR GENERATED IN 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from limitations and monitoring for Total Cyanide at the Pharmaceutical sample points **080, 915, and 936,** subject to the following certification:<br>DME I certify, since the last discharge monitoring report, cyanide has not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. |
| H | CATEGORICAL POLLUTANTS NOT USED OR GENERATED IN CATEGORICAL OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants at the Pharmaceutical sample points **915 and 936,** subject to the following certification:<br>DME I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, have not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. In addition, the above-referenced report remains valid. |
| I | SURROGATE MONITORING ALLOWED FOR 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants, and replaced by monitoring for surrogate pollutant(s), at the Pharmaceutical sample points **920 and 937** subject to the following certification:<br>DME I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, continue to receive the same degree of treatment as the surrogate pollutant(s). In addition, the above-referenced report remains valid. |

## PART IV: GENERAL CERTIFICATION STATEMENTS

| | |
|---|---|
| B | DISCHARGE MONITORING REPORT CERTIFICATION |
| | **All permittees must sign and complete the information below:**<br>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.<br>Print or type name of signing official: Dexter Evans<br>Title: Senior Site Director Telephone: 314-654-7695<br>Signature: Dexter Evans Date: 17 APR 14 |

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DIVISION OF ENVIRONMENTAL COMPLIANCE



MSD 013388

METROPOLITAN ST LOUIS SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT LLC**

Permit No: 1011728100-1.1

Premise Address: 3600 North Second Street, St. Louis, MO 63147

Reporting Period: ☒ JAN-MAR ☐ APR-JUN ☐ JUL-SEP ☐ OCT-DEC

**PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER SYSTEM**

| RADIONUCLIDE | ACTIVITY DISCHARGED (millicuries) |
|---|---|
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| | |
| | |
| | |
| | |
| | |
| TOTAL ACTIVITY DISCHARGED: | **No activity recorded this period.** |

**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

DME

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 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/type name of signing official: Dexter Evans

Title: Senior Site Director

Telephone: 314-654-7695

Signature: Dexter Evans

Date: 17 Apr 14

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | | 001 | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | | NA | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | | NA | | | | | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | | E | 1,000 | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----> | | **002** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----> | | NA | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated fl | | | | | | | UNITS |
| FLOW | | E | 2,200 | | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | | |

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | | 003 | | 009 | | 099 | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | | 1/14/2014 | | 1/14/2014 | | calculated | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | | 0710, 0810, 0910, 1010 | | 0730, 0830, 0930, 1030 | | n/a | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | M | 72,490 | M | 20,477 | E | 52,013 | gal/day |
| Oil & Grease | 200 | G | 9 | G | 7 | E | 10 | mg/l |
| Biochemical Oxygen Demand | **** | C | 106 | C | 179 | E | 77 | mg/l |
| Chemical Oxygen Demand | **** | C | 371 | C | 670 | E | 253 | mg/l |
| Total Suspended Solids | **** | C | 43 | C | 70 | E | 32 | mg/l |
| Temperature | **** | G | 21.1 | G | 14.4 | E | 17.8 | deg C |
| pH | **** | G | 7.0 | G | 9.5 | E | 7.0 | S.U. |
| Lab Dilution Factor | | | 1 | | 1 | | | |

**** No limits for SP003 or SP009;
monitoring requirement only for calculation at SP099

* Calculated value was less than zero.

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS | | | | -----> | | 003 | | 009 | | 099 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED | | | | -----> | | 1/14/2014 | | 1/14/2014 | | calculated | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | | -----> | | 0710, 0810, 0910, 1010 | | 0730, 0830, 0930, 1030 | | calculated | |
| PARAMETER | | | | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | | | | **** | M | 72,490 | M | 20,477 | | 52,013 | gal/day |
| 1,1,1-Trichloroethane | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| 1,1,2,2-Tetrachloroethane | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| 1,1,2-Trichloroethane | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| 1,1-Dichloroethane | | | | **** | G | 0.004 | G | <0.005 | | 0.004 | mg/l |
| 1,1-Dichloroethene | | | | **** | G | 0.002 | G | <0.005 | | 0.001 | mg/l |
| 1,2-Dichlorobenzene | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| 1,2-Dichloroethane | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| 1,2-Dichloropropane | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| 1,3-Dichlorobenzene | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| 1,4-Dichlorobenzene | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| 2-Chloroethylvinylether | | | | **** | G | <0.020 | G | <0.020 | | 0.020 | mg/l |
| Acrolein | | | | **** | G | <0.100 | G | <0.100 | | 0.100 | mg/l |
| Acrylonitrile | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Benzene | | | | **** | G | <0.002 | G | <0.002 | | 0.002 | mg/l |
| Bromodichloromethane | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Bromoform | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Bromomethane | | | | **** | G | <0.010 | G | <0.010 | | 0.010 | mg/l |
| Carbon Tetrachloride | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Chlorobenzene | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Chloroethane | | | | **** | G | <0.010 | G | <0.010 | | 0.010 | mg/l |
| Chloroform | | | | **** | G | 0.001 | G | 0.001 | | 0.001 | mg/l |
| Chloromethane | | | | **** | G | <0.010 | G | <0.010 | | 0.010 | mg/l |
| cis-1,3-Dicholropropene | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Dibromochloromethane | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Ethylbenzene | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Methylene Chloride | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Tetrachloroethene | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Toluene | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| 1,2-Dichloroethene | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| trans-1,3-Dichloropropene | | | | **** | G | <0.005 | G | <0.005 | | 0.005 | mg/l |
| Trichloroethene | | | | **** | G | 0.012 | G | <0.005 | | 0.015 | mg/l |
| Vinyl Chloride | | | | **** | G | 0.003 | G | <0.002 | | 0.003 | mg/l |
| 1,2,4-Trichlorobenzene | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 2,4,6-Trichlorophenol | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 2,4-Dichlorophenol | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 2,4-Dimethylphenol | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 2,4-Dinitrophenol | | | | **** | G | <0.156 | G | <0.156 | | 0.156 | mg/l |
| 2,4-Dinitrotoluene | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 2,6-Dinitrotoluene | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 2-Chloronapthalene | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 2-Chlorophenol | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 2-Nitrophenol | | | | **** | G | <0.156 | G | <0.156 | | 0.156 | mg/l |
| 3,3-Dichlorobenzidine | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 2-Methyl-4,6-dinitrophenol | | | | **** | G | <0.156 | G | <0.156 | | 0.156 | mg/l |
| 4-Bromophenyl-phenylether | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 4-Chloro-3-methylphenol | | | | **** | G | <0.156 | G | <0.156 | | 0.156 | mg/l |
| 4-Chlorophenyl-phenylether | | | | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 4-Nitrophenol | | | | **** | G | <0.156 | G | <0.156 | | 0.156 | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | | 003 | | 009 | | 099 | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | | 1/14/2014 | | 1/14/2014 | | calculated | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | | 0710, 0810, 0910, 1010 | | 0730, 0830, 0930, 1030 | | calculated | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | **** | M | 72,490 | M | 20,477 | | 52,013 | gal/day |
| Acenapthene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Acenaphthylene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Anthracene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Benzidine | **** | G | <0.312 | G | <0.312 | | 0.312 | mg/l |
| Benzo(a)anthracene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Benzo(a)pyrene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Benzo(b)fluoranthene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Benzo(g,h,i)perylene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Benzo(k)fluoranthene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Bis(2-chloroethoxy)methane | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Bis(2-chloroethyl)ether | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Bis(2-chloroisopropyl)ether | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Bis(2-ethylhexyl)phthalate | **** | G | <0.047 | G | <0.047 | | 0.047 | mg/l |
| Butyl benzyl phthalate | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Chrysene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Dibenzo(a,h)anthracene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Diethyl phthalate | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Dimethyl phthalate | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Di-n-butyl phthalate | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Di-n-octyl-phthalate | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Fluorene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Fluoranthene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Hexachlorobenzene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Hexachlorobutadiene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Hexachlorocyclopentadiene | **** | G | <0.156 | G | <0.156 | | 0.156 | mg/l |
| Hexachloroethane | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Ideno(1,2,3-cd)pyrene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Isophorone | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Naphthalene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Nitrobenzene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| N-nitrosodimethylamine | **** | G | <0.156 | G | <0.156 | | 0.156 | mg/l |
| N-nitrosodi-n-propylamine | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| N-nitrosodiphenylamine | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Pentachlorophenol | **** | G | <0.156 | G | <0.156 | | 0.156 | mg/l |
| Phenanthrene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| Phenol | **** | G | <0.039 | G | <0.039 | | 0.039 | mg/l |
| Pyrene | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| 1,2-Diphenylhydrazine | **** | G | <0.078 | G | <0.078 | | 0.078 | mg/l |
| * If calculated number was negative, it was reported as 0. | | | | | | | | |
| **Total Toxic Organics** | 5.844 | -- | 5.279 | -- | 5.275 | -- | 5.281 | mg/l |
| **** No limits for SP003 or SP009; | | | | | | | | |
| monitoring requirement only for calculation at SP099 | | | | | | | | |
| Lab Dilution Factor | | | 1,10 | | 1, 10 | | | |

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MSD 013394

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **005** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/14/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0720, 0820, 0920, 1020 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | gal/day |
| Oil & Grease | 200 | G | 4 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 18 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 72 | | | | | mg/l |
| Total Suspended Solids | **** | C | 5 | | | | | mg/l |
| Temperature | 60 | G | 14.4 | | | | | deg C |
| pH | 5.5 - 11.5 | G | 5.5 | | | | | S.U. |
| **** No limits for SP005 | | | | | | | | |
| Lab Dilution Factor | | | 1 | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | 005 | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/14/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0720, 0820, 0920, 1020 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | **** | G | <0.005 | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | **** | G | <0.005 | | | | | mg/l |
| 1,1,2-Trichloroethane | **** | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethane | **** | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethene | **** | G | <0.005 | | | | | mg/l |
| 1,2-Dichlorobenzene | **** | G | <0.005 | | | | | mg/l |
| 1,2-Dichloroethane | **** | G | <0.005 | | | | | mg/l |
| 1,2-Dichloropropane | **** | G | <0.005 | | | | | mg/l |
| 1,3-Dichlorobenzene | **** | G | <0.005 | | | | | mg/l |
| 1,4-Dichlorobenzene | **** | G | <0.005 | | | | | mg/l |
| 2-Chloroethylvinylether | **** | G | <0.020 | | | | | mg/l |
| Acrolein | **** | G | <0.100 | | | | | mg/l |
| Acrylonitrile | **** | G | <0.005 | | | | | mg/l |
| Benzene | **** | G | <0.002 | | | | | mg/l |
| Bromodichloromethane | **** | G | <0.005 | | | | | mg/l |
| Bromoform | **** | G | <0.005 | | | | | mg/l |
| Bromomethane | **** | G | <0.010 | | | | | mg/l |
| Carbon Tetrachloride | **** | G | <0.005 | | | | | mg/l |
| Chlorobenzene | **** | G | <0.005 | | | | | mg/l |
| Chloroethane | **** | G | <0.010 | | | | | mg/l |
| Chloroform | **** | G | <0.005 | | | | | mg/l |
| Chloromethane | **** | G | <0.010 | | | | | mg/l |
| cis-1,3-Dicholropropene | **** | G | <0.005 | | | | | mg/l |
| Dibromochloromethane | **** | G | <0.005 | | | | | mg/l |
| Ethylbenzene | **** | G | <0.005 | | | | | mg/l |
| Methylene Chloride | **** | G | <0.005 | | | | | mg/l |
| Tetrachloroethene | **** | G | <0.005 | | | | | mg/l |
| Toluene | **** | G | <0.005 | | | | | mg/l |
| trans-1,2-Dichloroethene | **** | G | <0.005 | | | | | mg/l |
| trans-1,3-Dichloropropene | **** | G | <0.005 | | | | | mg/l |
| Trichloroethene | **** | G | <0.005 | | | | | mg/l |
| Vinyl Chloride | **** | G | <0.002 | | | | | mg/l |
| 1,2,4-Trichlorobenzene | **** | G | <0.078 | | | | | mg/l |
| 2,4,6-Trichlorophenol | **** | G | <0.078 | | | | | mg/l |
| 2,4-Dichlorophenol | **** | G | <0.078 | | | | | mg/l |
| 2,4-Dimethylphenol | **** | G | <0.078 | | | | | mg/l |
| 2,4-Dinitrophenol | **** | G | <0.156 | | | | | mg/l |
| 2,4-Dinitrotoluene | **** | G | <0.078 | | | | | mg/l |
| 2,6-Dinitrotoluene | **** | G | <0.078 | | | | | mg/l |
| 2-Chloronapthalene | **** | G | <0.078 | | | | | mg/l |
| 2-Chlorophenol | **** | G | <0.078 | | | | | mg/l |
| 2-Nitrophenol | **** | G | <0.156 | | | | | mg/l |
| 3,3-Dichlorobenzidine | **** | G | <0.078 | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | **** | G | <0.156 | | | | | mg/l |
| 4-Bromophenyl-phenylether | **** | G | <0.078 | | | | | mg/l |
| 4-Chloro-3-methylphenol | **** | G | <0.156 | | | | | mg/l |
| 4-Chlorophenyl-phenylether | **** | G | <0.078 | | | | | mg/l |
| 4-Nitrophenol | **** | G | <0.156 | | | | | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | 005 | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/14/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0720, 0820, 0920, 1020 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | gal/day |
| Acenapthene | **** | G | <0.078 | | | | | mg/l |
| Acenaphthylene | **** | G | <0.078 | | | | | mg/l |
| Anthracene | **** | G | <0.078 | | | | | mg/l |
| Benzidine | **** | G | <0.312 | | | | | mg/l |
| Benzo(a)anthracene | **** | G | <0.078 | | | | | mg/l |
| Benzo(a)pyrene | **** | G | <0.078 | | | | | mg/l |
| Benzo(b)fluoranthene | **** | G | <0.078 | | | | | mg/l |
| Benzo(g,h,i)perylene | **** | G | <0.078 | | | | | mg/l |
| Benzo(k)fluoranthene | **** | G | <0.078 | | | | | mg/l |
| Bis(2-chloroethoxy)methane | **** | G | <0.078 | | | | | mg/l |
| Bis(2-chloroethyl)ether | **** | G | <0.078 | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | **** | G | <0.078 | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | **** | G | <0.047 | | | | | mg/l |
| Butyl benzyl phthalate | **** | G | <0.078 | | | | | mg/l |
| Chrysene | **** | G | <0.078 | | | | | mg/l |
| Dibenzo(a,h)anthracene | **** | G | <0.078 | | | | | mg/l |
| Diethyl phthalate | **** | G | <0.078 | | | | | mg/l |
| Dimethyl phthalate | **** | G | <0.078 | | | | | mg/l |
| Di-n-butyl phthalate | **** | G | <0.078 | | | | | mg/l |
| Di-n-octyl-phthalate | **** | G | <0.078 | | | | | mg/l |
| Fluoranthene | **** | G | <0.078 | | | | | mg/l |
| Fluorene | **** | G | <0.078 | | | | | mg/l |
| Hexachlorobenzene | **** | G | <0.078 | | | | | mg/l |
| Hexachlorobutadiene | **** | G | <0.078 | | | | | mg/l |
| Hexachlorocyclopentadiene | **** | G | <0.156 | | | | | mg/l |
| Hexachloroethane | **** | G | <0.078 | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | **** | G | <0.078 | | | | | mg/l |
| Isophorone | **** | G | <0.078 | | | | | mg/l |
| Naphthalene | **** | G | <0.078 | | | | | mg/l |
| Nitrobenzene | **** | G | <0.078 | | | | | mg/l |
| N-nitrosodimethylamine | **** | G | <0.156 | | | | | mg/l |
| N-nitrosodi-n-propylamine | **** | G | <0.078 | | | | | mg/l |
| N-nitrosodiphenylamine | **** | G | <0.078 | | | | | mg/l |
| Pentachlorophenol | **** | G | <0.156 | | | | | mg/l |
| Phenanthrene | **** | G | <0.078 | | | | | mg/l |
| Phenol | **** | G | <0.039 | | | | | mg/l |
| Pyrene | **** | G | <0.078 | | | | | mg/l |
| 1,2-Diphenylhydrazine | **** | G | <0.078 | | | | | mg/l |
| | | | | | | | | |
| | | | | | | | | |
| **Total Toxic Organics** | 5.844 | -- | 5.279 | | | | | mg/l |
| **** No limits for individual parameter | | | | | | | | |
| | | | | | | | | |
| Lab Dilution Factor | | | 1,10 | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----> | | **008** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----> | | N/A | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----> | | N/A | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | | | | | | gal/day |
| Oil & Grease | 200 | G | * | | | | | mg/l |
| Biochemical Oxygen Demand | **** | G | * | | | | | mg/l |
| Chemical Oxygen Demand | **** | G | * | | | | | mg/l |
| Temperature | 60 | G | * | | | | | deg C |
| Total Suspended Solids | **** | G | * | | | | | mg/L |
| pH | 5.5 - 11.5 | G | * | | | | | S.U. |
| * No Sample this Quarter | | | | | | | | |
| Lab Dilution Factor | | | N/A | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

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Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

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Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | | 008 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | | NA | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | | NA | | | | | | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated f | | | | | | | UNITS |
| FLOW | | E | * | | | | | | gal/day |
| | | | | | | | | | |
| 1,1,1-Trichloroethane | **** | G | * | | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | **** | G | * | | | | | | mg/l |
| 1,1,2-Trichloroethane | **** | G | * | | | | | | mg/l |
| 1,1-Dichloroethane | **** | G | * | | | | | | mg/l |
| 1,1-Dichloroethene | **** | G | * | | | | | | mg/l |
| 1,2-Dichlorobenzene | **** | G | * | | | | | | mg/l |
| 1,2-Dichloroethane | **** | G | * | | | | | | mg/l |
| 1,2-Dichloropropane | **** | G | * | | | | | | mg/l |
| 1,3-Dichlorobenzene | **** | G | * | | | | | | mg/l |
| 1,4-Dichlorobenzene | **** | G | * | | | | | | mg/l |
| 2-Chloroethylvinylether | **** | G | * | | | | | | mg/l |
| Acrolein | **** | G | * | | | | | | mg/l |
| Acrylonitrile | **** | G | * | | | | | | mg/l |
| Benzene | **** | G | * | | | | | | mg/l |
| Bromodichloromethane | **** | G | * | | | | | | mg/l |
| Bromoform | **** | G | * | | | | | | mg/l |
| Bromomethane | **** | G | * | | | | | | mg/l |
| Carbon Tetrachloride | **** | G | * | | | | | | mg/l |
| Chlorobenzene | **** | G | * | | | | | | mg/l |
| Chloroethane | **** | G | * | | | | | | mg/l |
| Chloroform | **** | G | * | | | | | | mg/l |
| Chloromethane | **** | G | * | | | | | | mg/l |
| cis-1,3-Dicholropropene | **** | G | * | | | | | | mg/l |
| Dibromochloromethane | **** | G | * | | | | | | mg/l |
| Ethylbenzene | **** | G | * | | | | | | mg/l |
| Methylene Chloride | **** | G | * | | | | | | mg/l |
| Tetrachloroethene | **** | G | * | | | | | | mg/l |
| Toluene | **** | G | * | | | | | | mg/l |
| 1,2-Dichloroethene | **** | G | * | | | | | | mg/l |
| trans-1,3-Dichloropropene | **** | G | * | | | | | | mg/l |
| Trichloroethene | **** | G | * | | | | | | mg/l |
| Vinyl Chloride | **** | G | * | | | | | | mg/l |
| 1,2,4-Trichlorobenzene | **** | G | * | | | | | | mg/l |
| 2,4,6-Trichlorophenol | **** | G | * | | | | | | mg/l |
| 2,4-Dichlorophenol | **** | G | * | | | | | | mg/l |
| 2,4-Dimethylphenol | **** | G | * | | | | | | mg/l |
| 2,4-Dinitrophenol | **** | G | * | | | | | | mg/l |
| 2,4-Dinitrotoluene | **** | G | * | | | | | | mg/l |
| 2,6-Dinitrotoluene | **** | G | * | | | | | | mg/l |
| 2-Chloronapthalene | **** | G | * | | | | | | mg/l |
| 2-Chlorophenol | **** | G | * | | | | | | mg/l |
| 2-Nitrophenol | **** | G | * | | | | | | mg/l |
| 3,3-Dichlorobenzidine | **** | G | * | | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | **** | G | * | | | | | | mg/l |
| 4-Bromophenyl-phenylether | **** | G | * | | | | | | mg/l |
| 4-Chloro-3-methylphenol | **** | G | * | | | | | | mg/l |
| 4-Chlorophenyl-phenylether | **** | G | * | | | | | | mg/l |
| 4-Nitrophenol | **** | G | * | | | | | | mg/l |

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MSD 013399

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **008** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | | E | * | | | | | gal/day |
| Acenapthene | **** | G | * | | | | | mg/l |
| Acenaphthylene | **** | G | * | | | | | mg/l |
| Anthracene | **** | G | * | | | | | mg/l |
| Benzidine | **** | G | * | | | | | mg/l |
| Benzo(a)anthracene | **** | G | * | | | | | mg/l |
| Benzo(a)pyrene | **** | G | * | | | | | mg/l |
| Benzo(b)fluoranthene | **** | G | * | | | | | mg/l |
| Benzo(g,h,i)perylene | **** | G | * | | | | | mg/l |
| Benzo(k)fluoranthene | **** | G | * | | | | | mg/l |
| Bis(2-chloroethoxy)methane | **** | G | * | | | | | mg/l |
| Bis(2-chloroethyl)ether | **** | G | * | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | **** | G | * | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | **** | G | * | | | | | mg/l |
| Butyl benzyl phthalate | **** | G | * | | | | | mg/l |
| Chrysene | **** | G | * | | | | | mg/l |
| Dibenzo(a,h)anthracene | **** | G | * | | | | | mg/l |
| Diethyl phthalate | **** | G | * | | | | | mg/l |
| Dimethyl phthalate | **** | G | * | | | | | mg/l |
| Di-n-butyl phthalate | **** | G | * | | | | | mg/l |
| Di-n-octyl-phthalate | **** | G | * | | | | | mg/l |
| Fluorene | **** | G | * | | | | | mg/l |
| Fluoranthene | **** | G | * | | | | | mg/l |
| Hexachlorobenzene | **** | G | * | | | | | mg/l |
| Hexachlorobutadiene | **** | G | * | | | | | mg/l |
| Hexachlorocyclopentadiene | **** | G | * | | | | | mg/l |
| Hexachloroethane | **** | G | * | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | **** | G | * | | | | | mg/l |
| Isophorone | **** | G | * | | | | | mg/l |
| Naphthalene | **** | G | * | | | | | mg/l |
| Nitrobenzene | **** | G | * | | | | | mg/l |
| N-nitrosodimethylamine | **** | G | * | | | | | mg/l |
| N-nitrosodi-n-propylamine | **** | G | * | | | | | mg/l |
| N-nitrosodiphenylamine | **** | G | * | | | | | mg/l |
| Pentachlorophenol | **** | G | * | | | | | mg/l |
| Phenanthrene | **** | G | * | | | | | mg/l |
| Phenol | **** | G | * | | | | | mg/l |
| Pyrene | **** | G | * | | | | | mg/l |
| 1,2-Diphenylhydrazine | **** | G | * | | | | | mg/l |
| | | | | | | | | |
| **Total Toxic Organics** | 5.844 | -- | * | | | | | mg/l |
| **** No limits for individual parameter | | | | | | | | |
| | | | | | | | | |
| Lab Dilution Factor | | | NA | | | | | |

* No Sample this Quarter

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MSD 013400

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **010** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/14/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0750, 0850, 0950, 1050 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated fl | | | | | | UNITS |
| FLOW | | E | 1,142,913 | | | | | gal/day |
| Oil & Grease | 200 | G | <5 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 480 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 1730 | | | | | mg/l |
| Total Suspended Solids | **** | C | 136 | | | | | mg/l |
| Temperature | 60 | G | 21.1 | | | | | deg C |
| pH | 5.5 - 11.5 | G | see attached | | | | | S.U. |
| Chromium | 5.0 | C | 0.014 | | | | | mg/l |
| Copper | 2.7 | C | 0.0144 | | | | | mg/l |
| Nickel | 2.3 | C | 0.0287 | | | | | mg/l |
| Zinc | 3.0 | C | 0.0133 | | | | | mg/l |
| Cyanide | 1.2 | C | <0.007 | | | | | mg/l |
| Shaded values represent detection limits | | | | | | | | |
| Lab Dilution Factor | | | 1, 2,10 | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | 010 | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/14/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0750, 0850, 0950, 1050 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** osite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | 1,142,913 | E | | E | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | **** | G | <0.005 | G | | G | | mg/l |
| 1,1,2,2-Tetrachloroethane | **** | G | <0.005 | G | | G | | mg/l |
| 1,1,2-Trichloroethane | **** | G | <0.005 | G | | G | | mg/l |
| 1,1-Dichloroethane | **** | G | <0.005 | G | | G | | mg/l |
| 1,1-Dichloroethene | **** | G | <0.005 | G | | G | | mg/l |
| 1,2-Dichlorobenzene | **** | G | <0.005 | G | | G | | mg/l |
| 1,2-Dichloroethane | **** | G | <0.005 | G | | G | | mg/l |
| 1,2-Dichloropropane | **** | G | <0.005 | G | | G | | mg/l |
| 1,3-Dichlorobenzene | **** | G | <0.005 | G | | G | | mg/l |
| 1,4-Dichlorobenzene | **** | G | <0.005 | G | | G | | mg/l |
| 2-Chloroethylvinylether | **** | G | <0.020 | G | | G | | mg/l |
| Acrolein | **** | G | <0.100 | G | | G | | mg/l |
| Acrylonitrile | **** | G | <0.005 | G | | G | | mg/l |
| Benzene | **** | G | <0.002 | G | | G | | mg/l |
| Bromodichloromethane | **** | G | <0.005 | G | | G | | mg/l |
| Bromoform | **** | G | <0.005 | G | | G | | mg/l |
| Bromomethane | **** | G | <0.010 | G | | G | | mg/l |
| Carbon Tetrachloride | **** | G | <0.005 | G | | G | | mg/l |
| Chlorobenzene | **** | G | <0.005 | G | | G | | mg/l |
| Chloroethane | **** | G | <0.010 | G | | G | | mg/l |
| Chloroform | **** | G | 0.006 | G | | G | | mg/l |
| Chloromethane | **** | G | <0.010 | G | | G | | mg/l |
| cis-1,3-Dicholropropene | **** | G | <0.005 | G | | G | | mg/l |
| Dibromochloromethane | **** | G | <0.005 | G | | G | | mg/l |
| Ethylbenzene | **** | G | <0.005 | G | | G | | mg/l |
| Methylene Chloride | **** | G | <0.005 | G | | G | | mg/l |
| Tetrachloroethene | **** | G | <0.005 | G | | G | | mg/l |
| Toluene | **** | G | 0.001 | G | | G | | mg/l |
| trans-1,2-Dichloroethene | **** | G | <0.005 | G | | G | | mg/l |
| trans-1,3-Dichloropropene | **** | G | <0.005 | G | | G | | mg/l |
| Trichloroethene | **** | G | <0.005 | G | | G | | mg/l |
| Vinyl Chloride | **** | G | <0.002 | G | | G | | mg/l |
| 1,2,4-Trichlorobenzene | **** | G | <0.039 | G | | G | | mg/l |
| 2,4,6-Trichlorophenol | **** | G | <0.039 | G | | G | | mg/l |
| 2,4-Dichlorophenol | **** | G | <0.039 | G | | G | | mg/l |
| 2,4-Dimethylphenol | **** | G | <0.039 | G | | G | | mg/l |
| 2,4-Dinitrophenol | **** | G | <0.078 | G | | G | | mg/l |
| 2,4-Dinitrotoluene | **** | G | <0.039 | G | | G | | mg/l |
| 2,6-Dinitrotoluene | **** | G | <0.039 | G | | G | | mg/l |
| 2-Chloronapthalene | **** | G | <0.039 | G | | G | | mg/l |
| 2-Chlorophenol | **** | G | <0.039 | G | | G | | mg/l |
| 2-Nitrophenol | **** | G | <0.078 | G | | G | | mg/l |
| 3,3-Dichlorobenzidine | **** | G | <0.039 | G | | G | | mg/l |
| 2-Methyl-4,6-dinitrophenol | **** | G | <0.078 | G | | G | | mg/l |
| 4-Bromophenyl-phenylether | **** | G | <0.039 | G | | G | | mg/l |
| 4-Chloro-3-methylphenol | **** | G | <0.078 | G | | G | | mg/l |
| 4-Chlorophenyl-phenylether | **** | G | <0.039 | G | | G | | mg/l |
| 4-Nitrophenol | **** | G | <0.078 | G | | G | | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | 010 | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/14/2014 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0750, 0850, 0950, 1050 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** osite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | 1,142,913 | E | | E | | gal/day |
| Acenapthene | **** | G | <0.039 | G | | G | | mg/l |
| Acenaphthylene | **** | G | <0.039 | G | | G | | mg/l |
| Anthracene | **** | G | <0.039 | G | | G | | mg/l |
| Benzidine | **** | G | <0.156 | G | | G | | mg/l |
| Benzo(a)anthracene | **** | G | <0.039 | G | | G | | mg/l |
| Benzo(a)pyrene | **** | G | <0.039 | G | | G | | mg/l |
| Benzo(b)fluoranthene | **** | G | <0.039 | G | | G | | mg/l |
| Benzo(g,h,i)perylene | **** | G | <0.039 | G | | G | | mg/l |
| Benzo(k)fluoranthene | **** | G | <0.039 | G | | G | | mg/l |
| Bis(2-chloroethoxy)methane | **** | G | <0.039 | G | | G | | mg/l |
| Bis(2-chloroethyl)ether | **** | G | <0.039 | G | | G | | mg/l |
| Bis(2-chloroisopropyl)ether | **** | G | <0.039 | G | | G | | mg/l |
| Bis(2-ethylhexyl)phthalate | **** | G | <0.023 | G | | G | | mg/l |
| Butyl benzyl phthalate | **** | G | <0.039 | G | | G | | mg/l |
| Chrysene | **** | G | <0.039 | G | | G | | mg/l |
| Dibenzo(a,h)anthracene | **** | G | <0.039 | G | | G | | mg/l |
| Diethyl phthalate | **** | G | <0.039 | G | | G | | mg/l |
| Dimethyl phthalate | **** | G | <0.039 | G | | G | | mg/l |
| Di-n-butyl phthalate | **** | G | <0.039 | G | | G | | mg/l |
| Di-n-octyl-phthalate | **** | G | <0.039 | G | | G | | mg/l |
| Fluoranthene | **** | G | <0.039 | G | | G | | mg/l |
| Fluorene | **** | G | <0.039 | G | | G | | mg/l |
| Hexachlorobenzene | **** | G | <0.039 | G | | G | | mg/l |
| Hexachlorobutadiene | **** | G | <0.039 | G | | G | | mg/l |
| Hexachlorocyclopentadiene | **** | G | <0.078 | G | | G | | mg/l |
| Hexachloroethane | **** | G | <0.039 | G | | G | | mg/l |
| Ideno(1,2,3-cd)pyrene | **** | G | <0.039 | G | | G | | mg/l |
| Isophorone | **** | G | <0.039 | G | | G | | mg/l |
| Naphthalene | **** | G | <0.039 | G | | G | | mg/l |
| Nitrobenzene | **** | G | <0.039 | G | | G | | mg/l |
| N-nitrosodimethylamine | **** | G | <0.078 | G | | G | | mg/l |
| N-nitrosodi-n-propylamine | **** | G | <0.039 | G | | G | | mg/l |
| N-nitrosodiphenylamine | **** | G | <0.039 | G | | G | | mg/l |
| Pentachlorophenol | **** | G | <0.078 | G | | G | | mg/l |
| Phenanthrene | **** | G | <0.039 | G | | G | | mg/l |
| Phenol | **** | G | <0.02 | G | | G | | mg/l |
| Pyrene | **** | G | <0.039 | G | | G | | mg/l |
| 1,2-Diphenylhydrazine | **** | G | <0.039 | G | | G | | mg/l |
| | | | | | | | | |
| | | | | | | | | |
| **Total Toxic Organics** | 5.844 | -- | 2.776 | | | | | mg/l |
| **** No limits for individual parameter | | | | | | | | |
| | | | | | | | | |
| Lab Dilution Factor | | | 1,5 | | | | | |

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Mallinckrodt pH Monitoring for SP010: January 2014

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 1/12/14 9:35 | 5.4 | 5 |
| 1/13/14 10:55 | 4.2 | 5 |
| 1/18/14 6:30 | 5.4 | 5 |
| 1/22/14 12:55 | 4.2 | 5 |
| 1/29/14 14:25 | 4.9 | 5 |
| | **January Total** | 25 |

Mallinckrodt pH Monitoring for SP010: February 2014

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 2/3/14 12:50 | 4.0 | 5 |
| 2/3/14 12:55 | 5.0 | 5 |
| 2/14/14 20:30 | 4.1 | 5 |
| 2/16/14 10:45 | 11.8 | |
| 2/16/14 10:50 | 11.7 | |
| 2/16/14 10:55 | 11.6 | 15 |
| 2/16/14 15:50 | 4.9 | 5 |
| 2/17/14 20:50 | 11.6 | |
| 2/17/14 20:55 | 11.6 | 10 |
| 2/18/14 14:45 | 5.45 | 5 |
| 2/20/14 23:55 | 5.3 | 5 |
| 2/26/14 3:30 | 11.7 | |
| 2/26/14 3:35 | 11.8 | |
| 2/26/14 3:40 | 11.7 | 15 |
| | **February Total** | **70** |

None > 60 MIN

Total = 185 MIN
= 3.1 HRS
< 8 HRS

Mallinckrodt pH Monitoring for SP010: March 2014

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 3/10/14 11:00 | 4.1 | 5 |
| 3/12/14 8:55 | 3.0 | 5 |
| 3/12/14 9:05 | 4.6 | 5 |
| 3/16/14 0:00 | 5.4 | 5 |
| 3/16/14 4:20 | 5.2 | 5 |
| 3/20/14 9:00 | 11.7 | 5 |
| 3/22/14 4:05 | 5.2 | 5 |
| 3/23/14 9:45 | 5.2 | 5 |
| 3/23/14 10:00 | 5.4 | 5 |
| 3/23/14 14:15 | 4.8 | 5 |
| 3/23/14 14:30 | 5.1 | 5 |
| 3/28/14 11:45 | 4.5 | 5 |
| 3/28/14 11:55 | 5.3 | 5 |
| 3/28/14 12:35 | 11.53 | |
| 3/28/14 12:40 | 11.7 | |
| 3/28/14 12:45 | 11.6 | |
| 3/28/14 12:50 | 11.52 | 20 |
| 3/30/14 20:50 | 3.8 | 5 |
| | **March Total:** | **90** |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | N/A | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | N/A | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | | | | | | gal/day |
| Oil & Grease | 200 | G | * | | | | | mg/l |
| Biochemical Oxygen Demand | **** | G | * | | | | | mg/l |
| Chemical Oxygen Demand | **** | G | * | | | | | mg/l |
| Total Suspended Solids | **** | G | * | | | | | mg/l |
| Temperature | 60 | G | * | | | | | deg C |
| pH | 5.5 - 11.5 | G | * | | | | | S.U. |
| * No Flow this Quarter | | | | | | | | |
| Lab Dilution Factor | | | NA | | | | | |

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | | E | * | | | | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | **** | G | * | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | **** | G | * | | | | | mg/l |
| 1,1,2-Trichloroethane | **** | G | * | | | | | mg/l |
| 1,1-Dichloroethane | **** | G | * | | | | | mg/l |
| 1,1-Dichloroethene | **** | G | * | | | | | mg/l |
| 1,2-Dichlorobenzene | **** | G | * | | | | | mg/l |
| 1,2-Dichloroethane | **** | G | * | | | | | mg/l |
| 1,2-Dichloropropane | **** | G | * | | | | | mg/l |
| 1,3-Dichlorobenzene | **** | G | * | | | | | mg/l |
| 1,4-Dichlorobenzene | **** | G | * | | | | | mg/l |
| 2-Chloroethylvinylether | **** | G | * | | | | | mg/l |
| Acrolein | **** | G | * | | | | | mg/l |
| Acrylonitrile | **** | G | * | | | | | mg/l |
| Benzene | **** | G | * | | | | | mg/l |
| Bromodichloromethane | **** | G | * | | | | | mg/l |
| Bromoform | **** | G | * | | | | | mg/l |
| Bromomethane | **** | G | * | | | | | mg/l |
| Carbon Tetrachloride | **** | G | * | | | | | mg/l |
| Chlorobenzene | **** | G | * | | | | | mg/l |
| Chloroethane | **** | G | * | | | | | mg/l |
| Chloroform | **** | G | * | | | | | mg/l |
| Chloromethane | **** | G | * | | | | | mg/l |
| cis-1,3-Dicholropropene | **** | G | * | | | | | mg/l |
| Dibromochloromethane | **** | G | * | | | | | mg/l |
| Ethylbenzene | **** | G | * | | | | | mg/l |
| Methylene Chloride | **** | G | * | | | | | mg/l |
| Tetrachloroethene | **** | G | * | | | | | mg/l |
| Toluene | **** | G | * | | | | | mg/l |
| trans-1,2-Dichloroethene | **** | G | * | | | | | mg/l |
| trans-1,3-Dichloropropene | **** | G | * | | | | | mg/l |
| Trichloroethene | **** | G | * | | | | | mg/l |
| Vinyl Chloride | **** | G | * | | | | | mg/l |
| 1,2,4-Trichlorobenzene | **** | G | * | | | | | mg/l |
| 2,4,6-Trichlorophenol | **** | G | * | | | | | mg/l |
| 2,4-Dichlorophenol | **** | G | * | | | | | mg/l |
| 2,4-Dimethylphenol | **** | G | * | | | | | mg/l |
| 2,4-Dinitrophenol | **** | G | * | | | | | mg/l |
| 2,4-Dinitrotoluene | **** | G | * | | | | | mg/l |
| 2,6-Dinitrotoluene | **** | G | * | | | | | mg/l |
| 2-Chloronapthalene | **** | G | * | | | | | mg/l |
| 2-Chlorophenol | **** | G | * | | | | | mg/l |
| 2-Nitrophenol | **** | G | * | | | | | mg/l |
| 3,3-Dichlorobenzidine | **** | G | * | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | **** | G | * | | | | | mg/l |
| 4-Bromophenyl-phenylether | **** | G | * | | | | | mg/l |
| 4-Chloro-3-methylphenol | **** | G | * | | | | | mg/l |
| 4-Chlorophenyl-phenylether | **** | G | * | | | | | mg/l |
| 4-Nitrophenol | **** | G | * | | | | | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated fl | | | | | | UNITS |
| FLOW | | E | * | | | | | gal/day |
| Acenapthene | **** | G | * | | | | | mg/l |
| Acenaphthylene | **** | G | * | | | | | mg/l |
| Anthracene | **** | G | * | | | | | mg/l |
| Benzidine | **** | G | * | | | | | mg/l |
| Benzo(a)anthracene | **** | G | * | | | | | mg/l |
| Benzo(a)pyrene | **** | G | * | | | | | mg/l |
| Benzo(b)fluoranthene | **** | G | * | | | | | mg/l |
| Benzo(g,h,i)perylene | **** | G | * | | | | | mg/l |
| Benzo(k)fluoranthene | **** | G | * | | | | | mg/l |
| Bis(2-chloroethoxy)methane | **** | G | * | | | | | mg/l |
| Bis(2-chloroethyl)ether | **** | G | * | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | **** | G | * | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | **** | G | * | | | | | mg/l |
| Butyl benzyl phthalate | **** | G | * | | | | | mg/l |
| Chrysene | **** | G | * | | | | | mg/l |
| Dibenzo(a,h)anthracene | **** | G | * | | | | | mg/l |
| Diethyl phthalate | **** | G | * | | | | | mg/l |
| Dimethyl phthalate | **** | G | * | | | | | mg/l |
| Di-n-butyl phthalate | **** | G | * | | | | | mg/l |
| Di-n-octyl-phthalate | **** | G | * | | | | | mg/l |
| Fluoranthene | **** | G | * | | | | | mg/l |
| Fluorene | **** | G | * | | | | | mg/l |
| Hexachlorobenzene | **** | G | * | | | | | mg/l |
| Hexachlorobutadiene | **** | G | * | | | | | mg/l |
| Hexachlorocyclopentadiene | **** | G | * | | | | | mg/l |
| Hexachloroethane | **** | G | * | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | **** | G | * | | | | | mg/l |
| Isophorone | **** | G | * | | | | | mg/l |
| Naphthalene | **** | G | * | | | | | mg/l |
| Nitrobenzene | **** | G | * | | | | | mg/l |
| N-nitrosodimethylamine | **** | G | * | | | | | mg/l |
| N-nitrosodi-n-propylamine | **** | G | * | | | | | mg/l |
| N-nitrosodiphenylamine | **** | G | * | | | | | mg/l |
| Pentachlorophenol | **** | G | * | | | | | mg/l |
| Phenanthrene | **** | G | * | | | | | mg/l |
| Phenol | **** | G | * | | | | | mg/l |
| Pyrene | **** | G | * | | | | | mg/l |
| 1,2-Diphenylhydrazine | **** | G | * | | | | | mg/l |
| **Total Toxic Organics** | 5.844 | -- | * | | | | | mg/l |
| **** No limits for individual parameter | | | | | | | | |
| Lab Dilution Factor | | | N/A | | | | | |

* No Sample this Quarter

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METROPOLITAN ST. LOUIS SEWER DISTRICT
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Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | | **080** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | | NA | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated | | | | | | | UNITS |
| FLOW | | | | E | | * | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| n-Amyl Acetate | 1666 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | | * | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | | * | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | | * | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| Diethyl amine | 1671 | 255.00 | 100.00 | G | | * | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | | * | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | | * | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | | * | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | | * | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | | * | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | | * | | | | | mg/L |
| Triethyl amine | 1671 | 255.00 | 100.00 | G | | * | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | | * | | | | | mg/L |
| | | | | | | | | | | | |
| Oil & Grease | 1664 | 200 | | G | | * | | | | | mg/L |
| Biochemical Oxygen Demand | | **** | | C | | * | | | | | mg/L |
| Chemical Oxygen Demand | | **** | | C | | * | | | | | mg/L |
| Total Suspended Solids | | **** | | C | | * | | | | | mg/L |
| Temperature | | 60 | | G | | * | | | | | deg C |
| pH | | 5.5 - 11.5 | | G | | * | | | | | S.U. |
| *** No flow from SP080 in 1st QTR 2014** | | | | | | | | | | | |
| Dilution by lab | | | | | | NA | | | | | |

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Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **080** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E= | | | | | | UNITS |
| FLOW | | E | * | | | | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | | G | * | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | | G | * | | | | | mg/l |
| 1,1,2-Trichloroethane | | G | * | | | | | mg/l |
| 1,1-Dichloroethane | | G | * | | | | | mg/l |
| 1,1-Dichloroethene | | G | * | | | | | mg/l |
| 1,2-Dichlorobenzene | | G | * | | | | | mg/l |
| 1,2-Dichloroethane | | G | * | | | | | mg/l |
| 1,2-Dichloropropane | | G | * | | | | | mg/l |
| 1,3-Dichlorobenzene | | G | * | | | | | mg/l |
| 1,4-Dichlorobenzene | | G | * | | | | | mg/l |
| 2-Chloroethylvinylether | | G | * | | | | | mg/l |
| Acrolein | | G | * | | | | | mg/l |
| Acrylonitrile | | G | * | | | | | mg/l |
| Benzene | | G | * | | | | | mg/l |
| Bromodichloromethane | | G | * | | | | | mg/l |
| Bromoform | | G | * | | | | | mg/l |
| Bromomethane | | G | * | | | | | mg/l |
| Carbon Tetrachloride | | G | * | | | | | mg/l |
| Chlorobenzene | | G | * | | | | | mg/l |
| Chloroethane | | G | * | | | | | mg/l |
| Chloroform | | G | * | | | | | mg/l |
| Chloromethane | | G | * | | | | | mg/l |
| cis-1,3-Dicholropropene | | G | * | | | | | mg/l |
| Dibromochloromethane | | G | * | | | | | mg/l |
| Ethylbenzene | | G | * | | | | | mg/l |
| Methylene Chloride | | G | * | | | | | mg/l |
| Tetrachloroethene | | G | * | | | | | mg/l |
| Toluene | | G | * | | | | | mg/l |
| trans-1,2-Dichloroethene | | G | * | | | | | mg/l |
| trans-1,3-Dichloropropene | | G | * | | | | | mg/l |
| Trichloroethene | | G | * | | | | | mg/l |
| Vinyl Chloride | | G | * | | | | | mg/l |
| 1,2,4-Trichlorobenzene | | G | * | | | | | mg/l |
| 2,4,6-Trichlorophenol | | G | * | | | | | mg/l |
| 2,4-Dichlorophenol | | G | * | | | | | mg/l |
| 2,4-Dimethylphenol | | G | * | | | | | mg/l |
| 2,4-Dinitrophenol | | G | * | | | | | mg/l |
| 2,4-Dinitrotoluene | | G | * | | | | | mg/l |
| 2,6-Dinitrotoluene | | G | * | | | | | mg/l |
| 2-Chloronapthalene | | G | * | | | | | mg/l |
| 2-Chlorophenol | | G | * | | | | | mg/l |
| 2-Nitrophenol | | G | * | | | | | mg/l |
| 3,3-Dichlorobenzidine | | G | * | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | | G | * | | | | | mg/l |
| 4-Bromophenyl-phenylether | | G | * | | | | | mg/l |
| 4-Chloro-3-methylphenol | | G | * | | | | | mg/l |
| 4-Chlorophenyl-phenylether | | G | * | | | | | mg/l |
| 4-Nitrophenol | | G | * | | | | | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **080** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E= | | | | | | UNITS |
| FLOW | | E | * | | | | | gal/day |
| Acenapthene | | G | * | | | | | mg/l |
| Acenaphthylene | | G | * | | | | | mg/l |
| Anthracene | | G | * | | | | | mg/l |
| Benzidine | | G | * | | | | | mg/l |
| Benzo(a)anthracene | | G | * | | | | | mg/l |
| Benzo(a)pyrene | | G | * | | | | | mg/l |
| Benzo(b)fluoranthene | | G | * | | | | | mg/l |
| Benzo(g,h,i)perylene | | G | * | | | | | mg/l |
| Benzo(k)fluoranthene | | G | * | | | | | mg/l |
| Bis(2-chloroethoxy)methane | | G | * | | | | | mg/l |
| Bis(2-chloroethyl)ether | | G | * | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | | G | * | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | | G | * | | | | | mg/l |
| Butyl benzyl phthalate | | G | * | | | | | mg/l |
| Chrysene | | G | * | | | | | mg/l |
| Dibenzo(a,h)anthracene | | G | * | | | | | mg/l |
| Diethyl phthalate | | G | * | | | | | mg/l |
| Dimethyl phthalate | | G | * | | | | | mg/l |
| Di-n-butyl phthalate | | G | * | | | | | mg/l |
| Di-n-octyl-phthalate | | G | * | | | | | mg/l |
| Fluoranthene | | G | * | | | | | mg/l |
| Fluorene | | G | * | | | | | mg/l |
| Hexachlorobenzene | | G | * | | | | | mg/l |
| Hexachlorobutadiene | | G | * | | | | | mg/l |
| Hexachlorocyclopentadiene | | G | * | | | | | mg/l |
| Hexachloroethane | | G | * | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | | G | * | | | | | mg/l |
| Isophorone | | G | * | | | | | mg/l |
| Naphthalene | | G | * | | | | | mg/l |
| Nitrobenzene | | G | * | | | | | mg/l |
| N-nitrosodimethylamine | | G | * | | | | | mg/l |
| N-nitrosodi-n-propylamine | | G | * | | | | | mg/l |
| N-nitrosodiphenylamine | | G | * | | | | | mg/l |
| Pentachlorophenol | | G | * | | | | | mg/l |
| Phenanthrene | | G | * | | | | | mg/l |
| Phenol | | G | * | | | | | mg/l |
| Pyrene | | G | * | | | | | mg/l |
| 1,2-Diphenylhydrazine | | G | * | | | | | mg/l |
| | | | | | | | | |
| | | | | | | | | |
| **Total Toxic Organics** | 5.844 | -- | * | | | | | mg/l |
| | | | | | | | | |
| *** No flow from SP080 in 1st QTR 2014** | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Lab Dilution Factor | | | NA | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147 _____

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | ----> | | **905** | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | ----> | | 3/6/2014 | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | ----> | | 1300 | | | |
| | MONTHLY LIMIT (ave) | DAILY MAX LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | |
| PARAMETER | (gm/day) | (gm/day) | | | results mg/L | | UNITS |
| FLOW | | | M | 17419 | | | gal/day |
| 1,2,4-Trichlorobenzene | 74 | 301 | G | 6.59 | 0.100 | | gm/day |
| 1,2-Dichlorobenzene | 74 | 301 | G | 0.33 | 0.005 | | gm/day |
| 1,3-Dichlorobenzene | 54 | 144 | G | 0.33 | 0.005 | | gm/day |
| 1,4-Dichlorobenzene | 54 | 144 | G | 0.33 | 0.005 | | gm/day |
| 2-Nitrophenol | 25 | 87 | G | 13.19 | 0.200 | | gm/day |
| 2-Methyl-4,6-dinitrophenol | 30 | 105 | G | 13.19 | 0.200 | | gm/day |
| 4-Nitrophenol | 61 | 218 | G | 13.19 | 0.200 | | gm/day |
| Acenapthene | 7 | 18 | G | 6.59 | 0.100 | | gm/day |
| Anthracene | 7 | 18 | G | 6.59 | 0.100 | | gm/day |
| Bis(2-ethylhexyl)phthalate | 36 | 98 | G | 3.96 | 0.060 | | gm/day |
| Diethyl phthalate | 17 | 43 | G | 6.59 | 0.100 | | gm/day |
| Dimethyl phthalate | 7 | 18 | G | 6.59 | 0.100 | | gm/day |
| Di-n-butyl phthalate | 8 | 16 | G | 6.59 | 0.100 | | gm/day |
| Fluoranthene | 8 | 20 | G | 6.59 | 0.100 | | gm/day |
| Fluorene | 7 | 18 | G | 6.59 | 0.100 | | gm/day |
| Hexachlorobenzene | 74 | 301 | G | 6.59 | 0.100 | | gm/day |
| Hexachlorobutadiene | 54 | 144 | G | 6.59 | 0.100 | | gm/day |
| Hexachloroethane | 74 | 301 | G | 6.59 | 0.100 | | gm/day |
| Naphthalene | 7 | 18 | G | 6.59 | 0.100 | | gm/day |
| Phenanthrene | 7 | 18 | G | 6.59 | 0.100 | | gm/day |
| Pyrene | 8 | 18 | G | 6.59 | 0.100 | | gm/day |
| 1,1,1-Trichloroethane | 8 | 22 | G | 0.33 | 0.005 | | gm/day |
| 1,1,2-Trichloroethane | 12 | 48 | G | 0.33 | 0.005 | | gm/day |
| 1,1-Dichloroethane | 8 | 22 | G | 0.33 | 0.005 | | gm/day |
| 1,1-Dichloroethene | 8 | 23 | G | 0.33 | 0.005 | | gm/day |
| 1,2-Dichloroethane | 74 | 301 | G | 0.33 | 0.005 | | gm/day |
| 1,2-Dichloropropane | 74 | 301 | G | 0.33 | 0.005 | | gm/day |
| Benzene | 22 | 51 | G | 0.13 | 0.002 | | gm/day |
| Carbon Tetrachloride | 54 | 144 | G | 0.33 | 0.005 | | gm/day |
| Chlorobenzene | 54 | 144 | G | 0.33 | 0.005 | | gm/day |
| Chloroethane | 42 | 112 | G | 0.66 | 0.010 | | gm/day |
| Chloroform | 42 | 123 | G | 0.33 | 0.005 | | gm/day |
| Chloromethane | 42 | 112 | G | 0.66 | 0.010 | | gm/day |
| cis-1,3-Dichloropropene | 74 | 301 | G | 0.33 | 0.005 | | gm/day |
| Ethylbenzene | 54 | 144 | G | 0.33 | 0.005 | | gm/day |
| Methylene Chloride | 14 | 64 | G | 0.33 | 0.005 | | gm/day |
| Nitrobenzene | 847 | 2423 | G | 6.59 | 0.100 | | gm/day |
| Tetrachloroethene | 20 | 62 | G | 0.33 | 0.005 | | gm/day |
| Toluene | 11 | 28 | G | 0.33 | 0.005 | | gm/day |
| trans-1,2-Dichloroethene | 9 | 25 | G | 0.33 | 0.005 | | gm/day |
| trans-1,3-Dichloropropene | 74 | 301 | G | 0.33 | 0.005 | | gm/day |
| Trichloroethene | 10 | 26 | G | 0.33 | 0.005 | | gm/day |
| Vinyl Chloride | 37 | 65 | G | 0.13 | 0.002 | | gm/day |
| | | | | | | | |
| | | | | | | | |
| Shaded values represent detection limits | | | | | | | |
| | | | | | | | |
| Lab Dilution Factor | | | | 1,10 | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
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Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | 912 | | 912 | | 912 | | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | 1/13/2014 | | 2/14/2014 | | 3/7/2014 | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | 1250 | | 1045 | | 1245 | | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | | M | 52560 | M | 60656 | M | 45195 | gal/day |
| | | | | | | | | |
| DMAC (daily max) | 7091 | C | 848 | C | 824 | C | 1535 | lb/day |
| DMAC (monthly average) | 5459 | C | 848 | C | 824 | C | 1535 | lb/day |
| | | | | | | | | |
| | | | 1938 | | 1631 | | 34079 | mg/L |
| Lab Dilution Factor | | | 2 | | 2 | | 2 | |

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Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 915 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 1/17/2014 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1400 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <2.5 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.25 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.25 | | | | | | mg/L |
| Chloroform | 524.2 | 0.10 | 0.03 | G | <0.025 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Diethyl amine* | 1671 | 255.00 | 100.00 | G | <100 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.25 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <2.5 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <1 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.05 | | | | | | mg/L |
| Triethyl amine* | 1671 | 255.00 | 100.00 | G | <50 | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.65 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 10, 50 | | | | | | |

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Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 920 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 3/14/2014 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0745 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 13,000 | | | | | | gal/day |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.02 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.005 | | | | | | mg/L |
| Cyanide (total) | 335.4 | 33.50 | 9.40 | | <0.007 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 1 | | | | | | |

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Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 927 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 1/17/2014 | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1200 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | 0.022 | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | | | 930 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | | | NA | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | | | NA | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| * No Flow this Quarter | | | | | | | | | | | |
| Dilution by lab | | | | | NA | | | | | | |

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Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TekLab

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | | | | 933 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | | | | 1/20/2014 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | | | | 2000 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | | E | 100 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | | G | <1 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | | G | <0.1 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | | NA | | | | | | |

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Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **936** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 2/7/2014 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1015 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 16,500 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | <0.02 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Diethyl amine** | 1671 | 255.00 | 100.00 | G | <50 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <1 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Triethyl amine** | 1671 | 255.00 | 100.00 | G | <20 | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.26 | | | | | | mg/L |
| | | | | | | | | | | | |
| *** Chloroform Results** | **Raw Water** | **SP936** | **SP936- Raw Water** | | | | | | | | |
| **2/7/2014** | **0.0132** | **<0.02** | **<0.02** | | | | | | | | |
| | | | | | | | | | | | |
| ***Results above reported as the difference between SP936 and Raw Water*** | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 1, 20 | | | | | | |

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2014 1Q SP9XX PEG.xlsx

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: X (JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 937 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 1/14/2014 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0915 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 23,000 | | | | | | gal/day |
| Tetrahydrofuran | 524.2 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Cyanide (total) | 335.4 | 33.50 | 9.40 | G | <0.007 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 1, 20 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
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Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 938 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 2/4/2014 | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0830 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 71 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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DIVISION OF
ENVIRONMENTAL COMPLI-

**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 17, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Mr. Shank:

We have reviewed your application dated April 4, 2014 requesting approval to discharge 1,500 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This is wash water generated during the clean out of a raw material storage tank containing phosphoric acid at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. Information provided indicated that this wastewater will be discharged through sampling point 010.

Based on the information provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary or combined sewer on site subject to neutralization to a pH level of 5.5 to 11.5. 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 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.**

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, Mallinckrodt 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, MALLINCKRODT INC [1011728100], 3600 N. 2nd St., St. Louis, Missouri

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt LLC  Evaluated by: SMG

Premise Address: 3600 N. 2nd St.  Date: 4/17/14

Send approval letter to applicant

Application Dated: 4/4/14 Received: 4/16/14 All Requested Info. Received: 4/17/14

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: 10117281-01

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 831 Description: wash water generated during the clean out of a raw mat'l. storage tank containing phosphoric acid

Normal WW flow from premise? (N/A) _____ ccf/month, _____ GPD, _____ GPH.

REGULATORY STATUS

Is waste a Hazardous Waste? (N) / Y subject to pH neutralization

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: Mallinckrodt LLC
Premise Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt LLC
Contact Person: Brett Shank
Title: Environmental Manager
Phone: 314.654.0002 Fax: 314.724.4157

**II. APPLICANT (mailing information):**

Applicant Name: Brett Shank
Title: Environmental Manager
Company Name: Mallinckrodt LLC
Mailing Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314.654.0002 Fax: 314.724.4157

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Phosphoric Acid and Water
2. Process/activity generating wastewater: Clean out of raw material storage tank containing residual phosphoric acid and water.
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 |
|---|---|---|
| Phosphoric Acid | 5 | % |
| Water | 95 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 1500 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: pH adjustment at main plant outfall SP010
   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): _____

Plant sewer to main outfall SP010 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):** Brett Shank

**Signature:** _____ **Date:** 04/04/2014

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 1011728100 Sample Point No. 831

# (Material) Safety Data Sheet

## Phosphoric Acid 75%, 80% & 85%

## Section 1 - Product and Company Identification

| | |
|---|---|
| **Material Name** | **Phosphoric Acid 75%, 80% & 85%** |
| **CAS Number** | 7664-38-2 |
| **EINECS** | 231-633-2 |
| **Molecular Formula** | H3PO4 |
| **Product Description** | Colorless viscous liquid with no odor. |
| **Synonyms** | Orthophosphoric Acid; White Phosphoric Acid |
| **Manufacturer** | Innophos<br>PO Box 8000<br>259 Prospect Plains Road Cranbury, NJ 08512-8000<br>United States |
| **Telephone** | |
| **Technical** | 609-495-2495 |
| ***Emergency*** | 800-424-9300 - Chemtrec |
| ***Emergency*** | 615-386-7816 - Innophos Emergency Communication Team (ECT) |
| ***Emergency*** | 703-527-3887 - Chemtrec - International Collect Calls |
| **Preparation Date** | 01/06/2006 |
| **Last Revision Date** | 12/16/2011 |

## Section 2 - Hazards Identification

### Emergency Overview

**DANGER**

Causes severe skin burns and eye damage.

**Prevention** Do not breathe dust, fume, gas, mist, vapours and/or spray. Wear protective gloves, clothing -Full Body Suit, and eye/face protection -Face Shield & Eye Protection. Wash thoroughly after handling.

**Response** IF INHALED: Remove victim to fresh air and keep at rest in a postion comfortable for breathing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

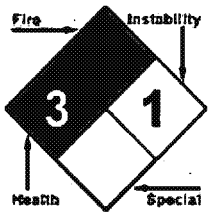
**Storage/Disposal** Store locked up. Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

| | |
|---|---|
| **OSHA** | ▪ Corrosive |
| **WHMIS** | ▪ Class E - Corrosive materials |

| | |
|---|---|
| **EU** | ▪ Corrosive - C<br>R34 |

| | |
|---|---|
| **GHS** | ▪ Skin Corrosion/Irritation - Category 1C, Serious Eye Damage, Eye Irritation - Category 1 |
| **Route Of Entry** | ▪ Inhalation, Skin, Eye, Ingestion |
| **Medical Conditions Aggravated by Exposure** | ▪ Lungs, Skin |

**NFPA:**




**Potential Health Effects**

**Inhalation**

| | |
|---|---|
| **Acute (Immediate)** | ▪ May cause corrosive burns - irreversible damage. |
| **Chronic (Delayed)** | ▪ Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough. |

**Skin**

| | |
|---|---|
| **Acute (Immediate)** | ▪ Causes severe skin burns and eye damage. |
| **Chronic (Delayed)** | ▪ Repeated or prolonged exposure to corrosive materials will cause dermatitis. |

**Eye**

| | |
|---|---|
| **Acute (Immediate)** | ▪ Corrosive. Can cause permanent damage to the cornea, blindness. |
| **Chronic (Delayed)** | ▪ Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis. |

**Ingestion**

| | |
|---|---|
| **Acute (Immediate)** | ▪ Causes corrosion, burns to mouth and esophagus, abdominal pain, chest pain, nausea, vomiting, diarrhea, seizures. Aspiration of the swallowed or vomited product can cause severe pulmonary complications. |
| **Chronic (Delayed)** | ▪ Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal distrubances. |

| | |
|---|---|
| **Carcinogenic Effects** | ▪ This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens. |

## Section 3 - Composition/Information on Ingredients

| Hazardous Components | | | | | | |
|---|---|---|---|---|---|---|
| **Chemical Name** | **CAS** | **%(weight)** | **UN;EINECS** | **LD50/LC50** | **EU Classification & R Phrases** | **Other** |
| Phosphoric acid | 7664-38-2 | 75% TO 85% | UN1805 (liquid), UN3453 (solid), 231-633-2 | Ingestion/Oral-Rat LD50: =1.25 g/kg<br>Inhalation-Rat LC50: =25.5 mg/m³ | C; R34 | NDA |

| Non-HazardousComponents | | | | | | |
|---|---|---|---|---|---|---|
| **Chemical Name** | **CAS** | **%(weight)** | **UN;EINECS** | **LD50/LC50** | **EU Classification & R Phrases** | **Other** |
| Water | 7732-18-5 | 15% TO 25% | 231-791-2 | Ingestion/Oral-Rat LD50: >90 mL/kg | NDA | NDA |

Under United States Regulations (29 CFR 1900.1200 - Hazard Communication Standard), this product is considered hazardous. In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS). This product is considered dangerous according to the European Directive 67/548/EEC. According to the Globally Harmonized Standard for Classification and Labeling (GHS) this product is considered hazardous.

## Section 4 - First Aid Measures

**Inhalation**

- Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing. Move victim to fresh air.

**Skin**

- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Wash skin with soap and water. Remove and isolate contaminated clothing and shoes. Wash contaminated clothing before reuse.

**Eye**

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. Seek immediate medical attention, preferably with an ophthalmologist. If the physician is not immediately available, eye irrigation should be continued for an additional 20 minutes. If it is necessary to transport the patient to a physician and the eye needs to be bandaged, use a dry sterile cloth pad and cover both eyes.

**Ingestion**

- If swallowed give 2-3 glasses of water if victim is conscious and alert. Do not give anything by mouth to an unconscious person. Do NOT induce vomiting. Obtain medical attention immediately if ingested. Do not use mouth-to-mouth method if victim ingested the substance. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Persons attending the victim should avoid direct contact with heavily contaminated clothing and vomitus. Wear impervious gloves while decontaminating skin and hair.

**Notes to Physician**

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

**Other Information**

- Call 911 or emergency medical service. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Keep victim warm and quiet.

## Section 5 - Fire Fighting Measures

**Extinguishing Media**

- Not combustible. Use extinguishing media suitable for surrounding fire.

**Unsuitable Extinguishing Media**

- None known.

**Firefighting Procedures**

- Keep unauthorized personnel away.
  Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Evacuate residents who are downwind of fire. Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

| | |
|---|---|
| **Unusual Fire and Explosion Hazards** | • Not combustible. Under fire conditions, toxic, corrosive fumes are emitted. |
| **Hazardous Combustion Products** | • Oxides of phosphorus.<br>Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. |
| **Protection of Firefighters** | • Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.<br>Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.<br>Wear positive pressure self-contained breathing apparatus (SCBA). |

## Section 6 - Accidental Release Measures

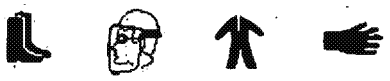
| | |
|---|---|
| **Personal Precautions** | • Ventilate enclosed areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. |
| **Emergency Procedures** | • Keep unauthorized personnel away. Dike spill using absorbent or impervious materials such as earth, sand or clay. Dike or retain dilution water or water from firefighting for later disposal. |
| **Environmental Precautions** | • Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control or dilution water may cause pollution. |
| **Containment/Clean-up Measures** | • Exercise caution during neutralization as considerable heat may be generated. Neutralize spill area with soda ash, sodium bicarbonate or lime. Flush neutralized spill with copious amounts of water. |
| **Prohibited Materials** | • None known. |

## Section 7 - Handling and Storage

| | |
|---|---|
| **Handling** | • Do not get on skin or in eyes. Avoid breathing vapors and mists. Do not ingest. Handle and open container with care. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. This product reacts violently with bases liberating heat and causing spattering. |
| **Storage** | • Store in a cool/low-temperature, well-ventilated, dry place. Store locked up. Keep away from incompatible materials. Ventilate enclosed areas. |
| **Special Packaging Materials** | • No data available |
| **Incompatible Materials or Ignition Sources** | • Fluorine, strong oxidizing agents, strong reducing agents, bases, metals, sulfur trioxide, phosphorus pentoxide. |

## Section 8 - Exposure Controls/Personal Protection

**Personal Protective Equipment**

| | |
|---|---|
| **Pictograms** | •  |
| **Respiratory** | • Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced. |
| **Eye/Face** | • Wear face shield and eye protection. An emergency eye wash must be readily accessible to the work area. |
| **Hands** | • Wear protective gloves selected with regard to both durability as well as permeation resistance. |
| **Skin/Body** | • Wear protective clothing -Full Body Suit |
| **General Industrial Hygiene Considerations** | • Do not get in eyes or on skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Handle in accordance with good industrial hygiene and safety practice. |

**Engineering Measures/Controls**

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

| Exposure Limits/Guidelines | | | | | | |
|---|---|---|---|---|---|---|
| | Result | ACGIH | Argentina | Australia | Canada Ontario | Canada Quebec |
| Phosphoric acid (7664-38-2) | STELs | 3 mg/m3 STEL | 3 mg/m3 STEL | 3 mg/m3 STEL | 3 mg/m3 STEV | 3 mg/m3 STEV |
| | TWAs | 1 mg/m3 TWA | 1 mg/m3 TWA | 1 mg/m3 TWA | 1 mg/m3 TWAEV | 1 mg/m3 TWAEV |

| Exposure Limits/Guidelines (Con't.) | | | | | | |
|---|---|---|---|---|---|---|
| | Result | China | Egypt | Germany DFG | Germany TRGS | India |
| Phosphoric acid (7664-38-2) | STELs | 3 mg/m3 STEL | 3 mg/m3 STEL | Not established | Not established | 3 mg/m3 STEL |
| | TWAs | 1 mg/m3 TWA | Not established | Not established | 2 mg/m3 TWA (inhalable fraction, exposure factor 2) | 1 mg/m3 TWA |
| | Ceilings | Not established | Not established | 4 mg/m3 Peak (inhalable fraction) | Not established | Not established |
| | MAKs | Not established | Not established | 2 mg/m3 MAK (inhalable fraction) | Not established | Not established |

| Exposure Limits/Guidelines (Con't.) | | | | | | |
|---|---|---|---|---|---|---|
| | Result | Indonesia | Japan | Korea | Malaysia | Mexico |
| Phosphoric acid (7664-38-2) | TWAs | 1 mg/m3 NAB | 1 mg/m3 OEL | 1 mg/m3 TWA | 1 mg/m3 TWA | 1 mg/m3 TWA |
| | STELs | Not established | Not established | 3 mg/m3 STEL | Not established | 3 mg/m3 STEL |

| Exposure Limits/Guidelines (Con't.) | | | | | | |
|---|---|---|---|---|---|---|
| | Result | New Zealand | NIOSH | OSHA | OSHA Vacated | Singapore |
| Phosphoric acid (7664-38-2) | STELs | Not established | 3 mg/m3 STEL | Not established | 3 mg/m3 STEL | 3 mg/m3 STEL |
| | TWAs | 1 mg/m3 TWA | 1 mg/m3 TWA | 1 mg/m3 TWA | 1 mg/m3 TWA | 1 mg/m3 PEL |

| Exposure Limits/Guidelines (Con't.) | | | |
|---|---|---|---|
| | Result | South Africa | Switzerland |
| Phosphoric acid (7664-38-2) | MAKs | Not established | 1 mg/m3 MAK |
| | STELs | 3 mg/m3 STEL | 2 mg/m3 STEL |
| | TWAs | 1 mg/m3 TWA | Not established |

## Section 9 - Physical and Chemical Properties

**Physical Form**
- Liquid

**Appearance/Description**
- Colorless viscous liquid with no odor.

| | | | |
|---|---|---|---|
| **Color** : Colorless | | **Odor** : Odorless | |
| **Taste** : NDA | | **Odor Threshold** : NDA | |
| **Boiling Point:** | 275 to 316 F(135 to 157.7778 C) | **Vapor Pressure:** | 2.16 to 5.65 mmHg (torr) @ 20.00 C |
| **Melting Point:** | -17 to -21 C(1.4 to -5.8 F) | **Vapor Density:** | NDA |
| **Specific Gravity:** | > 1.573 | **Evaporation Rate:** | NDA |
| **Density:** | > 13.1267 lbs/gal | **VOC (Wt.):** | NDA |
| **Bulk Density:** | NDA | **VOC (Vol.):** | NDA |
| **Water Solubility:** | Miscible | **Volatiles (Wt.):** | NDA |
| **Solvent Solubility:** | NDA | **Volatiles (Vol.):** | NDA |

| | | | |
|---|---|---|---|
| **Viscosity:** | NDA | **Flash Point:** | NDA |
| **Half-Life:** | NDA | **Flash Point Test Type:** | NDA |
| **Octanol/Water Partition coefficient:** | NDA | **UEL:** | NDA |
| **Coefficient of Water:** | NDA | **LEL:** | NDA |
| **Bioaccumulation Factor:** | NDA | **Autoignition:** | NDA |
| **pH:** | < 1 | | |

## Section 10 - Stability and Reactivity

**Stability**
- Stable

**Hazardous Polymerization**
- Hazardous polymerization will not occur.

**Conditions to Avoid**
- Incompatible materials.

**Incompatible Materials**
- Incompatible Materials: Fluorine, strong oxidizing agents, strong reducing agents, bases, metals, sulfur

**Hazardous Decomposition Products**
- Oxides of phosphorus.

## Section 11 - Toxicological Information

**Other Material Information**
- This material is an acid. The primary effects and toxicity of this material are due to its corrosive nature.

| Phosphoric Acid 75%, 80%, & 85% | | | | 7664-38-2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Test Type** | **Dosage** | **Units** | **Route** | **Species** | **Duration** | **Results** | **Test Class** | **Target Organs** | **Comments** |
| Irritation | 119 | mg/kg | Eye | Rabbit | NDA | NDA | Severe irritation, irreversible, burns (corrosive) | NDA | Data for phosphoric acid |
| Acute Toxicity | 1530 | mg/kg | Ingestion/Oral | Rat | NDA | LD50 | NDA | NDA | Data for phosphoric acid |
| Irritation | 595 | mg/kg | Skin | Rabbit | 24 Hour (s) | NDA | Severe irritation, irreversible, burns (corrosive) | NDA | NDA |
| Acute Toxicity | 2740 | mg/kg | Skin | Rabbit | NDA | LD50 | NDA | NDA | NDA |

| Component Name | Concentration | CAS | Data |
|---|---|---|---|
| Phosphoric acid | 75% TO 85% | 7664-38-2 | **Acute Toxicity:** orl-rat LD50:1.25 gm/kg; ihl-rat LC50:25.5 mg/m3; Inhalation-Rat LC50: =850 mg/m³/1 Hour(s)-Continuous |

**Key to abbreviations**

TC = Toxic Concentration

LD = Lethal Dose

## Section 12 - Ecological Information

| Phosphoric Acid 75%, 80%, & 85% | | | 7664-38-2 | | | |
|---|---|---|---|---|---|---|
| **Dosage** | **Units** | **Species** | **Species Description** | **Duration** | **Results** | **Comments** |
| 138 | mg/L | Fish | Mosquitofish | 96 Hour(s) | LC50 | NDA |

**Ecological Fate**
- No data found for product.

**Persistence/Degradability**
- No data found for product.

**Bioaccumulation Potential**
- No data found for product.

**Mobility in Soil**
- No data found for product.

**Other Information**

- No specific biodegradation test data located. While acidity of this material is readily reduced in natural waters, the resulting phosphate may persist indefinitely or incorporate into biological systems.

## Section 13 - Disposal Considerations

**Product**

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. This material is considered an EPA hazardous waste. EPA "RCRA" Hazardous Waste Code: "C" Corrosive.

**Packaging**

- No data available.

## Section 14 - Transportation Information

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

**DOT - United States - Department of Transportation**

**Shipping Name:** Phosphoric acid solution
**ID Number:** UN1805
**Hazard Class:** 8
**Packing Group:** III
**Passenger aircraft/rail:** 5.00 L
**Cargo aircraft/rail:** 60.00 L

**TDG - Canada - Transport of Dangerous Goods**

**Shipping Name:** PHOSPHORIC ACID, LIQUID
**ID Number:** UN1805
**Hazard Class:** 8
**Labeling Class:** 8
**Packing Group:** III
**Explosive Limit and Limited Quantity Index:** 5.00
**Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index:** 5.00

**IMO/IMDG –International Maritime Transport**

**Shipping Name:** Phosphoric Acid Solution
**ID Number:** 1805
**Hazard Class:** 8
**Labeling Class:** 8

**ADN - Europe Transport of Dangerous Goods by Road/Inland Waterway**

**Shipping Name:** Phosphoric Acid Solution
**ID Number:** 1805
**Hazard Class:** 8
**Labeling Class:** 8

**ADR - Europe Transport of Dangerous Goods by Road/Inland Waterway**

**Shipping Name:** Phosphoric Acid Solution
**ID Number:** 1805
**Hazard Class:** 8
**Labeling Class:** 8

## Section 15 - Regulatory Information

**SARA Hazard Classifications**
- Acute

**Risk & Safety Phrases**
- R34 Causes burns.
  S1 Keep locked up.
  S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
  S27 Take off immediately all contaminated clothing.
  S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

| Inventory | | | | | | |
|---|---|---|---|---|---|---|
| **Component** | **CAS** | **Australia AICS** | **Canada DSL** | **Canada NDSL** | **China** | **EU EINECS** |
| Water | NDA | No | No | No | No | No |
| Phosphoric acid | 7664-38-2 | Yes | Yes | No | Yes | Yes |

| Inventory (Con't.) | | | | | | |
|---|---|---|---|---|---|---|
| **Component** | **CAS** | **EU ELNICS** | **Japan ENCS** | **Korea KECL** | **New Zealand** | **Philippines PICCS** |
| Water | NDA | No | No | No | No | No |
| Phosphoric acid | 7664-38-2 | No | Yes | Yes | Yes | Yes |

| Inventory (Con't.) | | | |
|---|---|---|---|
| **Component** | **CAS** | **Switzerland SWISS** | **TSCA** |
| Water | NDA | No | No |
| Phosphoric acid | 7664-38-2 | No | Yes |

## Australia

### Labor

**Australia - Hazardous Substances - Substances Requiring Health Surveillance**
None Listed

**Australia - High Volume Industrial Chemicals List**
- Phosphoric acid 7664-38-2 75% TO 85%

**Australia - List of Designated Hazardous Substances - Classification**
- Phosphoric acid 7664-38-2 75% TO 85% C R34

**Australia - Major Hazard Facilities - Threshold Quantity (Table 1)**
None Listed

**Australia - Major Hazard Facilities - Threshold Quantity for Materials (Table 2)**
None Listed

**Australia - South Australia - Hazardous Substances Prohibited for Specified Uses**
None Listed

**Australia - South Australia - Hazardous Substances Requiring Health Surveillance**
None Listed

**Australia - Tasmania - Workplace Health and Safety - Hazardous Substances Prohibited for Specific Uses**
None Listed

**Australia - Tasmania - Workplace Health and Safety - Hazardous Substances Requiring Health Surveillance**
None Listed

**Australia - Western Australia - Hazardous Substances Prohibited for Specified Uses**
None Listed

**Australia - Western Australia - Hazardous Substances Requiring Health Surveillance**
None Listed

### Environment

**Australia - National Pollutant Inventory (NPI) Substance List**
- Phosphoric acid 7664-38-2 75% TO 85% 10 tonnes/year Threshold category 1

**Australia - Ozone Protection Act - Scheduled Substances**
None Listed

**Australia - Priority Existing Chemical Program**
None Listed

### Other

**The Australia Group - Export Control List - Chemical Weapons Precursors**
None Listed

## Canada

### Labor

**Canada - List of Prohibited and Restricted Cosmetic Ingredients (The Cosmetic Ingredient Hotlist)**
None Listed

**Canada - WHMIS - Classifications of Substances**
- Phosphoric acid 7664-38-2 75% TO 85% E (including 85% or less)

**Canada - WHMIS - Ingredient Disclosure List**
- Phosphoric acid 7664-38-2 75% TO 85% 1 %

### Environment

**Canada - CEPA - Priority Substances List**
None Listed

## China

### Environment

**China - Ozone Depleting Substances - First Schedule**

None Listed

**China - Ozone Depleting Substances - Second Schedule**

None Listed

**China - Ozone Depleting Substances - Third Schedule**

None Listed

### Other

**China - Annex I & II - Controlled Chemicals Lists**

None Listed

**China - Classification and Labeling of Dangerous Chemical Substances Commonly Used**

- Phosphoric acid 7664-38-2 75% TO 85% Primary Symbol: 16 Primary Class: corrosive Statements: 5.46, 5.99, 5.112

**China - Dangerous Goods List**

- Phosphoric acid 7664-38-2 75% TO 85% UN1805 (solution); UN3453 (solid)

## Croatia

### Environment

**Croatia - Air Quality - Emission Limits for Stationary Sources**

None Listed

**Croatia - Air Quality - Limit Values for Gaseous Pollutants**

None Listed

**Croatia - Air Quality - Recommended Values for Gaseous Pollutants**

None Listed

**Croatia - Ozone Depleting Substances - Annex A, Group I**

None Listed

## Egypt

### Environment

**Egypt - Air Pollutants - Emissions Limits - Overall Particles**

None Listed

**Egypt - Air Pollutants - Maximum Limits**

None Listed

## Europe

### Environment

**EU - Substances Depleting the Ozone layer (1005/2009) - Annex I Substances**

None Listed

### Other

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification**

- Phosphoric acid 7664-38-2 75% TO 85% C; R34

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits**

- Phosphoric acid 7664-38-2 75% TO 85% 25%<=C: C; R34 10%<=C<25%: Xi; R36/38

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling**

- Phosphoric acid 7664-38-2 75% TO 85% C R:34 S:(1/2)-26-45

## India

### Environment

**India - Hazardous Chemical Rules - List of Hazardous and Toxic Chemicals**

- Phosphoric acid 7664-38-2 75% TO 85%

**India - Municipal Waste Regulations - Ambient Air Quality Acceptable Levels**

None Listed

**India - Ozone Depleting Substances - Schedule I**

None Listed

## Indonesia

### Environment

**Indonesia - Hazardous Waste from Non-Specific Sources**

- Phosphoric acid 7664-38-2 75% TO 85% Waste Code: D1006c (Acid/bases)

**Indonesia - Hazardous Waste from Specific Sources**

None Listed

## Japan

### Labor

**Japan - ISHL Dangerous Substances**

None Listed

**Japan - ISHL Designated Carcinogens**

None Listed

**Japan - ISHL Harmful Substances Prohibited for Manufacture**

None Listed

**Japan - ISHL Notifiable Substances**

- Phosphoric acid 7664-38-2 75% TO 85% 1 % weight

### Environment

**Japan - Air Pollution Control Law - Emission Standards for Air Pollutants**

None Listed

**Inventory - Japan - Industrial Safety and Health Law Substances (ISHL)**

None Listed

## Korea

### Labor

**Korea - MOE - Harmful Substances**

None Listed

**Korea - ISHA - Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying**

None Listed

## Malaysia

### Labor

**Malaysia - Control of Industrial Major Accident Hazards - Threshold Quantities**

None Listed

**Malaysia - Occupational Safety & Health - Risk Phrases**

- Phosphoric acid 7664-38-2 75% TO 85% R-34

**Malaysia - Occupational Safety & Health - Safety Phrases**

- Phosphoric acid 7664-38-2 75% TO 85% S-26

**Malaysia - Occupational Safety and Health - Prohibition of Use of Substances**

None Listed

### Environment

**Malaysia - Chlorofluorocarbons (CFCs) Prohibition Order**

None Listed

**Malaysia - Scheduled Wastes**

None Listed

### Other

**Malaysia - Pesticides Act - List of Active Ingredients**

None Listed

## Mexico

**Environment**

**Mexico - Ecological Criteria for Water Quality - Drinking Water Supply Source**
None Listed

**Mexico - Ecological Criteria for Water Quality - Protection of Fresh Water Aquatic Life**
None Listed

**Mexico - Ecological Criteria for Water Quality - Protection of Marine Water Aquatic Life**
None Listed

**Other**

**Mexico - Hazard Classifications**

- Phosphoric acid 7664-38-2 75% TO 85% Class = 8

**Mexico - Regulated Substances**

- Phosphoric acid 7664-38-2 75% TO 85% UN1805 (liquid or solid)

## New Zealand

**Other**

**New Zealand - Ozone Depleting Substances**
None Listed

## Philippines

**Environment**

**Philippines - Air Quality - Long Term Guidelines for Criteria Pollutants**
None Listed

**Philippines - Ozone Depleting Substances - Annex A - Group I**
None Listed

**Other**

**Philippines - Priority Chemical List**
None Listed

## Singapore

**Labor**

**Singapore - Factories Act - Medical Examinations**
None Listed

**Environment**

**Singapore - Air Impurities Emission Limits**
None Listed

**Singapore - Hazardous Substance Transport Quantities**
None Listed

**Singapore - List of Hazardous Substances**

- Phosphoric acid 7664-38-2 75% TO 85% Exclusions: Substances containing not more than 50%, weight in weight, of phosphoric acid

**Singapore - Ozone Depleting Substances - Annex A - Group I**
None Listed

**Other**

**Singapore - Corrosive and Explosive Substances - Corrosive Substances**
None Listed

## South Africa

**Labor**

**South Africa - General Machinery Regulations - Notifiable Substances**
None Listed

## Taiwan

**Environment**

**Taiwan - Effluent Standards - Maximum Effluent Limitations**
None Listed

**Taiwan - Toxic Chemical Substances Control Act - Threshold Regulated Quantities**
None Listed

**Taiwan - Toxic Chemical Substances Control Act - Classification and Control Levels**
None Listed

## Thailand

**Labor**

**Thailand - Air Contaminant Standards**
None Listed

**Environment**

**Thailand - Banned Persistent Organic Pollutants (POPs)**
None Listed

**Other**

**Thailand - Hazardous Substances**

- Phosphoric acid 7664-38-2 75% TO 85% Type 1 Hazardous Substance (concentration >25%)

## United States

**Environment**

**U.S. - CAA (Clean Air Act) - Class I Ozone Depletors**
None Listed

**U.S. - CAA (Clean Air Act) - Class II Ozone Depletors**
None Listed

**U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities**

- Phosphoric acid 7664-38-2 75% TO 85% 5000 lb final RQ; 2270 kg final RQ

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs**
None Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs**
None Listed

**U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents**
None Listed

**U.S. - SDWA (Safe Drinking Water Act) - CCL (Contaminant Candidate List)**
None Listed

## United States - California

**Environment**

**U.S. - California - Proposition 65 - Carcinogens List**
None Listed

**U.S. - California - Proposition 65 - Developmental Toxicity**
None Listed

**U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)**
None Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Female**
None Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Male**
None Listed

## Vietnam

**Environment**

**Vietnam - Air Quality - Ambient Air Quality Standards**
None Listed

**Vietnam - Air Quality - Industrial Emission Standards**

None Listed

**Vietnam - Air Quality - Maximum Allowable Concentration of Highly Hazardous Chemicals**

None Listed

**Other**

**Vietnam - Banned Agrochemicals**

None Listed

## Section 16 - Other Information

| | |
|---|---|
| **Preparation Date** | ▪ 01/06/2006 |
| **Last Revision Date** | ▪ 12/16/2011 |
| **Disclaimer/Statement of Liability** | ▪ The information herein is given in good faith but no warranty, expressed or implied, is made. |

**Key to abbreviations**

NDA = No Data Available

**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 17, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Mr. Shank:

We have reviewed your application dated April 4, 2014 requesting approval to discharge 1,500 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This is wash water generated during the clean out of a raw material storage tank containing potassium hydroxide at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. Information provided indicated that this wastewater will be discharged through sampling point 010.

Based on the information provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary or combined sewer on site subject to neutralization to a pH level of 5.5 to 11.5. 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 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.**

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, Mallinckrodt 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, MALLINCKRODT INC [1011728100], 3600 N. 2nd St., St. Louis, Missouri

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt LLC  Evaluated by: SMG

Premise Address: 3600 N. 2nd St.  Date: 4/17/14

Send approval letter to applicant

Application Dated: 4/4/14 Received: 4/16/14 All Requested Info. Received: 4/17/14

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: 10117281-00

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 831 Description: wash water generated during the clean out of a raw mat'l. storage tank containing KOH

Normal WW flow from premise? (N/A) _____ ccf/month, _____ GPD, _____ GPH.

REGULATORY STATUS

Is waste a Hazardous Waste? (N) / Y subject to pH neutralization

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: Mallinckrodt LLC
Premise Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt LLC
Contact Person: Brett Shank
Title: Environmental Manager
Phone: 314.654.0002 Fax: 314.724.4157

**II. APPLICANT (mailing information):**

Applicant Name: Brett Shank
Title: Environmental Manager
Company Name: Mallinckrodt LLC
Mailing Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314.654.0002 Fax: 314.724.4157

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Potassium Hydroxide and Water
2. Process/activity generating wastewater: Clean out of raw material storage tank containing residual potassium hydroxide and water.
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 |
|---|---|---|
| Potassium Hydroxide | 5 | % |
| Water | 95 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 1500 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: pH adjustment at main plant outfall SP010
   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): _____
Plant sewer to main outfall SP010 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):** Brett Shank

**Signature:** _____ **Date:** 04/04/2014

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 10117281-00 Sample Point No. 831

ERCO Worldwide

POTASSIUM HYDROXIDE SOLUTION
WHMIS CONTROLLED PRODUCT
Date Issued:05/25/2012
Revision #:5

# MATERIAL SAFETY DATA SHEET

## 1. Chemical Product And Company Information

**Chemical Name:** Potassium Hydroxide Solution
**Synonyms/Trade Names:** Caustic Potash Solution, KOH, Potash Lye, Lye, Lye Solution
**Chemical Family:** Alkali metal hydroxide
**Formula:** KOH
**Molecular Weight:** 56.1
**CAS No.:** 1310-58-3
**Uses:** Saponification of fats, manufacture of biodiesel, electrolytee for batteries, manufacture of soft soaps, manufacture of fine chemicals, manufacture of fertilizers and other agricultural chemicals.

**Manufacturer & Supplier:**
ERCO Worldwide, a division of Superior Plus LP
302 The East Mall, Ste. 200
Toronto, Ontario Canada M9B 6C7
(416) 239-7111

ERCO Worldwide (USA) Inc.
101 Highway 73 South
Nekoosa, Wisconsin 54457
(715) 887-4000

**Transportation Emergency Telephone Numbers :**
USA: 1-800-424-9300
CHEMTREC

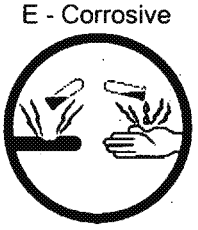
CANADA: (613) 996-6666
CANUTEC

**Emergency Information:**

Call toll-free 24 hours a day:
866-855-6947

**Canadian WHMIS Classification (s):**

E - Corrosive



D1B- Toxic

## 2. Composition / Information On Ingredients

| Name: | Conc. % By Weight | CAS No. |
|---|---|---|
| Potassium Hydroxide | 50% or less | 1310-58-3 |

## 3. Hazard Identification

**Emergency Overview:**
White to light grey, odorless, viscous liquid
DANGER Corrosive. Causes severe burns to skin, eyes and digestive tract.
Harmful if swallowed or inhaled.

**Routes of Entry:**
INHALATION
Breathing of mist is possible. Breathing this material is harmful and can cause death. Harmful effects include burns and permanent damage to the airways, including the nose, throat and lungs.

SKIN
Causes skin burns and permanent skin damage.

EYES
Causes burns and permanent injury to eye tissue. Can cause blindness.

INGESTION
Swallowing this material may be harmful or cause death. Harful effects include burns and permanent damage to the digestive tract, including the mouth, throat, stomach and intestines. Symptoms may include severe abdominal pain and vomiting of blood. Blood loss throughdamaged tissue can lead to low blood pressure and shock.

**Symptoms of Exposure:**
Depending upon level and duration of exposure, other possible signs and symptoms from breathing, swallowing, and contact of this material with the skin may include: irritation of the nose, throat, airways, and lungs with cough, sneezing, perforation of the nasal septum, and blindness.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Preexisting disorders of the following organs or systems which may be aggravated by exposure to this material (or a component) include: respiratory system (includining asthma and other breathing disorders), and eyes.

EFFECTS FOLLOWING REPEATED EXPOSURE
This material may cause the following effects: eye damage, blindness, respiratory tract damage (nose, throat, airways) lung damage, skin damage, and gastrointestinal tract damage.

## 4. First Aid Measures

**Skin:**
Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. Get immediate medical attention. Wash clothing before reuse and throw away shoes which cannot be thoroughly cleaned.

**Eyes:**
Hold the eyelids apart and flush the eye gently with a large amount of water for at least 15 minutes. Get immediate medical attention. Washing eyes within several seconds of contact is necessary.

**Inhalation:**
Remove individual to fresh air and get immediate medical attention. If breathing is difficult, give oxygen. If breathing stops, give artificial respiration.

**Ingestion:**
Have person drink a glass of water immediately if able to swallow. Get medical attention immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN
Probable mucosal damage may contraindicate the use of gastric lavage.

## 5. Fire-Fighting Measures

**Conditions Of Flammability:**
Not combustible, however the product can react with metals such as aluminum, tin, zinc to form flammable and explosive hydrogen gas ( see Reactivity Section 10 )

**Means To Extinguish:**
Potassium hydroxide does not burn or support combustion. Use extinguishing agents compatible with potassium hydroxide and appropriate for the surrounding fire. If water is used, care should be taken, since it can generate heat and cause spattering if applied directly to potassium hydroxide.

DO NOT use carbon dioxide as an extinguishing agent.

**FIRE FIGHTING INSTRUCTIONS**
Evacuate area and fight fire from a safe distance or a protected location. Approach fire from upwind to avoid toxic decomposition products.
Water must be used with extreme caution to extinguish a fire in an area where potassium hydroxide is stored and must not come into contact with the potassium hydroxide.
Potassium hydroxide does not burn and does not support combustion. However, closed containers may rupture violently when exposed to the heat of the fire. If possible, isolate materials not yet involved in the fire and move containers from the fire area if this can be done without risk and they have not been exposed to heat. Use extreme caution since decomposition may occur under fire conditions and heat may rupture containers. If it is not possible to move containers, apply water in flooding quantities from the side and from a safe distance, to keep fire-exposed containers, tanks or car/trailer loads cool and absorb heat to help prevent rupture, and protect personnel. If necessary, use unmanned monitors and hoseholders to keep cooling streams of water on fire-exposed tanks or containers until well after the fire is out. Water spray may also be used to knock down corrosive and toxic fumes and vapours which may be produced in a fire. Fire control or dilution water may be corrosive and/or toxic. Dike fire control water for appropriate disposal.
Withdraw immediately in case of rising sound from venting safety device or any discolouration of tank. ALWAYS stay away from the ends of tanks, but be aware that flying material (shrapnel) from ruptured tanks may travel in any direction. Tanks or drums should not be approached directly after they have been involved in a fire, until they have been completely cooled down.

**Protection of Fire Fighters:**Potassium hydroxide solid and solutions are very corrosive and at high temperatures decomposition occurs giving off strong, corrosive fumes of potassium oxide. Do not enter without wearing specialized equipment suitable for the situation. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. Chemical protective clothing (e.g. chemical splash suit) and positive pressure self-contained breathing apparatus (NIOSH approved or equivalent) may be necessary.

**Hazardous Combustion Products:**
None

| | |
|---|---|
| **Flash Point & Method:** | Not applicable |
| **Upper Flammability Limit:** | Not applicable |
| **Lower Flammability Limit:** | Not applicable |
| **Auto-Ignition Temperature:** | Not applicable |
| **Mechanical Impact Sensitivity:** | Not sensitive |
| **Static Discharge Sensitivity:** | Not applicable |

## 6. Accidental Release Measures

**Leak Or Spill Procedures:**
Cleanup personnel must wear proper protective equipment (refer to Section 8). Completely contain spilled material with dikes, sandbags, etc., and prevent run-off into ground or surface waters or sewers. Recover as much material as possible into containers for disposal. Remaining material may be neutralized with dilute hydrochloric or acetic acid. Neutralization products, both liquid and solid, must be recovered for disposal. Reportable Quantity (RQ) is 1000 lbs. Notify National Response Center (1-(800)-424-8802) of uncontained releases to the environment in excess of the RQ.

**Waste Control Procedures:**
All disposals of this material must be done in accordance with Federal, state and local regulations. Waste characterization and compliance with disposal regulations are the responsibilities of the waste generator.

SPILL RESIDUES
Recovered solids or liquids may be sent to a licensed reclaimer or disposed of in a permitted waste management facility. Consult Federal, state, or local disposal authorities for approved procedures. Do not dump into any sewers, on the ground, or into any body of water.

## 7. Handling Storage

**Handling Procedures And Equipment:**
Do not get in eyes, on skin or on clothing. Avoid breathing mist. Do not taste or swallow. Do not eat, drink, or smoke in work area. Wash hands prior to eating, drinking, or using restroom. Any protective clothing or shoes which become contaminated with caustic potash should be removed immediately and thoroughly laundered before any reuse.

Follow protective controls set forth in Section 8 when handling this product.

When diluting with water, slowly add caustic potash solution to cold water with mixing. Heat will be produced during dilution. Full protective clothing, goggles and faceshield should be worn. Do not add large quantities of water to caustic potash because excessive heat formation will cause boiling and spattering.

**Storage:**
Store in closed, properly labeled tanks or containers. Do not remove or deface labels or tags. Contact of caustic potash cleaning solutions with food and beverage products (in enclosed vessels or spaces) can produce lethal concentrations of carbon monoxide gas. Do not enter confined spaces such as tanks or pits without following proper entry procedures as required by U.S. OSHA 29 CFR 1910.146 or other local regulatory standard.

**INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT**
Aluminum equipment should not be used for storage and/or transfer.

## 8. Exposures Controls / Personal Protection

**Protective Equipment:**

EYE AND FACE PROTECTION

Wear chemical goggles. A face shield should be worn in addition to goggles where splashing or spraying is possible.

SKIN PROTECTION

Wear chemical resistant clothing, boots, and gloves, which are made of neoprene, PVC, or rubber. Always place pants legs over boots.

RESPIRATORY PROTECTION

Where concentrations exceed or are likely to exceed 2 mg/m3 use a NIOSH approved high-efficiency particulate filter with full face piece or self-contained breathing apparatus. Follow any applicable respirator use standards and regulations.

GENERAL

Safety shower and eyewash station must be provided in the immediate work area. Protective equipment and clothing should be selected, used, and maintained according to applicable standards and regulations. For further information, contact the clothing or equipment manufacturer.

**Engineering Controls:**

VENTILATION

As necessary to maintain concentration in air below 2 mg/m3 at all times. To determine the exposure level(s), monitoring should be performed regularly.

## 9. Physical And Chemical Properties

| | |
|---|---|
| **State:** | Viscous liquid |
| **Odour:** | Odorless |
| **Odour Threshold:** | Not applicable |
| **Boiling Point:** | 45% Solution: 270°F (132.2°C)<br>50% Solution: 290°F (143.4°C) |
| **Melting Point:** | |
| **Freezing Point:** | 45% Solution: -20°F (-29°C)<br>50 % Solution: -45°F (-43°C) |
| **pH:** | ≥14 (at high alkali concentration in water pH scale is not applicable) |
| **Coefficient Of Water/Oil Distribution:** | Not available |
| **Appearance:** | Clear to white/light gray |
| **Specific Gravity:** | 45% Solution: 1.457 @ 60/60°F<br>50% Solution: 1.516 @ 60/60°F |
| **Vapour Pressure:** | 45% Solution: 39 mm Hg at 140°F (60°C) 50% Solution: 27 mm Hg at 140°F (60°C) |
| **Vapour Density:** | N/A |
| **Evaporation Rate:** | Not available |
| **Solubility In Water:** | Product is water solution and can be diluted at any ratio |
| **Bulk Density:** | Not applicable |

## 10. Stability And Reactivity

**Chemical Stability:**
Normally stable if kept dry. Rapidly absorbs moisture and carbon dioxide from the air forming potassium carbonate.

**Reactivity Conditions:**
Mixing with water, acid or incompatible materials can cause splattering and release of large amounts of heat (Refer to Section 8). Will react with some metals, such as aluminum, tin and zinc, forming flammable hydrogen gas.

**Incompatible Substances:**
Reacts vigorously or violently with many organic and inorganic chemicals such as: acids, acrolein, acrylonitrile, chlorinated hydrocarbons (e.g. 1,2 dichloroethylene, trichloroethylene), chlorine dioxide, maleic anhydride, nitroethane, nitroparaffins, 2-nitrophenol, nitropropane, phosphorus, potassium persulfate, and tetrahydrofuran (containing peroxides). Will react with aluminum, tin, zinc or sodium borohydride forming hydrogen.

**Corrosivity to Metals:**
Potassium hydroxide is very corrosive to all aluminum alloys at any concentration and any temperature. Potassium hydroxide is corrosive to brass (unspecified) (30-100%solutions), cartridge brass (40-100%), admiralty brass (100% solution), naval brass and yellow brass (all concentrations), bronze (unspecified) (50-100%), aluminum bronze (25%), silicon bronze (25%), tantalum (10-100%) and zinc (all concentrations) at room temperature. Potassium hydroxide solutions of all concentrations are not corrosive at room temperature to stainless steel (e.g. types 301, 303, 304, 305, 316, 347, 17-4PH, 400-series), carbon steel (types 1010 and 1020), ductile cast iron, nickel (types 200 and 201) and nickel-base alloys, Monel 400, Hastelloy C and Hastelloy C-276 and zirconium. Concentrations of 50-100% are not corrosive at room temperature to aluminum bronze and silicon bronze. Concentrations up to 70% are not corrosive at room temperature to Carpenter 20Cb-3, Inconel 600 and copper-nickel 70-30. Concentrations up to 50% are not corrosive at room temperature to Incoloy 800 and 825, copper and titanium.

**Corrosivity to Non-Metals:**
Potassium hydroxide attacks plastics, such as polyethylene terephthalate, polybutylene terephthalate, thermoset polyesters (bisphenol-A fumarate (50-100%), isophthalic acid and general purpose), polyamide-imide (Torlon), polyurethane (riged) and thermoset chlorinated polyester; elastomers, such as styrene-butadiene (SBR), polyacrylate, polyurethane, fluorosilicone, silicone, chlorinated polyethylene and soft rubber; and coatings, such as polyester and vinyls (5-100%) and epoxy (general purpose and chemical resistant epoxy) (50-100%) at room temperature.
Potassium hydroxide does not attack plastics, such as Teflon and other fluorocarbons, like ethylene tetrafluoroethylene (ETFE; Tefzel), ethylene chlorotrifluoroethylene (ECTFE; Halar), chlorotrifluoroethylene (CTFE; Kel-F) and polyvinylidene fluoride (PVDF; Kynar), polyvinylidene chloride (Saran), chlorinated polyvinyl chloride (CPVC), polyvinyl chloride (PVC), polypropylene, nylon 6, nylon 89, nylon 11, nylon 12, acrylonitrile-butadiene-styrene (ABS), styrene-acrylonitrile (SAN), polyetherether ketone (Peek), chlorinated polyether (Penton), thermoset bisphenol-A fumarate polyester (up to 50%), high density polyethylene (HDPE), ultra high molecular weight polyethylene (UHMPE), crosslinked polyethylene (XPE), polyphenylene oxide (Noryl), thermoset vinyl ester, thermoset epoxy and ethylene vinyl acetate elastomers, such as nitrile rubber (NBR; nitrile Buna N), Viton A and other fluorocarbons, like Chemraz, Kalrez and Teflon, ethylene propylene (EP), ethylene propylene diene (EPDM), chloroprene (neoprene); butyl rubber (isobutylene isoprene; IIR), natural rubber, synthetic isoprene, chlorosulfonated polyethylene (Hypalon; CSM), low density polyethylene (LDPE), nylon 11, nylon 12, flexible polyvinyl chloride (PVC) and ethylene vinyl acetate (EVA) (34,37); and coatings, such as coal tar epoxy and epoxy polyamide (5-50%), epoxy (general purpose and chemical resistant) and phenolic (5-27%) at room temperature.

**Hazardous Decomposition Products:**
Will not decompose.

## 11. Toxicological Information

**Skin Contact:** Major potential hazard - contact with the skin can cause severe burns with deep ulcerations. Contact with solution or mist can cause multiple burns with temporary loss of hair at burn site. Solutions may not cause immediate pain or irritation upon skin contact. Prolonged or repeated contact with dilute solutions may cause drying and cracking of skin and possible skin damage.

**Skin Absorption:** It can penetrate to deeper layers of skin and corrosion will continue until removed. The severity of injury depends on the concentration and the duration of exposure.

**Eye Contact:** Major potential hazard – Liquid in the eye can cause severe destruction and blindness. These effects can occur rapidly affecting all parts of the eye. Mist or dust can cause irritation with high concentrations causing destructive burns.

**Inhalation:** By analogy with sodium hydroxide, inhalation of solution mist is expected to cause mild irritation at 2 mg/m3. More severe burns and tissue damage in the upper respiratory tract can occur at higher concentrations. Pneumonitis can result from severe exposures.

**Ingestion:** Ingestion of potassium hydroxide can cause severe burning and pain in lips, mouth, tongue, throat and stomach. Severe scarring of the throat can occur after swallowing. Death can result from ingestion. There is one reported case of of biaural hearing loss (!) after accidental ingestion of potassium hydroxide.

**$LD_{50}$:** there are several different numbers published:
205 mg/kg (rat oral) (1975)
365 mg/kg (rat oral) (1975)
273 mg/kg (male rat oral) (1987)
273 mg/kg (rat oral) (1996)

**$LC_{50}$:** n/a

**Exposure Limits:** PEL TWA (OSHA) 1989 is vacated.
Ceiling Exposure Limit (ACGIH 2005): 2 mg/m³
NIOSH Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 2 mg/m³

**Irritancy:** A study with a 10% solution showed severe tissue damage when applied to skin for 4 hours.

**Sensitization:** Not available

**Carcinogenicity:** One study was identified relative to potassium hydroxide and carcinogenicity. Mice painted with a 3 to 6% aqueous potassium hydroxide solution for 46 weeks developed skin tumors. This study was conducted in 1925 and the adequacy of the test and its design are unknown. No conclusions can be drawn from this study
Potassium hydroxide is not listed on the IARC, OSHA or NTP carcinogen lists.

**Teratogenicity & Mutagenicity:** Not available

**Reproductive Toxicology:** Not available

**Toxicological Synergism:** Not available

## 12. Ecological Information

**Ecological Information:**
No data available

**Biodegradability:**
Not biodegradable (Biodegradability term pertains to an organic material capable of decomposition as a result of attack by microorganisms). However, potassium hydroxide will be neutralized by acidity present in natural environment.

**Aquatic Toxicity:**
May cause shifts in water pH outside the range of pH 5 -10. This change may be toxic to aquatic organisms.
LC50: (24 Hours, static) for fresh water Mosquito Fish: 80.0 mg/L
(24 Hours, static) for Guppy: 165 mg/L

## 13. Disposal Considerations

**Disposal Considerations:**
Consider recycle or re-use where possible. Do not discharge to sewers or any body of water. Disposal must be in compliance with Federal, State/Provincial and local regulations.

## 14. Transportation Information

| Shipping Name (TDGR) | UN Number | Hazard Class | Packing Group |
|---|---|---|---|
| Potassium Hydroxide, Solution | UN 1814 | 8 | II |

## 15. Regulatory Information

**This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR .**

**Safety:**
U S FEDERAL REGULATIONS

**OSHA Hazard Communication Evaluation :**
Meets criteria for hazardous material, as defined by 29 CFR 1910.1200.

CANADA

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) CLASSIFICATION
WHMIS Classifications applicable to this product:

**WHMIS Classification:**
D1B - Poisonous and infectious material - Immediate and serious effects - Toxic
E - Corrosive material

HAZARDOUS PRODUCTS ACT
This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR).

**Environmental:**
U S FEDERAL REGULATIONS
REPORTABLE QUANTITY (RQ)
Reportable Quantity (RQ) is 1000 lbs.

TOXIC SUBSTANCES CONTROL ACT
Listed on TSCA Inventory

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) TITLE III
Components identified with an asterisk (*) in Section 2 are subject to the reporting requirements of Section 313 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA) and 40 CFR Part 372.

CANADA
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)
All components of this product are on the Domestic Substances List (DSL).

**Transportation:**
Refer to Section 14.
ERG Number 154

## 16. Other Information

**NFPA RATINGS**
Health 3, Flammability 0, Instability 1

**Prepared By:**
ERCO Worldwide, A division of Superior Plus LP
Toronto, ON
416-239-7111

**Summary of Changes Made in this Revision :**
Sections " 5. Fire-Fighting Measures", "10. Stability And Reactivity", "11. Toxicological Information" and "12 Ecological Information" were updated.

Information on this form is furnished in compliance with the Regulations Respecting Controlled Products under the Hazardous Products Act and is not to be used for any other purpose, nor is it to be reproduced or published.

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Each recipient should carefully review the information, data and recommendations in the specific context of the intended use.

**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, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Mr. Shank:

We have reviewed your application dated April 4, 2014 requesting approval to discharge 4,000 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is 40% ethylene glycol solution generated during clean out activities of the north chilled water circulation loop of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. We understand that the wastewater will be discharged through sampling point 010.

Based on the information you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a combined sewer on site. **Due to the assumed elevated chemical oxygen demand (COD) concentration, the discharge is limited to 420 gallons per hour. This approval is valid for 30 days from the date of this letter.**

You must be certain the waste is discharged into a 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 COD 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 13402, you will be billed by invoice at the billing rate in effect at the time of discharge. The current rate contained in MSD Ordinance 13402 is $310.07 per ton for COD over 600 mg/L. Using the assumed COD concentration based on the percent of ethylene 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 seven tons of COD over 600 mg/L. (Our quantitative estimate is 6.66 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, Mallinckrodt 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, MALLINCKRODT INC [1011728100]

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt  Evaluated by: SMG

Premise Address: 3600 N. 2nd St.  Date: 4/8/14

Send approval letter to applicant

Application Dated: 4/4/14 Received: 4/4/14 All Requested Info. Received: 4/8/14

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: 10117281-00

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 856 Description: 40% ethylene glycol soln. generated during clean out acts. of N. chilled water circ. loop

Normal WW flow from premise? N/A _____ ccf/month, 2,992,101 GPD, _____ GPH. @SP010

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 = 420 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: 04/08/14
Calculated by: Steve Grace
Source name: MALLINCKRODT LLC [1011728100]
Waste material: ethylene glycol/water generated during clean out of north chilled water circulation loop
Discharge volume: 4,000 gallons

**2 STRENGTH INFORMATION:**

| | | | | |
|---|---|---|---|---|
| Sample BOD = | 0 | mg/l = | 0 | lbs BOD to be discharged |
| Sample COD = | 400,000 | mg/l = | 13344 | lbs COD to be discharged |
| Sample TSS = | 0 | mg/l = | for surcharge calculation only | |

**3 PLANT DATA:** 2014

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** | **9.30** | **7** |
| Coldwater | 0.00 | 0 | 37.74 | 2 |
| Fenton | 0.00 | 0 | 138.36 | 0 |
| Grand Glaize | 0.00 | 0 | 61.11 | 1 |
| Lemay | 0.00 | 0 | 13.89 | 5 |
| Lower Meramec | 0.00 | 0 | 100.61 | 1 |
| Missouri River | 0.00 | 0 | 24.42 | 3 |

**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 = 399400 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: 13402

| | | |
|---|---|---|
| Volume = | $ 2.50 | /CcF |
| BOD = | $ 620.14 | /ton |
| COD = | $ 310.07 | /ton |
| TSS = | $ 231.35 | /ton |

Flow charge = $ - based on volume = 5.3 CcF
BOD surcharge = $ -
COD surcharge = $ 2,066.24
TSS surcharge = $ -
Total discharge charge = $ 2,066.24
**Customer charge = $ 2,066.24** DEC charges special discharge customers for total charges > $20.00
Approximate charge/gallon = $ 0.52

**Comments**

require volume report for billing purposes. Smg

Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

# APPLICATION FOR SPECIAL DISCHARGE APPROVAL

**I. WASTEWATER SOURCE IDENTIFICATION:**

Site Name: Mallinckrodt LLC
Premise Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt LLC
Contact Person: Brett Shank
Title: Environmental Manager
Phone: 314.654.0002 Fax: 314.724.4157

**II. APPLICANT (mailing information):**

Applicant Name: Brett Shank
Title: Environmental Manager
Company Name: Mallinckrodt LLC
Mailing Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314.654.0002 Fax: 314.724.4157

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Ethylene Glycol and Water
2. Process/activity generating wastewater: Clean out of north chilled water circulation loop
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 |
|---|---|---|
| Ethylene Glycol | 40 | % |
| Water | 60 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 4000 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: pH adjustment at main plant outfall SP010
   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): Plant sewer to main outfall SP010 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):** Brett Shank

**Signature:** _____ **Date:** 04/04/2014

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 10117281-00 Sample Point No. 856

**MSDS** Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

# ETHYLENE GLYCOL

## 1. Product Identification

**Synonyms:** 1,2-Ethanediol; glycol; 1,2-Dihydroxyethane; Ethylene Alcohol; Ethulene Dihydrate
**CAS No.:** 107-21-1
**Molecular Weight:** 62.07
**Chemical Formula:** CH2OHCH2OH
**Product Codes:**
J.T. Baker: 5387, 5845, 9140, 9298, 9300, 9346, 9356, L715
Mallinckrodt: 5001, 5037

## 2. Composition/Information on Ingredients

| Ingredient | CAS No | Percent | Hazardous |
|---|---|---|---|
| Ethylene Glycol | 107-21-1 | 99 - 100% | Yes |

## 3. Hazards Identification

**Emergency Overview**

**WARNING! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.**

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate (Life)
Flammability Rating: 1 - Slight
Reactivity Rating: 1 - Slight
Contact Rating: 3 - Severe (Life)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: Green (General Storage)

**Potential Health Effects**

---

**Inhalation:**
Vapor inhalation is generally not a problem unless heated or misted. Exposure to vapors over an extended time period has caused throat irritation and headache. May cause nausea, vomiting, dizziness and drowsiness. Pulmonary edema and central nervous system depression may also develop. When heated or misted, has produced rapid, involuntary eye movement and coma.
**Ingestion:**
Initial symptoms in massive dosage parallel alcohol intoxication, progressing to CNS depression, vomiting, headache, rapid respiratory and heart rate, lowered blood pressure, stupor, collapse, and unconsciousness with convulsions. Death from respiratory arrest or cardiovascular collapse may follow. Lethal dose in humans: 100 ml (3-4 ounces).
**Skin Contact:**
Minor skin irritation and penetration may occur.
**Eye Contact:**
Splashes may cause irritation, pain, eye damage.
**Chronic Exposure:**
Repeated small exposures by any route can cause severe kidney problems. Brain damage may also occur. Skin allergy can develop. May damage the developing fetus.
**Aggravation of Pre-existing Conditions:**
Persons with pre-existing skin disorders, eye problems, or impaired liver, kidney, or respiratory function may be more susceptible to the effects of this substance.

## 4. First Aid Measures

**Inhalation:**
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
**Ingestion:**
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
**Skin Contact:**
Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
**Eye Contact:**
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**Note to Physician:**
Give sodium bicarbonate intravenously to treat acidosis. Urinalysis may show low specific gravity, proteinuria, pyuria, cylindruria, hematuria, calcium oxide, and hippuric acid crystals. Ethanol can be used in antidotal treatment but monitor blood glucose when administering ethanol because it can cause hypoglycemia. Consider infusion of a diuretic such as mannitol to help prevent or control brain edema and hemodialysis to remove ethylene glycol from circulation.

## 5. Fire Fighting Measures

**Fire:**
Flash point: 111C (232F) CC
Autoignition temperature: 398C (748F)
Flammable limits in air % by volume:
lel: 3.2; uel: 15.3
Slight to moderate fire hazard when exposed to heat or flame.

**Explosion:**
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Containers may explode when involved in a fire.
**Fire Extinguishing Media:**
Dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.
**Special Information:**
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Toxic gases and vapors may be released if involved in a fire.

## 6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from acids and oxidizing materials. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**
Ethylene Glycol [107-21-1]:

-ACGIH Short-Term Exposure Limit (STEL):
100 mg/m3 Ceiling (aerosol only)
**Ventilation System:**
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
**Personal Respirators (NIOSH Approved):**
If the exposure limit is exceeded, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type P95 or R95 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH P100 or R100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. Please note that N series filters are not recommended for this material. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
**Skin Protection:**
Wear protective gloves and clean body-covering clothing.
**Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

## 9. Physical and Chemical Properties

**Appearance:**
Clear oily liquid.
**Odor:**
Odorless.
**Solubility:**
Miscible in water.
**Specific Gravity:**
1.1 @20C/4C
**pH:**
No information found.
**% Volatiles by volume @ 21C (70F):**
100
**Boiling Point:**
197.6C (388F)
**Melting Point:**
-13C (9F)
**Vapor Density (Air=1):**
2.14
**Vapor Pressure (mm Hg):**
0.06 @ 20C (68F)
**Evaporation Rate (BuAc=1):**
No information found.

## 10. Stability and Reactivity

**Stability:**
Stable under ordinary conditions of use and storage.
**Hazardous Decomposition Products:**
Carbon dioxide and carbon monoxide may form when heated to decomposition. May produce acrid smoke and irritating fumes when heated to decomposition.
**Hazardous Polymerization:**
Will not occur.
**Incompatibilities:**
Strong oxidizing agents. Reacts violently with chlorosulfonic acid, oleum, sulfuric acid, perchloric acid. Causes ignition at room temperature with chromium trioxide, potassium permanganate and sodium peroxide; causes ignition at 212F(100C) with ammonium dichromate, silver chlorate, sodium chloride and uranyl nitrate.
**Conditions to Avoid:**
Heat, flames, ignition sources, water (absorbs readily) and incompatibles.

## 11. Toxicological Information

**Toxicological Data:**
Oral rat LD50: 4700 mg/kg; skin rabbit LD50: 9530 mg/kg.
Irritation - skin rabbit: 555 mg(open), mild; eye rabbit: 500mg/24H, mild.
Investigated as a tumorigen, mutagen, reproductive effector.
**Reproductive Toxicity:**
Has shown teratogenic effects in laboratory animals.

```
--------\Cancer Lists\-------------------------------------------------------
                                        ---NTP Carcinogen---
```

| Ingredient | Known | Anticipated | IARC Category |
|---|---|---|---|
| Ethylene Glycol (107-21-1) | No | No | None |

## 12. Ecological Information

**Environmental Fate:**
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly. When released into water, this material is expected to readily biodegrade. When released into the water, this material is expected to have a half-life between 1 and 10 days. This material is not expected to significantly bioaccumulate. This material has a log octanol-water partition coefficient of less than 3.0. When released into water, this material is not expected to evaporate significantly. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life between 1 and 10 days.
**Environmental Toxicity:**
The LC50/96-hour values for fish are over 100 mg/l.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

Not regulated.

## 15. Regulatory Information

--------\Chemical Inventory Status - Part 1\--------

| Ingredient | TSCA | EC | Japan | Australia |
|---|---|---|---|---|
| Ethylene Glycol (107-21-1) | Yes | Yes | Yes | Yes |

--------\Chemical Inventory Status - Part 2\--------

| Ingredient | Korea | --Canada-- DSL | NDSL | Phil. |
|---|---|---|---|---|
| Ethylene Glycol (107-21-1) | Yes | Yes | No | Yes |

--------\Federal, State & International Regulations - Part 1\--------

| Ingredient | -SARA 302- RQ | TPQ | ------SARA 313------ List | Chemical Catg. |
|---|---|---|---|---|
| Ethylene Glycol (107-21-1) | No | No | Yes | No |

--------\Federal, State & International Regulations - Part 2\--------

| Ingredient | CERCLA | -RCRA- 261.33 | -TSCA- 8(d) |
|---|---|---|---|
| Ethylene Glycol (107-21-1) | 5000 | No | No |

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Pure / Liquid)

**Australian Hazchem Code:** None allocated.
**Poison Schedule:** None allocated.
**WHMIS:**
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: **1** Flammability: **1** Reactivity: **0**
**Label Hazard Warning:**
WARNING! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.
**Label Precautions:**
Do not breathe vapor or mist.
Use only with adequate ventilation.
Keep container closed.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
**Label First Aid:**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. Call a physician if irritation develops or persists. If swallowed, give water or milk to drink and induce vomiting. Never give anything by mouth to an unconscious person. In all cases call a physician.
**Product Use:**
Laboratory Reagent.
**Revision Information:**
No Changes.
**Disclaimer:**
**********
**Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.**
**********
**Prepared by:** Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

**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 12, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

**Re: Wastewater User Charge Billing for Special Discharge**

Dear Mr. Shank:

This is to advise you of the wastewater user charges applicable to an on-site special discharge approved in our letter to you dated January 17, 2014. That charge was determined using the ethylene glycol concentration in your application for special discharge. The discharge dates and quantities are from information submitted by you in an email dated March 12, 2014.

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 13402. 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:** February 17, 2014

**SOURCE OF WASTE:** 20% ethylene glycol solution from the chiller system in Building 96 at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri.

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| February 17, 2014 | Extra-Strength Surcharge | 200 | Gal | $0.26 | $52.00 |
| **Total:** | ------ | **200** | Gal | ----- | **$52.00** |

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 - Finance Dept.
Cynthia Chalk - Finance
Mary Wimsatt – Finance Dept.
Laura Joiner – Finance Dept.
Doug Mendoza
Brian Gibson

File: IU, MALLINCKRODT LLC [1011728100], 3600 N. 2nd Street, St. Louis

## Steve Grace

**From:** Shank, Brett <Brett.Shank@mallinckrodt.com>
**Sent:** Wednesday, March 12, 2014 7:51 AM
**To:** Steve Grace
**Subject:** Mallinckrodt Sp821 - Discharge of Ethylene Glycol Solution

Steve:

The following discharge has taken place associated with the January 17, 2014 MSD Permit.

Start Time: 02/17/14 – 0730
End Time: 02/17/14 – 0745
Total Quantity Discharged: 200 gallons

Please let me know if you need any additional information.

Thanks,

Brett Shank I Environmental Manager
**Mallinckrodt Pharmaceuticals**
3600 North 2nd St. I St. Louis, MO 63147 I USA
T: 314.654.0002 I M: 314.724.4157 I F: 314.654.1251
brett.shank@mallinckrodt.com I www.mallinckrodt.com

This information may be confidential and/or privileged. Use of this information by anyone other than the intended recipient is prohibited. If you receive this in error, please inform the sender and remove any record of this message.

## Tom Boehm

TB
SR

**From:** Tom Boehm
**Sent:** Friday, March 07, 2014 9:25 AM
**To:** Doug Mendoza; Scott Rehmer; Christopher J. Bulmahn; James Hessel
**Subject:** MALLINCKRODT LLC [1011728100] Chloroform Spill on 03/07/14

Jim Hessel and I both spoke to the person reporting the incident from Mallickrodt, Ed Masehek (see below), who stated the volume of chloroform was contained in a floor sump. It was subsequently collected and staged to be hauled with other wastes.

The reason for the call was their policy to notify regulatory/emergency agencies, including MSD, whenever a spill occurs. They make their notifications as soon as possible, and in this case, before they were completely sure the volume was contained.

No further action taken, except to document the incident via this email, copy to file.

Please call or write with any questions or comments.

Tom Boehm | Metropolitan St. Louis Sewer District | Engineering/Environmental Compliance | p. 314.436.8719 | f. 314.436.8753

---

**From:** Doug Mendoza
**Sent:** Friday, March 07, 2014 9:01 AM
**To:** Tom Boehm
**Subject:** FW: Spill

---

**From:** James Hessel
**Sent:** Friday, March 07, 2014 7:49 AM
**To:** Doug Mendoza
**Subject:** FW: Spill

FYI

I have a call in for Ed Masehek to call me back but I haven't heard from him yet.

Jim Hessel
Industrial Waste Investigator
Division of Environmental Compliance

Metropolitan St. Louis Sewer District

10 E. Grand Ave.
St. Louis, MO 63147

Phone: 314-436-8783
Cell: 314-267-3403
Fax: 314-436-8766
Email: jhessel@stlmsd.com

---

**From:** Luciana Bowens
**Sent:** Friday, March 07, 2014 6:52 AM
**To:** James Hessel
**Subject:** Spill

James:

Here is the information regarding the spill:

18 gal Chloroform spill at Mallinckrodt. Spilled on floor in building and some went in sump.
Contact person is Ed Masehek at 314-486-2963.

Sincerely,
Luciana

## Doug Mendoza

**From:** Doug Mendoza
**Sent:** Wednesday, March 05, 2014 9:38 AM
**To:** 'McAllister, Bill'
**Subject:** RE: REMINDER-MWEA Pretreatment Award Nominations
**Attachments:** MSD St. Louis MWEA Industrial Pretreatment Awardee Nominations.xls

Bill,

Here is MSD's list of nominees for Industrial Pretreatment Awards for 2013. I have included email addresses where we had them.

Type of award (silver, gold, platinum) are listed for each company. Note that platinum would also receive a gold award, of course. For the other gold awardees, I listed the number of years in a row that they have received the gold award. If you find discrepancies, please let me know.

Also please let me know if you need anything else.
---Doug Mendoza

| Award / Why Not | Account # | Industry Name | Premise Address |
|---|---|---|---|
| GOLD 3 | 1007473400 | A SQUARE SYSTEMS | 11923 Borman Drive |
| SILVER | 1007538700 | AIR PRODUCTS PRISM MEMBRANES | 11444 Lackland Road |
| SILVER | 1016212000 | ALSCO INC | 315 Lynch St. |
| GOLD 4 | 1020644700 | AMERICAN PLATING CO | 3527 Park Ave. |
| GOLD 4 | 1045097000 | AMERICAN RIVER TRANSPORTATION COI | 4528 S. Broadway |
| SILVER | 1016343500 | AMERICOLD | 8501 Page Blvd |
| SILVER | 1016242300 | ANHEUSER-BUSCH LLC | One Busch Place |
| GOLD 1 | 1016199000 | ARCHWAY ANODIZING | 2120 Miami St. |
| GOLD 2 | 7777703701 | ARNOLD DEFENSE & ELECTRONICS LLC | 3000 Arnold Tenbrook Road |
| GOLD 2 | 1011810500 | ASSOCIATED EQUIPMENT CORP | 5043 Farlin Ave. |
| GOLD 1 | 1044961400 | BAUSCH & LOMB INC | 499 Sovereign Court |
| GOLD 3 | 1044826000 | BELTSERVICE CORP | 4143 Rider Trail North |
| GOLD 2 | 1053946900 | BITRODE CORPORATION | 9787 Green Park Industrial Drive |
| PLATINUM | 1020792600 | BODINE ALUMINUM INC | 2100 Walton Road |
| GOLD 3 | 1036497600 | BOEING COMPANY | Lambert Field |
| SILVER | 7777703901 | BROWNING ARMS COMPANY | 3005 Arnold-Tenbrook Road |
| GOLD 2 | 1016064600 | CARE-TECH LABORATORIES INC | 3224 S. Kingshighway Blvd. |
| GOLD 2 | 1047349900 | CAREFUSION | 5 Sunnen Dr. |
| SILVER | 1030868200 | CARR LANE MANUFACTURING CO | 4200 Carr Lane Court |
| SILVER | 1044467700 | CINTAS CORP | 6200 Olive Boulevard |
| SILVER | 1011839100 | COMMERCIAL PLATING COMPANY | 9100 Riverview Dr |
| SILVER | 1024459600 | CONAGRA FOODS - DAVID & SONS | 8064 Chivvis Drive |
| GOLD 1 | 1037797500 | COOPER BUSSMANN INC | 114 Old State Road |
| GOLD 2 | 1008631000 | CUSTOM FABRICATION & COATINGS | 7955 Manchester Road, Suite 410 |
| GOLD 1 | 1011829100 | DIAL CORPORATION | 6901 McKissock Ave |
| GOLD 4 | 1016147800 | DYNACRAFT INC | 5000 Connecticut |
| PLATINUM | 1020585200 | ELEMENTIS SPECIALTIES INC | 5548 Manchester Avenue |
| GOLD 4 | 1047270800 | ENVIROPAK CORPORATION | 4135 Galley Ct. |
| GOLD 1 | 1003808800 | ENVIROPAK CORPORATION | 4203 Shoreline Ct. |
| GOLD 1 | 1024458900 | ESSEX INDUSTRIES | 8007 Chivvis Dr |
| GOLD 3 | 1008724100 | ESSEX MANUFACTURING DIVISION | 6 Sunnen Drive |
| GOLD 1 | 1020545001 | FAIRWAY HOLDINGS INC | 1120 Montrose Ave |
| GOLD 1 | 1045528901 | FAULTLESS HEALTHCARE LINEN SERVICE | 1615 N. 25th St. |
| SILVER | 1020703500 | FAULTLESS HEALTH CARE LINEN SERVIC | 2030 S. Broadway |
| GOLD 3 | 7777710900 | FLEXIBLE CUTTING SYSTEMS | 4725A Green Park Road |
| GOLD 3 | 1038391300 | GALLUS BIOPHARMACEUTICALS LLC | 4751 & 4777 LeBourget Drive/ 4766 LaGuardia |
| GOLD 2 | 1015973500 | GMP METAL PRODUCTS | 3850/3883 Delor St |
| SILVER | 1011730300 | HERMANN OAK LEATHER CO | 4050 N. 1st St. |
| GOLD 1 | 1003798900 | HUSSMANN CORP | 12999 St. Charles Rock Rd. |
| GOLD 1 | 1007548100 | HY-C COMPANY INC | 10950 Linpage Pl. |
| SILVER | 1038062000 | ICE CREAM SPECIALTIES INC | 8419 Hanley Industrial Dr |
| GOLD 2 | 1015950000 | ICL PERFORMANCE PRODUCTS LP | 8201 Idaho Avenue |
| GOLD 1 | 1024531800 | INTELLIGRATED SYSTEMS | 9301 Olive Blvd. |
| SILVER | 1020549900 | INTERCON CHEMICAL COMPANY | 1100-1140 Central Industrial Drive |
| GOLD 1 | 1047157100 | JOST CHEMICAL CO | 8110 - 8150 Lackland |
| GOLD 1 | 1044763300 | KATALYST SURGICAL LLC | 754 Goddard Ave. |
| SILVER | 1046164300 | KERRY AMERICAS INC | 8021-8155 New Hampshire |
| GOLD 1 | 1011727700 | KIESEL COMPANY | 1 Branch Street |
| PLATINUM | 1030650700 | KILLARK ELECTRIC MFG CO | 3940 Martin Luther King Dr. |
| PLATINUM | 1045110500 | LAIRD TECHNOLOGIES | 3481 Rider Trail South |
| SILVER | 1036503400 | LAMBERT-ST LOUIS INTERNATIONAL AIRF | 10701 Lambert International Blvd. |
| GOLD 3 | 1008672500 | LEE BIOSOLUTIONS INC | 2924 Mary Ave. |
| GOLD 3 | 7777705001 | LMC INDUSTRIES | 100-110 Manufacturers Dr. |
| GOLD 1 | 1036875101 | LONG PHARMACEUTICALS LLC | 1733 Gilsinn Lane |
| GOLD 4 | 1012070200 | LOUISA FOOD PRODUCTS INC | 1918 Switzer |
| SILVER | 1024322300 | MADISON FARMS BUTTER COMPANY | 4112 Papin |
| SILVER | 1011728100 | MALLINCKRODT LLC | 3600 N 2nd St |
| GOLD 3 | 1048568800 | MALLINCKRODT LLC | 385 Marshall Ave. |
| GOLD 1 | 1007784500 | MALLINCKRODT LLC | 675 McDonnell Blvd |
| GOLD 3 | 1040996400 | MARK ANDY INC | 18081 Chesterfield Airport Road |
| GOLD 2 | 1008643100 | MERIDIAN MEDICAL TECHNOLOGIES | 2555 Hermelin Dr. |

✓ DN
YCB –
SR ✓

## Tom Boehm

**From:** Shank, Brett <Brett.Shank@mallinckrodt.com>
**Sent:** Thursday, February 13, 2014 9:12 AM
**To:** Tom Boehm
**Subject:** Mallinckrodt SP010 Outfall pH Discussion
**Attachments:** OUTFALL PH data 02 12 14.xlsx

Mallinckrodt LLC
3600 N. 2nd
(1011 728100)

Tom:

Per my voicemail yesterday.

In our case early this morning at 12:19 am, the pH probe (1209-005) alarmed low (4.7 s.u.) and the backup probe (1209-007) read high 10.7 s.u. As a result of reading low the boilerhouse personnel field verified with a hand held pH meter that 1209-005 was incorrect and falsely reading low while the readings from 1209-007 were consistent with the handheld. Based on discussions between the boilerhouse and EHS on-call it was decided that as long as this backup probe was being continuously monitored (and within the pH range as defined above) it was OK to temporarily operate in this manner until repairs were performed. Maintenance was able to replace the probe and wiring however the 1209-005 system falsely documents us out of compliance low for ~ 170 continuous minutes until the required repairs were performed.

Attached is a graph of the two sets of information collected by our data historian for both the 1209-005 and 1209-007 pH probes (one minute intervals). As demonstrated in the attached graph the pH readings collected from the 1209-007 probe demonstrate that we were within the limitations allowed under the ordinance during the time period that the 1209-005 probe was reading incorrectly and as a result we do not believe we have a compliance issue.

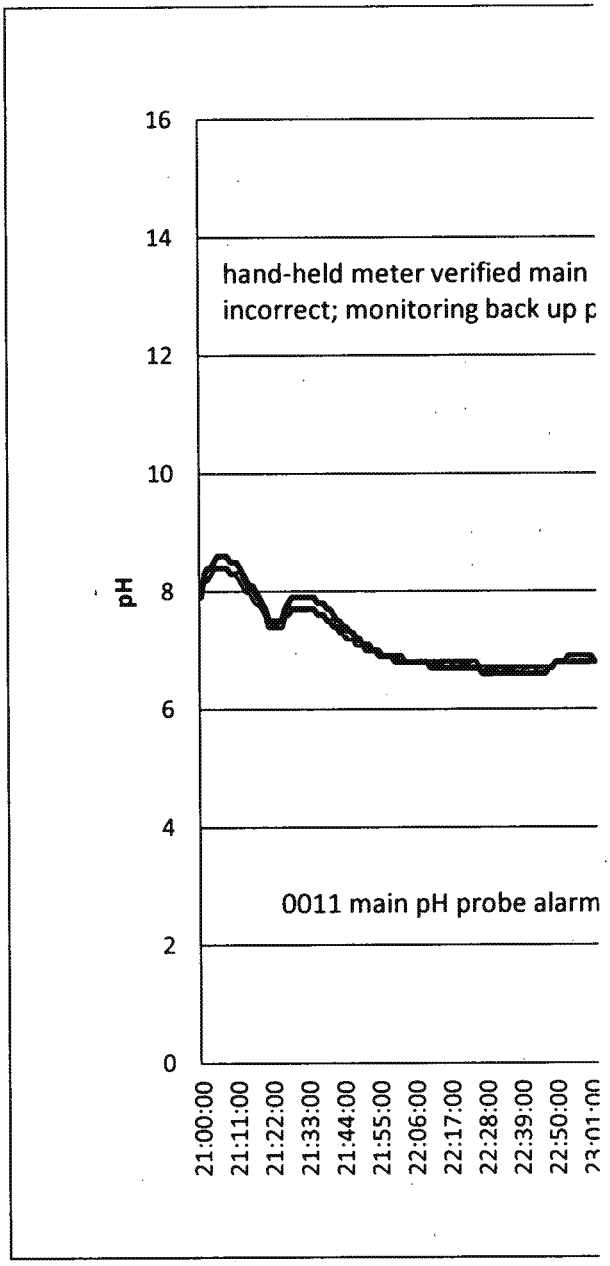
Please let me know if you have any questions.

Brett Shank I Environmental Manager
**Mallinckrodt Pharmaceuticals**
3600 North 2nd St. I St. Louis, MO 63147 I USA
T: 314.654.0002 I M: 314.724.4157 I F: 314.654.1251
brett.shank@mallinckrodt.com I www.mallinckrodt.com

This information may be confidential and/or privileged. Use of this information by anyone other than the intended recipient is prohibited. If you receive this in error, please inform the sender and remove any record of this message.

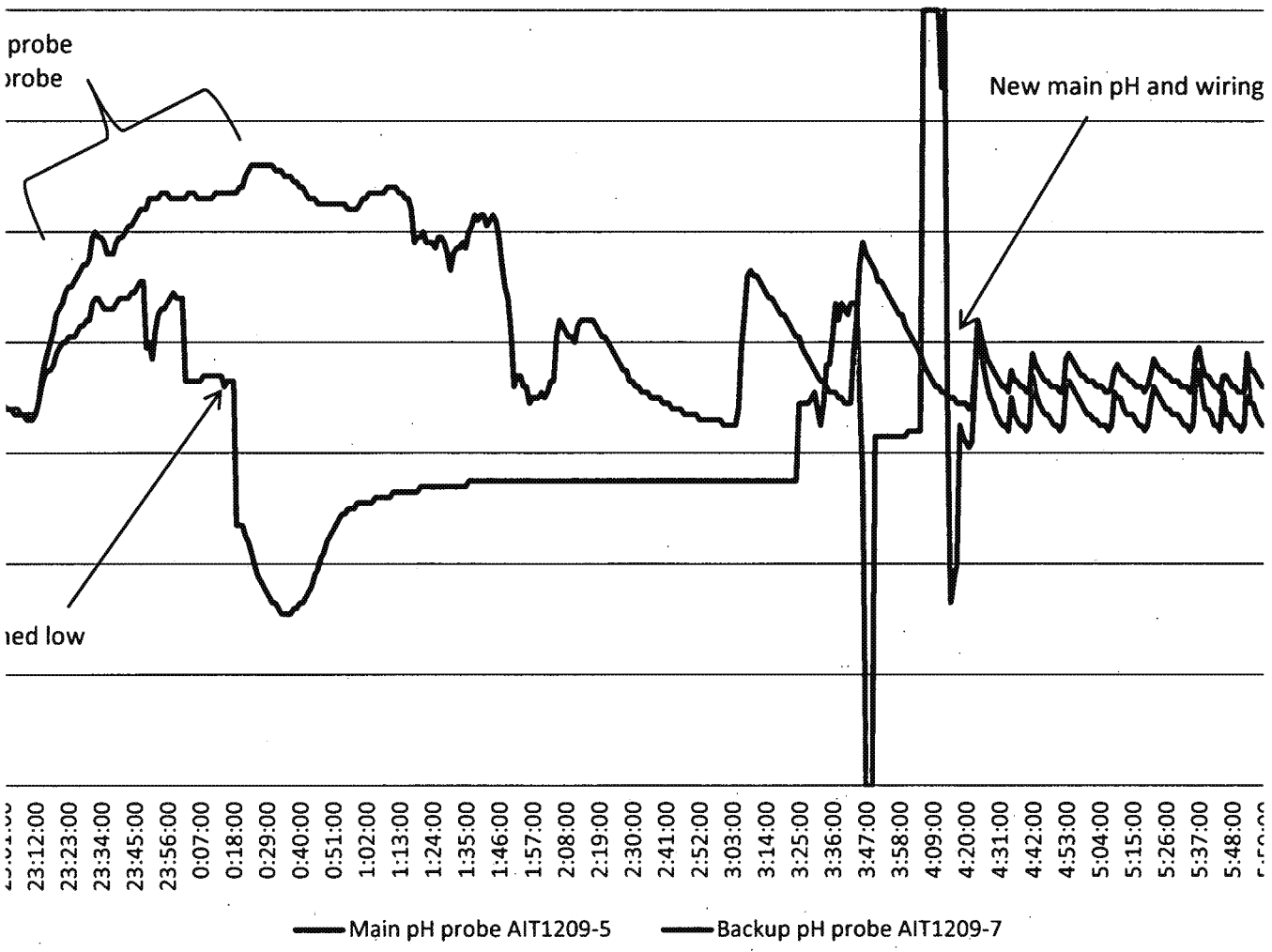
2/18/14 ~ 1:15 p
- called + left voicemail for Brett to reference this on cover letter for 1st 1/4 '14 SMR

| | $Time | Main pH probe AIT1209-5 | Backup pH probe AIT1209-7 |
|---|---|---|---|
| 2/11/2014 | 21:00:00 | 8 | 7.9 |
| 2/11/2014 | 21:01:00 | 8.2 | 8.3 |
| 2/11/2014 | 21:02:00 | 8.2 | 8.4 |
| 2/11/2014 | 21:03:00 | 8.3 | 8.4 |
| 2/11/2014 | 21:04:00 | 8.4 | 8.5 |
| 2/11/2014 | 21:05:00 | 8.4 | 8.6 |
| 2/11/2014 | 21:06:00 | 8.4 | 8.6 |
| 2/11/2014 | 21:07:00 | 8.4 | 8.6 |
| 2/11/2014 | 21:08:00 | 8.4 | 8.6 |
| 2/11/2014 | 21:09:00 | 8.3 | 8.5 |
| 2/11/2014 | 21:10:00 | 8.3 | 8.5 |
| 2/11/2014 | 21:11:00 | 8.3 | 8.5 |
| 2/11/2014 | 21:12:00 | 8.2 | 8.4 |
| 2/11/2014 | 21:13:00 | 8.1 | 8.3 |
| 2/11/2014 | 21:14:00 | 8 | 8.2 |
| 2/11/2014 | 21:15:00 | 8 | 8.1 |
| 2/11/2014 | 21:16:00 | 7.9 | 8.1 |
| 2/11/2014 | 21:17:00 | 7.8 | 8 |
| 2/11/2014 | 21:18:00 | 7.8 | 7.9 |
| 2/11/2014 | 21:19:00 | 7.7 | 7.8 |
| 2/11/2014 | 21:20:00 | 7.6 | 7.7 |
| 2/11/2014 | 21:21:00 | 7.4 | 7.5 |
| 2/11/2014 | 21:22:00 | 7.4 | 7.5 |
| 2/11/2014 | 21:23:00 | 7.4 | 7.5 |
| 2/11/2014 | 21:24:00 | 7.4 | 7.5 |
| 2/11/2014 | 21:25:00 | 7.4 | 7.5 |
| 2/11/2014 | 21:26:00 | 7.6 | 7.7 |
| 2/11/2014 | 21:27:00 | 7.6 | 7.8 |
| 2/11/2014 | 21:28:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:29:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:30:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:31:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:32:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:33:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:34:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:35:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:36:00 | 7.6 | 7.8 |
| 2/11/2014 | 21:37:00 | 7.6 | 7.8 |
| 2/11/2014 | 21:38:00 | 7.6 | 7.8 |
| 2/11/2014 | 21:39:00 | 7.5 | 7.7 |
| 2/11/2014 | 21:40:00 | 7.5 | 7.7 |
| 2/11/2014 | 21:41:00 | 7.4 | 7.6 |



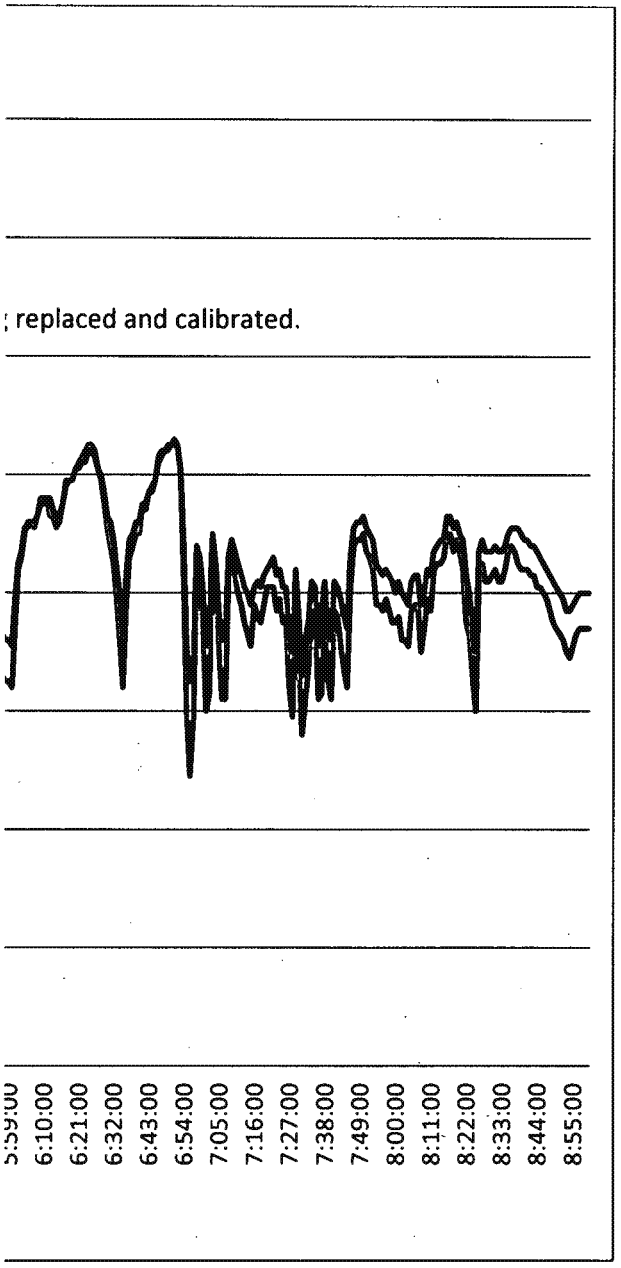

A

## Area 904 pH Probes readings from 2100 hours 2/11/14 to 0900 hours 2/12/14



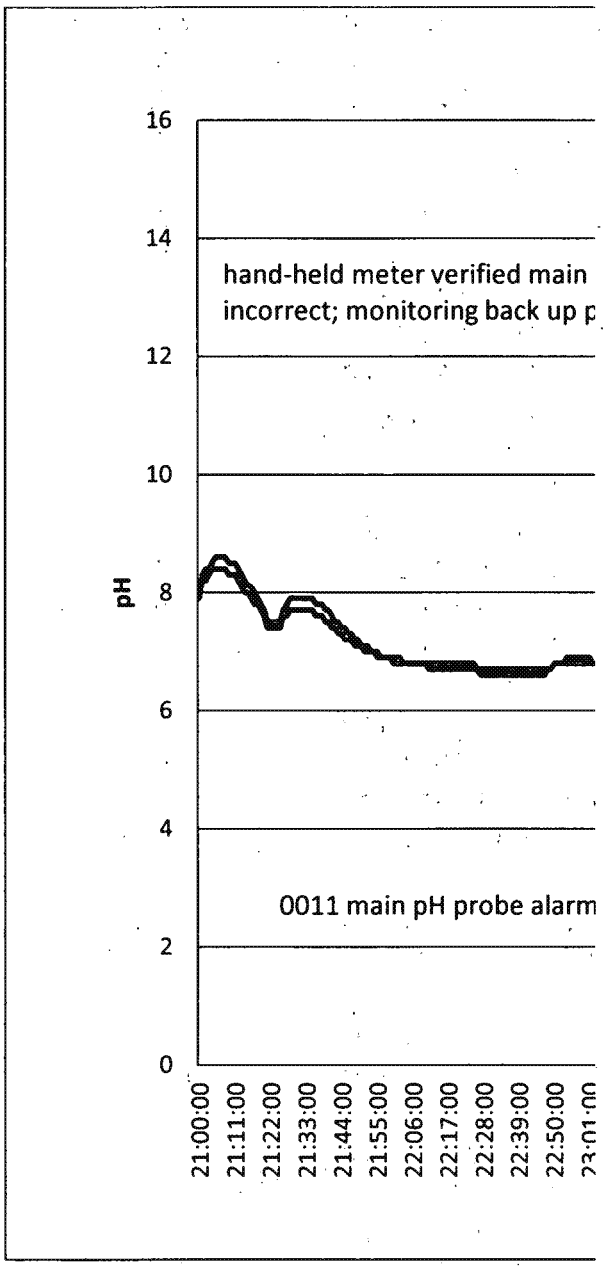

B

; replaced and calibrated.




C

| | $Time | Main pH probe AIT1209-5 | Backup pH probe AIT1209-7 |
|---|---|---|---|
| 2/11/2014 | 21:00:00 | 8 | 7.9 |
| 2/11/2014 | 21:01:00 | 8.2 | 8.3 |
| 2/11/2014 | 21:02:00 | 8.2 | 8.4 |
| 2/11/2014 | 21:03:00 | 8.3 | 8.4 |
| 2/11/2014 | 21:04:00 | 8.4 | 8.5 |
| 2/11/2014 | 21:05:00 | 8.4 | 8.6 |
| 2/11/2014 | 21:06:00 | 8.4 | 8.6 |
| 2/11/2014 | 21:07:00 | 8.4 | 8.6 |
| 2/11/2014 | 21:08:00 | 8.4 | 8.6 |
| 2/11/2014 | 21:09:00 | 8.3 | 8.5 |
| 2/11/2014 | 21:10:00 | 8.3 | 8.5 |
| 2/11/2014 | 21:11:00 | 8.3 | 8.5 |
| 2/11/2014 | 21:12:00 | 8.2 | 8.4 |
| 2/11/2014 | 21:13:00 | 8.1 | 8.3 |
| 2/11/2014 | 21:14:00 | 8 | 8.2 |
| 2/11/2014 | 21:15:00 | 8 | 8.1 |
| 2/11/2014 | 21:16:00 | 7.9 | 8.1 |
| 2/11/2014 | 21:17:00 | 7.8 | 8 |
| 2/11/2014 | 21:18:00 | 7.8 | 7.9 |
| 2/11/2014 | 21:19:00 | 7.7 | 7.8 |
| 2/11/2014 | 21:20:00 | 7.6 | 7.7 |
| 2/11/2014 | 21:21:00 | 7.4 | 7.5 |
| 2/11/2014 | 21:22:00 | 7.4 | 7.5 |
| 2/11/2014 | 21:23:00 | 7.4 | 7.5 |
| 2/11/2014 | 21:24:00 | 7.4 | 7.5 |
| 2/11/2014 | 21:25:00 | 7.4 | 7.5 |
| 2/11/2014 | 21:26:00 | 7.6 | 7.7 |
| 2/11/2014 | 21:27:00 | 7.6 | 7.8 |
| 2/11/2014 | 21:28:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:29:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:30:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:31:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:32:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:33:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:34:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:35:00 | 7.7 | 7.9 |
| 2/11/2014 | 21:36:00 | 7.6 | 7.8 |
| 2/11/2014 | 21:37:00 | 7.6 | 7.8 |
| 2/11/2014 | 21:38:00 | 7.6 | 7.8 |
| 2/11/2014 | 21:39:00 | 7.5 | 7.7 |
| 2/11/2014 | 21:40:00 | 7.5 | 7.7 |
| 2/11/2014 | 21:41:00 | 7.4 | 7.6 |



| | | | |
|---|---|---|---|
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| 2/11/2014 | 21:43:00 | 7.3 | 7.5 |
| 2/11/2014 | 21:44:00 | 7.3 | 7.4 |
| 2/11/2014 | 21:45:00 | 7.2 | 7.4 |
| 2/11/2014 | 21:46:00 | 7.2 | 7.3 |
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| 2/11/2014 | 21:50:00 | 7.1 | 7.1 |
| 2/11/2014 | 21:51:00 | 7 | 7.1 |
| 2/11/2014 | 21:52:00 | 7 | 7.1 |
| 2/11/2014 | 21:53:00 | 7 | 7 |
| 2/11/2014 | 21:54:00 | 7 | 7 |
| 2/11/2014 | 21:55:00 | 6.9 | 7 |
| 2/11/2014 | 21:56:00 | 6.9 | 6.9 |
| 2/11/2014 | 21:57:00 | 6.9 | 6.9 |
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| 2/11/2014 | 22:01:00 | 6.9 | 6.8 |
| 2/11/2014 | 22:02:00 | 6.9 | 6.8 |
| 2/11/2014 | 22:03:00 | 6.8 | 6.8 |
| 2/11/2014 | 22:04:00 | 6.8 | 6.8 |
| 2/11/2014 | 22:05:00 | 6.8 | 6.8 |
| 2/11/2014 | 22:06:00 | 6.8 | 6.8 |
| 2/11/2014 | 22:07:00 | 6.8 | 6.8 |
| 2/11/2014 | 22:08:00 | 6.8 | 6.8 |
| 2/11/2014 | 22:09:00 | 6.8 | 6.8 |
| 2/11/2014 | 22:10:00 | 6.8 | 6.8 |
| 2/11/2014 | 22:11:00 | 6.8 | 6.7 |
| 2/11/2014 | 22:12:00 | 6.8 | 6.7 |
| 2/11/2014 | 22:13:00 | 6.8 | 6.7 |
| 2/11/2014 | 22:14:00 | 6.8 | 6.7 |
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| 2/11/2014 | 22:24:00 | 6.8 | 6.7 |
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| 2/11/2014 | 22:27:00 | 6.7 | 6.6 |
| 2/11/2014 | 22:28:00 | 6.7 | 6.6 |

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|---|---|---|---|
| 2/11/2014 | 22:29:00 | 6.7 | 6.6 |
| 2/11/2014 | 22:30:00 | 6.7 | 6.6 |
| 2/11/2014 | 22:31:00 | 6.7 | 6.6 |
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| 2/11/2014 | 23:00:00 | 6.8 | 6.9 |
| 2/11/2014 | 23:01:00 | 6.8 | 6.9 |
| 2/11/2014 | 23:02:00 | 6.8 | 6.8 |
| 2/11/2014 | 23:03:00 | 6.8 | 6.8 |
| 2/11/2014 | 23:04:00 | 6.8 | 6.8 |
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| 2/11/2014 | 23:07:00 | 6.7 | 6.7 |
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| 2/11/2014 | 23:09:00 | 6.7 | 6.6 |
| 2/11/2014 | 23:10:00 | 6.7 | 6.6 |
| 2/11/2014 | 23:11:00 | 6.7 | 6.6 |
| 2/11/2014 | 23:12:00 | 6.7 | 6.7 |
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| 2/11/2014 | 23:14:00 | 7.2 | 7.3 |
| 2/11/2014 | 23:15:00 | 7.4 | 7.6 |

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|---|---|---|---|
| 2/11/2014 | 23:16:00 | 7.5 | 7.8 |
| 2/11/2014 | 23:17:00 | 7.5 | 8 |
| 2/11/2014 | 23:18:00 | 7.6 | 8.2 |
| 2/11/2014 | 23:19:00 | 7.8 | 8.5 |
| 2/11/2014 | 23:20:00 | 7.9 | 8.6 |
| 2/11/2014 | 23:21:00 | 8 | 8.7 |
| 2/11/2014 | 23:22:00 | 8 | 8.9 |
| 2/11/2014 | 23:23:00 | 8.1 | 9 |
| 2/11/2014 | 23:24:00 | 8.1 | 9 |
| 2/11/2014 | 23:25:00 | 8.1 | 9.1 |
| 2/11/2014 | 23:26:00 | 8.2 | 9.2 |
| 2/11/2014 | 23:27:00 | 8.3 | 9.3 |
| 2/11/2014 | 23:28:00 | 8.3 | 9.4 |
| 2/11/2014 | 23:29:00 | 8.4 | 9.4 |
| 2/11/2014 | 23:30:00 | 8.4 | 9.5 |
| 2/11/2014 | 23:31:00 | 8.7 | 9.9 |
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| 2/11/2014 | 23:33:00 | 8.8 | 9.9 |
| 2/11/2014 | 23:34:00 | 8.7 | 9.9 |
| 2/11/2014 | 23:35:00 | 8.6 | 9.8 |
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| 2/11/2014 | 23:37:00 | 8.6 | 9.6 |
| 2/11/2014 | 23:38:00 | 8.6 | 9.6 |
| 2/11/2014 | 23:39:00 | 8.7 | 9.8 |
| 2/11/2014 | 23:40:00 | 8.8 | 9.9 |
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| 2/11/2014 | 23:47:00 | 9.1 | 10.4 |
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| 2/11/2014 | 23:49:00 | 7.9 | 10.4 |
| 2/11/2014 | 23:50:00 | 8 | 10.6 |
| 2/11/2014 | 23:51:00 | 7.7 | 10.6 |
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| 2/12/2014 | 5:46:00 | 6.7 | 7.4 |
| 2/12/2014 | 5:47:00 | 6.7 | 7.3 |
| 2/12/2014 | 5:48:00 | 6.6 | 7.2 |
| 2/12/2014 | 5:49:00 | 6.5 | 7.2 |
| 2/12/2014 | 5:50:00 | 6.5 | 7.1 |
| 2/12/2014 | 5:51:00 | 6.4 | 7.1 |
| 2/12/2014 | 5:52:00 | 6.5 | 7.1 |
| 2/12/2014 | 5:53:00 | 7.5 | 7.8 |
| 2/12/2014 | 5:54:00 | 6.9 | 7.5 |
| 2/12/2014 | 5:55:00 | 6.9 | 7.5 |
| 2/12/2014 | 5:56:00 | 6.7 | 7.4 |
| 2/12/2014 | 5:57:00 | 6.6 | 7.3 |
| 2/12/2014 | 5:58:00 | 6.5 | 7.2 |
| 2/12/2014 | 5:59:00 | 6.5 | 7.2 |
| 2/12/2014 | 6:00:00 | 6.4 | 7.1 |
| 2/12/2014 | 6:01:00 | 7.5 | 7.9 |
| 2/12/2014 | 6:02:00 | 8.4 | 8.5 |
| 2/12/2014 | 6:03:00 | 8.6 | 8.7 |
| 2/12/2014 | 6:04:00 | 9 | 9.1 |
| 2/12/2014 | 6:05:00 | 9.2 | 9.1 |
| 2/12/2014 | 6:06:00 | 9.2 | 9.2 |
| 2/12/2014 | 6:07:00 | 9.1 | 9.2 |
| 2/12/2014 | 6:08:00 | 9.3 | 9.3 |
| 2/12/2014 | 6:09:00 | 9.6 | 9.5 |
| 2/12/2014 | 6:10:00 | 9.6 | 9.5 |
| 2/12/2014 | 6:11:00 | 9.6 | 9.6 |
| 2/12/2014 | 6:12:00 | 9.3 | 9.6 |
| 2/12/2014 | 6:13:00 | 9.3 | 9.4 |
| 2/12/2014 | 6:14:00 | 9.1 | 9.3 |
| 2/12/2014 | 6:15:00 | 9.2 | 9.3 |
| 2/12/2014 | 6:16:00 | 9.5 | 9.5 |
| 2/12/2014 | 6:17:00 | 9.9 | 9.8 |
| 2/12/2014 | 6:18:00 | 9.9 | 9.9 |

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|---|---|---|---|
| 2/12/2014 | 6:19:00 | 9.9 | 9.9 |
| 2/12/2014 | 6:20:00 | 10.1 | 10.1 |
| 2/12/2014 | 6:21:00 | 10.2 | 10.1 |
| 2/12/2014 | 6:22:00 | 10.3 | 10.2 |
| 2/12/2014 | 6:23:00 | 10.4 | 10.2 |
| 2/12/2014 | 6:24:00 | 10.5 | 10.4 |
| 2/12/2014 | 6:25:00 | 10.5 | 10.4 |
| 2/12/2014 | 6:26:00 | 10.4 | 10.3 |
| 2/12/2014 | 6:27:00 | 10.1 | 10.1 |
| 2/12/2014 | 6:28:00 | 9.9 | 10 |
| 2/12/2014 | 6:29:00 | 9.5 | 9.7 |
| 2/12/2014 | 6:30:00 | 9.1 | 9.3 |
| 2/12/2014 | 6:31:00 | 8.8 | 9.2 |
| 2/12/2014 | 6:32:00 | 8.5 | 8.9 |
| 2/12/2014 | 6:33:00 | 7.9 | 8.4 |
| 2/12/2014 | 6:34:00 | 7.2 | 8 |
| 2/12/2014 | 6:35:00 | 6.4 | 7.3 |
| 2/12/2014 | 6:36:00 | 7.8 | 8.3 |
| 2/12/2014 | 6:37:00 | 8.6 | 8.9 |
| 2/12/2014 | 6:38:00 | 8.8 | 9 |
| 2/12/2014 | 6:39:00 | 9 | 9.2 |
| 2/12/2014 | 6:40:00 | 9 | 9.2 |
| 2/12/2014 | 6:41:00 | 9.5 | 9.5 |
| 2/12/2014 | 6:42:00 | 9.4 | 9.5 |
| 2/12/2014 | 6:43:00 | 9.7 | 9.7 |
| 2/12/2014 | 6:44:00 | 9.7 | 9.8 |
| 2/12/2014 | 6:45:00 | 9.9 | 9.9 |
| 2/12/2014 | 6:46:00 | 10.3 | 10.2 |
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| 2/12/2014 | 6:50:00 | 10.5 | 10.5 |
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| 2/12/2014 | 6:52:00 | 10.5 | 10.5 |
| 2/12/2014 | 6:53:00 | 10 | 10.1 |
| 2/12/2014 | 6:54:00 | 8.2 | 8.9 |
| 2/12/2014 | 6:55:00 | 6 | 7.2 |
| 2/12/2014 | 6:56:00 | 4.9 | 6.5 |
| 2/12/2014 | 6:57:00 | 5.9 | 6.6 |
| 2/12/2014 | 6:58:00 | 8.4 | 8.8 |
| 2/12/2014 | 6:59:00 | 8 | 8.6 |
| 2/12/2014 | 7:00:00 | 7.5 | 8.1 |
| 2/12/2014 | 7:01:00 | 6 | 7.1 |
| 2/12/2014 | 7:02:00 | 6.3 | 7.4 |
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| 2/12/2014 | 7:09:00 | 8.6 | 8.9 |
| 2/12/2014 | 7:10:00 | 8.3 | 8.7 |
| 2/12/2014 | 7:11:00 | 8 | 8.5 |
| 2/12/2014 | 7:12:00 | 7.8 | 8.3 |
| 2/12/2014 | 7:13:00 | 7.5 | 8.1 |
| 2/12/2014 | 7:14:00 | 7.3 | 8 |
| 2/12/2014 | 7:15:00 | 7.1 | 7.8 |
| 2/12/2014 | 7:16:00 | 7.8 | 8.1 |
| 2/12/2014 | 7:17:00 | 7.6 | 8.2 |
| 2/12/2014 | 7:18:00 | 7.5 | 8.1 |
| 2/12/2014 | 7:19:00 | 7.8 | 8.3 |
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| 2/12/2014 | 7:32:00 | 6.2 | 7.2 |
| 2/12/2014 | 7:33:00 | 6.7 | 7.5 |
| 2/12/2014 | 7:34:00 | 7.7 | 8.2 |
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| 2/12/2014 | 7:36:00 | 6.2 | 7.1 |
| 2/12/2014 | 7:37:00 | 6.3 | 7.7 |
| 2/12/2014 | 7:38:00 | 7.7 | 8.2 |
| 2/12/2014 | 7:39:00 | 6.5 | 7.4 |
| 2/12/2014 | 7:40:00 | 6.2 | 7.2 |
| 2/12/2014 | 7:41:00 | 7.7 | 8.2 |
| 2/12/2014 | 7:42:00 | 7.6 | 8.1 |
| 2/12/2014 | 7:43:00 | 7.1 | 7.9 |
| 2/12/2014 | 7:44:00 | 6.7 | 7.6 |
| 2/12/2014 | 7:45:00 | 6.4 | 7.4 |
| 2/12/2014 | 7:46:00 | 8.1 | 8.6 |
| 2/12/2014 | 7:47:00 | 8.8 | 9.1 |
| 2/12/2014 | 7:48:00 | 8.9 | 9.2 |
| 2/12/2014 | 7:49:00 | 8.9 | 9.2 |
| 2/12/2014 | 7:50:00 | 9 | 9.3 |
| 2/12/2014 | 7:51:00 | 8.7 | 9.1 |
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| 2/12/2014 | 7:55:00 | 7.8 | 8.4 |
| 2/12/2014 | 7:56:00 | 7.7 | 8.3 |
| 2/12/2014 | 7:57:00 | 7.9 | 8.4 |
| 2/12/2014 | 7:58:00 | 7.7 | 8.3 |
| 2/12/2014 | 7:59:00 | 7.5 | 8.2 |
| 2/12/2014 | 8:00:00 | 7.5 | 8 |
| 2/12/2014 | 8:01:00 | 7.6 | 8.2 |
| 2/12/2014 | 8:02:00 | 7.2 | 8 |
| 2/12/2014 | 8:03:00 | 7.2 | 7.9 |
| 2/12/2014 | 8:04:00 | 7.1 | 7.8 |
| 2/12/2014 | 8:05:00 | 7.7 | 8.2 |
| 2/12/2014 | 8:06:00 | 7.8 | 8.3 |
| 2/12/2014 | 8:07:00 | 7.8 | 8.3 |
| 2/12/2014 | 8:08:00 | 7 | 7.8 |
| 2/12/2014 | 8:09:00 | 7.4 | 8 |
| 2/12/2014 | 8:10:00 | 7.9 | 8.4 |
| 2/12/2014 | 8:11:00 | 7.7 | 8.3 |
| 2/12/2014 | 8:12:00 | 8.4 | 8.7 |
| 2/12/2014 | 8:13:00 | 8.5 | 8.8 |
| 2/12/2014 | 8:14:00 | 8.5 | 8.9 |
| 2/12/2014 | 8:15:00 | 8.6 | 8.9 |
| 2/12/2014 | 8:16:00 | 9 | 9.3 |
| 2/12/2014 | 8:17:00 | 9 | 9.3 |
| 2/12/2014 | 8:18:00 | 8.7 | 9.1 |
| 2/12/2014 | 8:19:00 | 8.9 | 9.2 |
| 2/12/2014 | 8:20:00 | 8.7 | 9 |
| 2/12/2014 | 8:21:00 | 8.4 | 8.9 |
| 2/12/2014 | 8:22:00 | 7.5 | 8.3 |
| 2/12/2014 | 8:23:00 | 7.3 | 8 |
| 2/12/2014 | 8:24:00 | 6.6 | 7.5 |
| 2/12/2014 | 8:25:00 | 6 | 7 |
| 2/12/2014 | 8:26:00 | 8.4 | 8.7 |
| 2/12/2014 | 8:27:00 | 8.5 | 8.9 |
| 2/12/2014 | 8:28:00 | 8.2 | 8.7 |
| 2/12/2014 | 8:29:00 | 8.2 | 8.7 |
| 2/12/2014 | 8:30:00 | 8.3 | 8.7 |
| 2/12/2014 | 8:31:00 | 8.4 | 8.8 |
| 2/12/2014 | 8:32:00 | 8.2 | 8.7 |
| 2/12/2014 | 8:33:00 | 8.2 | 8.7 |
| 2/12/2014 | 8:34:00 | 8.4 | 8.8 |
| 2/12/2014 | 8:35:00 | 8.7 | 9 |
| 2/12/2014 | 8:36:00 | 8.8 | 9.1 |
| 2/12/2014 | 8:37:00 | 8.7 | 9.1 |
| 2/12/2014 | 8:38:00 | 8.5 | 9.1 |
| 2/12/2014 | 8:39:00 | 8.4 | 9 |

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|---|---|---|---|
| 2/12/2014 | 8:40:00 | 8.4 | 8.9 |
| 2/12/2014 | 8:41:00 | 8.4 | 8.9 |
| 2/12/2014 | 8:42:00 | 8.3 | 8.8 |
| 2/12/2014 | 8:43:00 | 8.3 | 8.8 |
| 2/12/2014 | 8:44:00 | 8.1 | 8.7 |
| 2/12/2014 | 8:45:00 | 8.1 | 8.6 |
| 2/12/2014 | 8:46:00 | 8 | 8.5 |
| 2/12/2014 | 8:47:00 | 7.9 | 8.4 |
| 2/12/2014 | 8:48:00 | 7.7 | 8.3 |
| 2/12/2014 | 8:49:00 | 7.5 | 8.2 |
| 2/12/2014 | 8:50:00 | 7.4 | 8.1 |
| 2/12/2014 | 8:51:00 | 7.3 | 8 |
| 2/12/2014 | 8:52:00 | 7.2 | 7.9 |
| 2/12/2014 | 8:53:00 | 7 | 7.7 |
| 2/12/2014 | 8:54:00 | 6.9 | 7.7 |
| 2/12/2014 | 8:55:00 | 7.1 | 7.8 |
| 2/12/2014 | 8:56:00 | 7.3 | 7.9 |
| 2/12/2014 | 8:57:00 | 7.4 | 8 |
| 2/12/2014 | 8:58:00 | 7.4 | 8 |
| 2/12/2014 | 8:59:00 | 7.4 | 8 |
| 2/12/2014 | 9:00:00 | 7.4 | 8 |

**TO:** Chris Verplancke - Finance Department

**FROM:** Steven M. Grace – DEC SMG

**DATE:** February 5, 2014

**RE:** **Wastewater User Charge Billing for Special Discharge**

Please bill, by invoice, the following charges applicable to an on-site special discharge approved in our original letter dated October 30, 1998, and extended in our most recent letter dated May 24, 2012. The discharge dates and quantity are from information submitted by Sharon Cotner, Corps of Engineers, in a letter dated January 31, 2014.

This charge is based on the rates in MSD Wastewater User Charge Ordinance 13042.

**PARTY TO BILL:** **Larry Joellenbeck**
**The Shaw Group Inc.**
**1 Angelrodt Street**
**St. Louis, MO 63147**

**BILLING IS FOR:** **On-Site Special Discharge**

**DISCHARGE PERIOD:** **October through December 2013**

**SOURCE OF WASTE:** **Treated construction water from the St. Louis Downtown FUSRAP Site located at Mallinckrodt, Inc., 3600 N. Second Street, St. Louis, Missouri.**

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| 10/1/13 - 12/31/13 | Volume | 167 | CcF | $2.50 | $417.50 |
| Totals: | --- | 167 | CcF | --- | $417.50 |

If you have any questions, please call me on extension 8755.

bv

ec: Cynthia Chalk – Finance Dept.
Mary Wimsatt – Finance Dept.
Laura Joiner – Finance Dept.
Brian Gibson
Doug Mendoza
Larry Joellenbeck, The Shaw Group Inc., 1 Angelrodt St., St. Louis, MO 63147

File: IU, MALLINCKRODT INC [1011728100]

1011728100
Mallinckrodt LLC

SR J

**Tom Boehm**

**From:** Shank, Brett <Brett.Shank@mallinckrodt.com>
**Sent:** Monday, February 03, 2014 11:12 AM
**To:** Tom Boehm
**Subject:** Mallinckrodt Permit 1011728100 - 1.1 - Delegation of Authority
**Attachments:** DOA Jan 2014 for MSD.PDF

Tom:

In accordance with requirements in MSD Ordinance No. 12559, we are informing MSD that Dexter Evans has been named our Senior Site Director replacing James A. Walter who recently was promoted within the organization.

Please see attached the corresponding Delegation of Authority.

Kind Regards,

- Plans updated

Brett Shank I Environmental Manager
**Mallinckrodt Pharmaceuticals**
3600 North 2nd St. I St. Louis, MO 63147 I USA
T: 314.654.0002 I M: 314.724.4157 I F: 314.654.1251
brett.shank@mallinckrodt.com I www.mallinckrodt.com

This information may be confidential and/or privileged. Use of this information by anyone other than the intended recipient is prohibited. If you receive this in error, please inform the sender and remove any record of this message.

In accordance with requirements in MSD Ordinance No. 12559, we would like to inform you that an interim Site Director at the St. Louis Plant has been named. James A. Walter is the new interim Site Director and designated authority for responsibility for the overall operation of this facility.

Mallinckrodt LLC
101172810

# DELEGATION OF AUTHORITY

The undersigned, Eric Berry, does hereby certify that he is Vice-President and Assistant Secretary of Mallinckrodt LLC (Mallinckrodt), and that, as such officer, he is duly authorized to delegate authority to execute permits, certifications and licenses or any other such report for purposes of the Metropolitan St. Louis Sewer District Ordinance 12559. He hereby delegates and designates Dexter Evans, Senior Site Director for Mallinckrodt's St. Louis Plant facility, as the person authorized on behalf of Mallinckrodt, to execute any permit application, report or certification and any documents associated therewith, that must be certified in accordance with the above-referenced ordinance and any associated regulations in connection with Mallinckrodt's facility located at 3600 N. 2nd Street, St. Louis, MO.

IN WITNESS WHEREOF, the undersigned has executed this delegation of authority in the name of and on behalf of Mallinckrodt as of the 30th day of January 2014.

1/30/14
Date

By: Eric Berry
Eric Berry

The foregoing instrument was acknowledged before me this 30 day of January 2014, by Eric Berry on behalf of Mallinckrodt LLC. He is personally known to me or has produced appropriate identification.

Notary Public Name: STEPHANIE KARDASZ

Notary Public Signature: Stephanie Kardasz

Commission Expiration Date:

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

STEPHANIE KARDASZ
My Commission Expires
October 16, 2017
St. Louis County
Commission #13505725

**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

January 17, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Mr. Shank:

We have reviewed your application dated January 16, 2014 requesting approval to discharge 350 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is 20% ethylene glycol solution from the chiller system in Building 96 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. We understand that the wastewater will be discharged through sampling point 010.

Based on the information you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a 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 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 COD 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 13402, you will be billed by invoice at the billing rate in effect at the time of discharge. The current rate contained in MSD Ordinance 13402 is $310.07 per ton for COD over 600 mg/L. Using the assumed COD concentration based on the percent of ethylene 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 0.3 tons of COD over 600 mg/L. (Our quantitative estimate is 0.29 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, Mallinckrodt 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, MALLINCKRODT INC [1011728100]

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt LLC

Premise Address: 3600 N. 2nd St.

Send approval letter to applicant

Evaluated by: SMG

Date: 1/17/14

Application Dated: 1/16/14 Received: 1/16/14 All Requested Info. Received: 1/17/14

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.

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

SOURCE TYPE (circle): (IU) / Dead IU / SD

INDUSTRY ID: 1011728100

Sample Point: No. Assigned: 821 Description: 20% ethylene glycol soln. from chiller system in Bldg. 96

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: 01/17/14
Calculated by: Steve Grace
Source name: MALLINCKRODT LLC [1011728100]
Waste material: SP821
Discharge volume: 350 gallons

**2 STRENGTH INFORMATION:**

| | | | | |
|---|---|---|---|---|
| Sample BOD = | 0 | mg/l = | 0 | lbs BOD to be discharged |
| Sample COD = | 200,000 | mg/l = | 584 | lbs COD to be discharged |
| Sample TSS = | 0 | 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** | **0.41** | **14** |
| Coldwater | 0.00 | 0 | 1.65 | 4 |
| Fenton | 0.00 | 0 | 6.05 | 1 |
| Grand Glaize | 0.00 | 0 | 2.67 | 2 |
| Lemay | 0.00 | 0 | 0.61 | 10 |
| Lower Meramec | 0.00 | 0 | 4.40 | 1 |
| Missouri River | 0.00 | 0 | 1.07 | 5 |

**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 = 199400 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: 13402

| | | | |
|---|---|---|---|
| Volume = | $ | 2.50 | /CcF |
| BOD = | $ | 620.14 | /ton |
| COD = | $ | 310.07 | /ton |
| TSS = | $ | 231.35 | /ton |

| | | | | | |
|---|---|---|---|---|---|
| Flow charge = | $ | - | based on volume = | 0.5 | CcF |
| BOD surcharge = | $ | - | | | |
| COD surcharge = | $ | 90.26 | | | |
| TSS surcharge = | $ | - | | | |
| Total discharge charge = | $ | 90.26 | | | |
| **Customer charge =** | **$** | **90.26** | DEC charges special discharge customers for total charges > $20.00 | | |
| Approximate charge/gallon = | $ | 0.26 | | | |

**Comments**

require volume report for billing purposes. Smg

Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

# APPLICATION FOR SPECIAL DISCHARGE APPROVAL

**I. WASTEWATER SOURCE IDENTIFICATION:**

Site Name: Mallinckrodt LLC
Premise Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt LLC
Contact Person: Brett Shank
Title: Environmental Manager
Phone: 314.654.0002 Fax: 314.724.4157

**II. APPLICANT (mailing information):**

Applicant Name: Brett Shank
Title: Environmental Manager
Company Name: Mallinckrodt LLC
Mailing Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314.654.0002 Fax: 314.724.4157

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Ethylene Glycol and Water
2. Process/activity generating wastewater: Clean out of circulation loop on chiller lines (from Bldg. 96 per B. Shank 1/16/14 email)
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 |
|---|---|---|
| Ethylene Glycol | 20 | % |
| Water | 80 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 350 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: pH adjustment at main plant outfall SP010
   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): _____
Plant sewer to main outfall SP010 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):** Brett Shank

**Signature:** _____ **Date:** 01/16/2014

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 1011728100 Sample Point No. 821

**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

January 16, 2014

Brett Shank
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Mr. Shank:

We have reviewed your application dated January 15, 2014 requesting approval to discharge 1,000 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is a batch of reduced Diamide solution from Building 507 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. Information provided previously indicated that the reduced Diamide solution is a precursor to the production of imaging product MP104, and that this wastewater will be discharged through sampling point 010.

Based on the information you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary 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.**

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, Mallinckrodt 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, MALLINCKRODT INC [1011728100], 3600 N. 2nd St., St. Louis, Missouri

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt LLC  Evaluated by: SMG

Premise Address: 3600 N 2nd St.  Date: 1/16/14

Send approval letter to applicant

Application Dated: 1/15/14 Received: 1/16/14 All Requested Info. Received: 1/16/14

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.

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

SOURCE TYPE (circle): (IU) / Dead IU / SD

INDUSTRY ID: 1011728100

Sample Point: No. Assigned: 843 Description: reduced Diamide soln. from Bldg. 507

Normal WW flow from premise? N/A _____ ccf/month, 2,992,101 GPD, _____ GPH. from SP010

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: Mallinckrodt LLC
Premise Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt LLC
Contact Person: Brett Shank
Title: Environmental Manager
Phone: 314.654.0002 Fax: 314.724.4157

**II. APPLICANT (mailing information):**

Applicant Name: Brett Shank
Title: Environmental Manager
Company Name: Mallinckrodt LLC
Mailing Address: 3600 North 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314.654.0002 Fax: 314.724.4157

**III. A. MATERIAL TO BE DISCHARGED** (check all applicable boxes):

1. Wastewater description/location: Reduced Diamide / Water from Building 507
2. Process/activity generating wastewater: Process Upset
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 |
|---|---|---|
| Diamide | 33 | % |
| Water | 66 | % |
| | | |
| | | |

| 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: _____ 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: pH adjustment at main plant outfall SP010
   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): _____
Building 507 to plant sewer to SP010 _____ 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):** Brett Shank

**Signature:** _____ **Date:** 01/15/2014

**FOR MSD USE ONLY:**

File Name: Mallinckrodt Inc. ID No. 1011728100 Sample Point No. 843

Mallinckrodt Pharmaceuticals

SR
01/22

January 16, 2014

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

Re: 2013 4th Quarter Self-Monitoring Report
Discharge Permit No. 1011728100-1.1
3600 North Second Street, St. Louis, Missouri 63147

Dear Mr. Mendoza,

Please find enclosed the 2013 4th Quarter Self-Monitoring report for the Mallinckrodt LLC St. Louis Plant.

The following sample points received no pharmaceutical process water flow during the fourth quarter: SP008, SP011, SP080, SP930, and SP933.

If you have any questions or require more detailed information, please contact me at 314-654-0002.

Sincerely,

Brett Shank
Environmental Manager

ENCLOSURES

RECEIVED
JAN 17 2014
DIVISION OF
ENVIRONMENTAL COMPLIANCE

MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

METROPOLITAN ST LOUIS SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT LLC**

Permit No: 1011728100-1.1

Premise Address: 3600 North Second Street, St. Louis, MO 63147

Reporting Period: ☐ JAN-MAR ☐ APR-JUN ☐ JUL-SEP ☒ OCT-DEC

**PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER SYSTEM**

| RADIONUCLIDE | ACTIVITY DISCHARGED (millicuries) |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| TOTAL ACTIVITY DISCHARGED: | **No activity recorded this period.** |

**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 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/type name of signing official: James A. Walter

Title: Senior Director of Manufacturing

Telephone: 314-654-1300

Signature:

Date: 1/15/14

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ENVIRONMENTAL COMPLIANCE

INDUSTRIAL USER SELF MONITORING REPORT PAGE 2

## 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.**

| | |
|---|---|
| A | NO CHANGE IN WASTEWATER DISCHARGE AT SAMPLE POINTS WITH NO MONITORING REQUIRED |
| | For permit special conditions that waive monitoring at any sample point(s) specified in your permit, you are required to make the following certification for each report in which monitoring is waived:<br>_____ I certify, since the last discharge monitoring report, there has been no change in the character of the wastes discharged at sample points **001 and 002**.<br>_____ I certify, since the last discharge monitoring report, there has been no discharge from sample points **008 and 011**. |
| B | NO CHANGE IN WASTEWATER DISCHARGE AT ACTIVE CONNECTIONS WITHOUT SAMPLE POINTS |
| | For permit special conditions that waive monitoring at active connection points which are not specified as sample points in your permit, you are required to make the following certification:<br>_____ I certify, since the last discharge monitoring report, there has been no change in the character of wastes discharged at those active connection points which are not specified in my permit. |
| E | NO DISCHARGE OF CATEGORICAL WASTE |
| | For permit special conditions that prohibit discharge of wastes which are subject to certain categorical pretreatment standards, you are required to make the following certification:<br>_____ I certify, since the last discharge monitoring report, there has been no discharge of wastes which are subject to pretreatment standards in 40 CFR 414 (except for those wastes conveyed by Sample Point **905**). |
| F | CYANIDE NOT USED OR GENERATED IN 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from limitations and monitoring for Total Cyanide at the Pharmaceutical sample points **080, 915, and 936,** subject to the following certification:<br>_____ I certify, since the last discharge monitoring report, cyanide has not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. |
| H | CATEGORICAL POLLUTANTS NOT USED OR GENERATED IN CATEGORICAL OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants at the Pharmaceutical sample points **915 and 936,** subject to the following certification:<br>_____ I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, have not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. In addition, the above-referenced report remains valid. |
| I | SURROGATE MONITORING ALLOWED FOR 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants, and replaced by monitoring for surrogate pollutant(s), at the Pharmaceutical sample points **920 and 937** subject to the following certification:<br>_____ I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, continue to receive the same degree of treatment as the surrogate pollutant(s). In addition, the above-referenced report remains valid. |

## PART IV: GENERAL CERTIFICATION STATEMENTS

| | |
|---|---|
| B | DISCHARGE MONITORING REPORT CERTIFICATION |
| | **All permittees must sign and complete the information below:**<br><br>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.<br><br>Print or type name of signing official: James A. Walter<br><br>Title: Senior Director of Manufacturing Telephone: 314-654-1300<br><br>Signature: _____ Date: 1/15/14 |

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JAN 17 2014
DIVISION OF ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) _X_(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **001** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | | E | 1,000 | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | |

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JAN 17 2014

DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2032 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) _X___(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **002** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated fl | | | | | | | UNITS |
| FLOW | | E | 2,200 | | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | | |

RECEIVED

JAN 17 2014

DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) _X_(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS -----> | | | 003 | | 009 | | 099 | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED -----> | | | 10/11/2013 | | 10/11/2013 | | calculated | |
| TIMES AT WHICH SAMPLES WERE COLLECTED -----> | | | 0755, 0855, 0955, 1055 | | 0820, 0920, 1020, 1120 | | n/a | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | M | 40,867 | M | 13,651 | E | 27,216 | gal/day |
| Oil & Grease | 200 | G | 13 | G | 12 | E | 14 | mg/l |
| Biochemical Oxygen Demand | **** | C | 113 | C | 233 | E | 53 | mg/l |
| Chemical Oxygen Demand | **** | C | 457 | C | 431 | E | 470 | mg/l |
| Total Suspended Solids | **** | C | 185 | C | 200 | E | 177 | mg/l |
| Temperature | **** | G | 21.1 | G | 21.1 | E | 21.1 | deg C |
| pH | **** | G | 7.0 | G | 7.0 | E | 7.0 | S.U. |
| **** No limits for SP003 or SP009; monitoring requirement only for calculation at SP099 | | | | | | | | |
| * Calculated value was less than zero. | | | | | | | | |
| Lab Dilution Factor | | | 1, 5 | | 1, 5 | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) _X___(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **005** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 10/11/2013 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 810, 0910, 1010, 1150 | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated f | | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | | gal/day |
| Oil & Grease | 200 | G | 6 | | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 168 | | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 113 | | | | | | mg/l |
| Total Suspended Solids | **** | C | 25 | | | | | | mg/l |
| Temperature | 60 | G | 21.1 | | | | | | deg C |
| pH | 5.5 - 11.5 | G | 6.5 | | | | | | S.U. |
| **** No limits for SP005 | | | | | | | | | |
| Lab Dilution Factor | | | 1 | | | | | | |

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Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **008** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | N/A | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | N/A | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | | UNITS |
| FLOW | | E | | | | | | | gal/day |
| Oil & Grease | 200 | G | * | | | | | | mg/l |
| Biochemical Oxygen Demand | **** | G | * | | | | | | mg/l |
| Chemical Oxygen Demand | **** | G | * | | | | | | mg/l |
| Temperature | 60 | G | * | | | | | | deg C |
| Total Suspended Solids | **** | G | * | | | | | | mg/L |
| pH | 5.5 - 11.5 | G | * | | | | | | S.U. |
| * No Flow this Quarter | | | | | | | | | |
| Lab Dilution Factor | | | N/A | | | | | | |

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Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) _X_(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | | 010 | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | | 10/11/2013 | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | | 0835, 0935, 1035, 1135 | | | | | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated fl | | | | | | UNITS |
| FLOW | | E | 1,142,913 | | | | | gal/day |
| Oil & Grease | 200 | G | 25 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 575 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 971 | | | | | mg/l |
| Total Suspended Solids | **** | C | 120 | | | | | mg/l |
| Temperature | 60 | G | 32.2 | | | | | deg C |
| pH | 5.5 - 11.5 | G | see attached | | | | | S.U. |
| Chromium | 5.0 | C | 0.054 | | | | | mg/l |
| Copper | 2.7 | C | 0.073 | | | | | mg/l |
| Nickel | 2.3 | C | 0.032 | | | | | mg/l |
| Zinc | 3.0 | C | 0.292 | | | | | mg/l |
| Cyanide | 1.2 | C | <0.007 | | | | | mg/l |
| Shaded values represent detection limits | | | | | | | | |
| Lab Dilution Factor | | | 1, 2,5 | | | | | |

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Mallinckrodt pH Monitoring for SP010: October 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 10/15/13 7:35 | 5.0 | 5 |
| 10/24/13 9:20 | 5.4 | 5 |
| 10/29/13 0:20 | 5.4 | 5 |
| | **October Total:** | **15** |

Mallinckrodt pH Monitoring for SP010: November 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 11/5/13 13:30 | 3.9 | 5 |
| 11/6/13 15:25 | 4.1 | 5 |
| 11/14/13 23:30 | 4.8 | 5 |
| 11/14/13 23:45 | 5.3 | 5 |
| 11/18/13 9:10 | 4.4 | 5 |
| 11/20/13 21:10 | 5.2 | 5 |
| 11/26/13 12:15 | 5.1 | 5 |
| 11/28/13 10:35 | 4.7 | 5 |
| 11/30/13 14:55 | 4.5 | 5 |
| 11/30/13 15:15 | 5.2 | 5 |
| | **November Total:** | **50** |

Mallinckrodt pH Monitoring for SP010: December 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 12/4/13 16:15 | 5.2 | 5 |
| 12/14/13 22:55 | 4.4 | 5 |
| 12/16/13 10:55 | 5.0 | 5 |
| 12/26/13 10:45 | 5.1 | 5 |
| 12/30/13 13:30 | 5.4 | 5 |
| | **DecemberTotal:** | **25** |

TOTAL
90 min
=1.5 hrs

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Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) _X___(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | | 011 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | | N/A | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | | N/A | | | | | | | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | | | UNITS |
| FLOW | | E | | | | | | | | gal/day |
| Oil & Grease | 200 | G | * | | | | | | | mg/l |
| Biochemical Oxygen Demand | **** | G | * | | | | | | | mg/l |
| Chemical Oxygen Demand | **** | G | * | | | | | | | mg/l |
| Total Suspended Solids | **** | G | * | | | | | | | mg/l |
| Temperature | 60 | G | * | | | | | | | deg C |
| pH | 5.5 - 11.5 | G | * | | | | | | | S.U. |
| * No Flow this Quarter | | | | | | | | | | |
| Lab Dilution Factor | | | NA | | | | | | | |

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Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **080** | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated | | | | | UNITS |
| FLOW | | | | E | * | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | mg/L |
| n-Amyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | * | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | * | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | * | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | * | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | * | | | | mg/L |
| Diethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | * | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | * | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | * | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | * | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | * | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | * | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | * | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | * | | | | mg/L |
| Triethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | * | | | | mg/L |
| | | | | | | | | | |
| Oil & Grease | 1664 | 200 | | G | * | | | | mg/L |
| Biochemical Oxygen Demand | | **** | | C | * | | | | mg/L |
| Chemical Oxygen Demand | | **** | | C | * | | | | mg/L |
| Total Suspended Solids | | **** | | C | * | | | | mg/L |
| Temperature | | 60 | | G | * | | | | deg C |
| pH | | 5.5 - 11.5 | | G | * | | | | S.U. |
| *** No flow from SP080 in 4th QTR 2013** | | | | | | | | | |
| Dilution by lab | | | | | | | | | |

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Monitoring Period: ____(JAN-MAR) _____ (APR-JUNE) _____(JULY-SEPT) X____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | -----> | | 905 | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | -----> | | 10/9/2013 | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | -----> | | 1245 | | | |
| PARAMETER | MONTHLY LIMIT (ave) (gm/day) | DAILY MAX LIMIT (gm/day) | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flow | | results mg/L | | UNITS |
| FLOW | | | M | 68922 | | | gal/day |
| 1,2,4-Trichlorobenzene | 74 | 301 | G | 2.09 | 0.008 | | gm/day |
| 1,2-Dichlorobenzene | 74 | 301 | G | 1.30 | 0.005 | | gm/day |
| 1,3-Dichlorobenzene | 54 | 144 | G | 1.30 | 0.005 | | gm/day |
| 1,4-Dichlorobenzene | 54 | 144 | G | 1.30 | 0.005 | | gm/day |
| 2-Nitrophenol | 25 | 87 | G | 4.43 | 0.017 | | gm/day |
| 2-Methyl-4,6-dinitrophenol | 30 | 105 | G | 4.43 | 0.017 | | gm/day |
| 4-Nitrophenol | 61 | 218 | G | 4.43 | 0.017 | | gm/day |
| Acenapthene | 7 | 18 | G | 2.09 | 0.008 | | gm/day |
| Anthracene | 7 | 18 | G | 2.09 | 0.008 | | gm/day |
| Bis(2-ethylhexyl)phthalate | 36 | 98 | G | 1.30 | 0.005 | | gm/day |
| Diethyl phthalate | 17 | 43 | G | 2.09 | 0.008 | | gm/day |
| Dimethyl phthalate | 7 | 18 | G | 2.09 | 0.008 | | gm/day |
| Di-n-butyl phthalate | 8 | 16 | G | 0.78 | 0.003 | | gm/day |
| Fluoranthene | 8 | 20 | G | 2.09 | 0.008 | | gm/day |
| Fluorene | 7 | 18 | G | 2.09 | 0.008 | | gm/day |
| Hexachlorobenzene | 74 | 301 | G | 2.09 | 0.008 | | gm/day |
| Hexachlorobutadiene | 54 | 144 | G | 2.09 | 0.008 | | gm/day |
| Hexachloroethane | 74 | 301 | G | 2.09 | 0.008 | | gm/day |
| Naphthalene | 7 | 18 | G | 2.09 | 0.008 | | gm/day |
| Phenanthrene | 7 | 18 | G | 2.09 | 0.008 | | gm/day |
| Pyrene | 8 | 18 | G | 2.09 | 0.008 | | gm/day |
| 1,1,1-Trichloroethane | 8 | 22 | G | 1.30 | 0.005 | | gm/day |
| 1,1,2-Trichloroethane | 12 | 48 | G | 1.30 | 0.005 | | gm/day |
| 1,1-Dichloroethane | 8 | 22 | G | 1.30 | 0.005 | | gm/day |
| 1,1-Dichloroethene | 8 | 23 | G | 1.30 | 0.005 | | gm/day |
| 1,2-Dichloroethane | 74 | 301 | G | 1.30 | 0.005 | | gm/day |
| 1,2-Dichloropropane | 74 | 301 | G | 1.30 | 0.005 | | gm/day |
| Benzene | 22 | 51 | G | 0.52 | 0.002 | | gm/day |
| Carbon Tetrachloride | 54 | 144 | G | 1.30 | 0.005 | | gm/day |
| Chlorobenzene | 54 | 144 | G | 1.30 | 0.005 | | gm/day |
| Chloroethane | 42 | 112 | G | 2.61 | 0.010 | | gm/day |
| Chloroform | 42 | 123 | G | 1.30 | 0.005 | | gm/day |
| Chloromethane | 42 | 112 | G | 2.61 | 0.010 | | gm/day |
| cis-1,3-Dichloropropene | 74 | 301 | G | 1.30 | 0.005 | | gm/day |
| Ethylbenzene | 54 | 144 | G | 1.30 | 0.005 | | gm/day |
| Methylene Chloride | 14 | 64 | G | 1.30 | 0.005 | | gm/day |
| Nitrobenzene | 847 | 2423 | G | 2.61 | 0.010 | | gm/day |
| Tetrachloroethene | 20 | 62 | G | 1.30 | 0.005 | | gm/day |
| Toluene | 11 | 28 | G | 1.30 | 0.005 | | gm/day |
| trans-1,2-Dichloroethene | 9 | 25 | G | 1.30 | 0.005 | | gm/day |
| trans-1,3-Dichloropropene | 74 | 301 | G | 1.30 | 0.005 | | gm/day |
| Trichloroethene | 10 | 26 | G | 1.30 | 0.005 | | gm/day |
| Vinyl Chloride | 37 | 65 | G | 0.52 | 0.002 | | gm/day |
| | | | | | | | |
| | | | | | | | |
| Shaded values represent detection limits | | | | | | | |
| | | | | | | | |
| Lab Dilution Factor | | | | 1 | | | |

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Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **912** | | **912** | | **912** | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 10/10/2013 | | 11/7/2013 | | 12/3/2013 | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 930 | | 1030 | | 1240 | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated f | | | | | | UNITS |
| FLOW | | M | 39129 | M | 55905 | M | 34173 | gal/day |
| | | | | | | | | |
| DMAC (daily max) | 7091 | C | 565 | C | 855 | C | 551 | lb/day |
| DMAC (monthly average) | 5459 | C | 565 | C | 855 | C | 551 | lb/day |
| | | | | | | | | |
| | | | 1734 | | 1837 | | 1986 | mg/L |
| 565 lb / day · GAL / 1 kg | 1e6 / 1 | mg / kg | | | | | | |
| day 39,129 gal 3.785L 2.2 lb | | | | | | | | |
| Lab Dilution Factor | | | 1 | | 2 | | 2 | |

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Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 915 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 10/9/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1420 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <5 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| Chloroform | 524.2 | 0.10 | 0.03 | G | <0.02 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| Diethyl amine* | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <2.5 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | 0.436 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Triethyl amine* | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.65 | | | | | | mg/L |
| *** Annual monitoring requirement done in 1st qtr 2013* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 50, 100 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) _X_(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 920 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 10/7/2013 | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0930 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 13,000 | | | | | | | gal/day |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.400 | | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.100 | | | | | | | mg/L |
| Cyanide (total) | 335.4 | 33.50 | 9.40 | | <0.007 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) _X_(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 927 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 10/9/2013 | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1420 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <5 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2. | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.5 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20, 100 | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) _X_(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 930 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | NA | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | NA | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| * No Flow this Quarter | | | | | | | | | | | |
| Dilution by lab | | | | | NA | | | | | | |

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Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) _X_(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 933 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | N/A | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | N/A | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| * No Flow this Quarter | | | | | | | | | | | |
| Dilution by lab | | | | | NA | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) _X_(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS -----> | | | | | 936 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED -----> | | | | | 11/4/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED -----> | | | | | 1345 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 16,500 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | 0.287 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | <0.02 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Diethyl amine** | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Triethyl amine** | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.26 | | | | | | mg/L |
| * Chloroform Results | Raw Water | SP936 | SP936- Raw Water | | | | | | | | |
| 11/4/2013 | 0.0100 | <0.02 | <0.02 | | | | | | | | |
| *Results above reported as the difference between SP936 and Raw Water* | | | | | | | | | | | |
| ** *Annual monitoring requirement taken in 1st qtr 2013* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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2013 4Q SP9XX PEG.xlsx

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) X (OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 937 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 10/7/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0930 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 23,000 | | | | | | gal/day |
| Tetrahydrofuran | 524.2 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Cyanide (total) | 335.4 | 33.50 | 9.40 | G | <0.007 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: Mallinckrodt Inc.

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _____(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) _X___(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | 938 | | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 10/18/2013 | | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1245 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 71 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | 0.168 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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ACCOUNT NUMBER: **10117281-00**

COMPANY NAME: **MALLINCKRODT INC**

CORRESPONDENCE

12-18-13

FROM: 12-18-12 THRU: 12-26-13

| X | CORRESPONDANCE LOCATED IN OVERFLOW FILE |
|---|---|

03-28-16 Moved to ARDHIVED INDUSTRY files.

SR

## Tom Boehm

**From:** Shank, Brett <Brett.Shank@mallinckrodt.com>
**Sent:** Thursday, December 26, 2013 9:22 AM
**To:** Tom Boehm
**Subject:** Mallinckrodt Permit 1011728100 - 1.1 - Delegation of Authority
**Attachments:** Delegation of Authority for MSD Dec 2013.pdf

Mallinckrodt LLC
1011 728100 YES

Tom:

Please see attached Delegation of Authority Letter for Mallinckrodt Permit 1011728100 – 1.1.

The DOA complies with the requirements of the MSD Ordinance and was prepared by our legal department.

Kind Regards

Brett Shank I Environmental Manager
**Mallinckrodt Pharmaceuticals**
3600 North 2nd St. I St. Louis, MO 63147 I USA
T: 314.654.0002 I M: 314.724.4157 I F: 314.654.1251
brett.shank@mallinckrodt.com I www.mallinckrodt.com

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Mallinckrodt LLC
1011728100

## DELEGATION OF AUTHORITY

The undersigned, Eric Berry, does hereby certify that he is Vice-President and Assistant Secretary of Mallinckrodt LLC (Mallinckrodt), and that, as such officer, he is duly authorized to delegate authority to execute permits, certifications and licenses or any other such report, to designate a duly authorized representative for purposes of Metropolitan St. Louis Sewer District Ordinance 12559. He hereby delegates and designates James A. Walter, Senior Director Manufacturing, as the person authorized on behalf of Mallinckrodt to execute any permit application, report or certification and any documents associated therewith, that must be certified in accordance with the above-referenced ordinance in connection with Mallinckrodt's St. Louis Plant facility located at 3600 N. 2nd Street, St. Louis, MO.

IN WITNESS WHEREOF, the undersigned has executed this delegation of authority in the name of and on behalf of Mallinckrodt as of the 19th day of December 2013.

12/19/13
Date

By: Eric Berry
Eric Berry

The foregoing instrument was acknowledged before me this 19th day of December 2013, by Eric Berry on behalf of Mallinckrodt LLC. He is personally known to me or has produced appropriate identification.

Notary Public Name: Kristine R. Wall

Notary Public Signature: Kristine R Wall

Commission Expiration Date: 9/9/17

KRISTINE R. WALL
Notary Public-Notary Seal
State of Missouri, Jefferson County
Commission # 13491817
My Commission Expires Sep 9, 2017

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL FACILITY INSPECTION REPORT

Company: Mallinckrodt, LLC Account #: 1011728100
Premise Address: 3600 N. 2nd St. Zip Code: 63147
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: Brett Shank
Title: Environmental Manager Phone#: 314.654.0002
Inspector: Tom Boehm
Others Present: None
Inspection Date: 12/18/13 Time: From 08:15 am To 02:30 pm (Last Insp. 12/18/12)

**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: _____
   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? | Frequency of DISCHARGE | Sample pt. |
|---|---|---|---|---|
| Pharmaceutical mnfg via extraction and associated washdown (439 Sub B) | Batch | Yes | Daily | 927, 930, 933, > combo sewer |
| Stearate mnfg and associated washdown (414 Sub G&H) | Batch | Yes | Daily | 905> combo sewer |
| Imaging compound mnfg (non-radioactive) and associated washdown | Batch | Yes | Daily | 912> combo sewer |
| Inorganic compound mnfg (salts) and associated washdown | Batch | Yes | Daily | 010> combo sewer |
| Pharmaceutical mnfg via mixing/compounding and associated washdown (439 Sub D) | Batch | Yes | Daily | 938, > combo sewer |
| Pharmaceutical mnfg via chemical synthesis and associated washdown (439 Sub C) | Batch | Yes | Daily | 080, 915, 920, 936, 937, > combo sewer |
| Pharmaceutical dosage mnfg ('lollipod') and associated washdown | Batch | Yes | Daily | 938> combo sewer |
| Laboratory wastewater | Batch | Yes | Daily | 003,005,010, 099> combo sewer |
| Construction decontamination and ground water from FUSRAP radioactive soil excavation | Batch | Yes | Daily | 809> combo sewer |
| Kitchen wastewater | Batch | Yes | Daily | 010> combo sewer |

3. PRETREATMENT (other than grease traps) - describe:

| | Sample pt. |
|---|---|
| pH adjustment | 005,010,080, 905, 912, 930, 933 |
| Steam stripping (PEG systems 1 & 2) | 920, 937 |
| Oil interceptor | 003, 010 |
| Filtration | 809, 927 |
| Chemical precipitation | 809, 905 |
| Filter press | 905 |
| Carbon absorption | 809 |
| Settling | 809 |

4. DOES COMPANY HAVE ANY GREASE TRAPS? Yes☐ No☒

If yes:
- A. List sample points: _____
- B. What is the frequency for cleaning & maintenance? _____
- 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: New process for Buframorphine in Bldg 97; wastewater will be similar to that already being collected by the SP; no changes needed;
- 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? Yes☒ No☐

If yes:
- A. List regulation & describe (including any discharge):
  40 CFR 439 Sub B,C,D PSES (Sub E N/A, no stds) - pharmaceutical systhesis, extraction and mixing/compounding - some wastewater to PEG system; 414 Sub G&H PSES - stearates, discharge to sewer;
- 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)

8. HAS COMPANY CERTIFIED TO THE ABSENCE OF SPECIFIC CATEGORICAL POLLUTANTS? Yes☒ No☐

If yes:
- A. Certification date: 04/05/10
- B. List absent pollutants: Diethylamine, triethylamine, cyanide
- 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. Comments: _____

9. 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? _____

10. IS ANY WASTEWATER SUBJECT TO PRODUCTION ☐ OR MASS ☒ BASED STANDARDS? Yes☒ No☐

If yes:
- A. At which points? 905,912

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: _____

11. ARE ANY RADIOACTIVE MATERIALS HANDLED? Yes☒ No☐

If yes: A. Describe operations & disposal: FUSRAP soil/groundwater remediation will continue on the property for the forseeable future;

B. Does company have MSD authorization for disposal to sewer? NA☐ Yes☒ No☐

C. Most recent authorization date: 7/8/94

D. Amount discharged in most recent complete calendar year: 0.0162 mCi

12. 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: _____

13. 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:
Pharmaceutical mnfg washdown consumes quite a bit of water; no excessive usage noted during the inspection walkthrough;

14. BASED ON OBSERVATIONS DURING INSPECTION, DOES COMPANY APPEAR TO HAVE SOME WATER THAT IS NOT DISCHARGED TO SEWER? Yes☒ No☐

If yes: A. Describe: In product, evaporation, hauled

B. Was "Return Factor Program" brochure given to company? Yes☒ No☐
(regardless of whether some water is not discharged to sewer)

15. 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)

16. 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? ☐

17. 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 |
|---|---|---|---|---|
| pH | 03/19/13 | 005 | Yes | They believe a detergent used in the glassware washer and have ceased use of it; resampling showed return to compliance; |
| TTO | 01/08/13 | 009 | N/A | The result was due to high detection limits; compliance was not demonstrated yet not considered a violation; no NOV was sent; |
| | | | N/A | |
| | | | N/A | |
| | | | N/A | |

B. Comments: _____

18. 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: _____

19. 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: 07/09/13-Magnesium stearate release due to overcharging stearate tank-water valves are now locked on off shifts;

20. 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?
Spill kits are located at points in facility; spill response team is trained to respond and handle spills; AST farms are contained; Haz waste is stored in a containment area that slopes to a sump system and has a roof overhead.

21. BASED ON OBSERVATIONS DURING INSPECTION, ARE THERE ANY AREAS WHERE COMPANY ACTIVITIES APPEAR TO IMPAIR STORMWATER RUNOFF? Yes☐ No☒

If yes: A. Describe: All AST volumes are contained; no major staining in short-term 72 hour tote staging/storage in open yard;

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)

22. 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. | Mallinckrodt Pharma SPCCP | 09/28/12 |
| 2. | Mallinckrodt Spill & Slug Discharge Control Plan | 3/1/10 |

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 (in addition to those listed in Part A)? (If yes, write company & require) Yes☐ No☒

E. Explain why/why not for C or D: They have addressed both small and larger potential spills and have most large volumes contained; smaller volumes are to be controlled with spill kits;

23. DOES COMPANY HAVE ANY MAINTENANCE SHOP PARTS WASHERS? Yes☒ No☐

If yes: A. Parts washer solvent name: Mineral spirits

B. Priority pollutants (or "none"): Typically BTEX

C. How is spent solvent disposed? Hauled

(These solvents are not included in database's priority pollutants list, nor monitored for unless conditions show potential discharges)

24. 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? |
|---|---|---|---|---|
| See attached IDS | In process or cleaning | Yes☐ No☒ | Sold in product, hauled; | Yes☒ No☐ |
| | | Yes☐ No☐ | | Yes☐ No☐ |
| | | Yes☐ No☐ | | Yes☐ No☐ |
| | | Yes☐ No☐ | | Yes☐ No☐ |
| | | Yes☐ No☐ | | Yes☐ No☐ |
| | | Yes☐ No☐ | | Yes☐ No☐ |

25. 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)

26. 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)

27. 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, 912 monthly
- D. How frequently are reports required? Quarterly
- E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐
- F. If no, explain: _____

28. 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: They are well versed in calibration and use of the meters;

29. DOES COMPANY CONTINUOUSLY MONITOR AT SAMPLE POINT AND KEEP A PERMANENT RECORD FOR: pH ☒, TEMP ☐, LEL ☐? Yes☒ No☐

If yes:
- A. At which SPs? 010
- B. Does company submit quarterly summaries? Yes☒ No☐
- C. If no, explain: _____

30. 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: _____

31. 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? Continuous pH monitoring & radiation discharge report ;Any reading out of compliance range and duration for pH; Disposal of rad waste – specific radionuclide and amount discharge in mCi;

D. How frequently are reports required? Quarterly with SMRs;

E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐

F. If no, explain: _____

32. 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: _____

33. 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☐

34. 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 EHS office files;

35. 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? 40 CFR 439 Sub B,C,D; 414 Sub G&H;

☒ Process discharge => 25,000 GPD Total process volume: 794000

☐ 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)

36. 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: _____

37. 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: _____

38. 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☐

39. SAMPLE POINTS

| | | | | | | DJ(y/n) |
|---|---|---|---|---|---|---|
| SP # | | Fed.Reg. | | Components: | See attached IDS report; | N/A |
| SP # | | Fed.Reg. | | Components: | | N/A |
| SP # | | Fed.Reg. | | Components: | | N/A |
| SP # | | Fed.Reg. | | Components: | | N/A |
| SP # | | Fed.Reg. | | Components: | | N/A |

40. ARE ANY SAMPLE POINTS TRAPPED VENTS? Yes☐ No☒

If yes:
- A. List SPs: _____
- B. Was co. informed that T-vents are preferred, and told why? Yes☐ No☐

41. ARE DISCHARGES AT ANY SPs SMALL/IRREGULAR ENOUGH TO ALLOW GRAB SAMPLES? Yes☒ No☐

If yes:
- A. List SPs and reasons: 001 - relatively low flow, sanitary only;

42. ARE THERE ANY UNSAMPLED DISCHARGES? (list each lateral separately) Yes☐ No☒

| | | | |
|---|---|---|---|
| Dummy SP # | | Components: | |
| Dummy SP # | | Components: | |

43. DO ANY SAMPLE POINTS (including Unsampled/Dummy SPs) RECEIVE STORMWATER? Yes☒ No☐

If yes:
- A. List Sample Points: 001, 003, 008, 009, 010, 011, 080, 099

44. WERE ALL SAMPLE POINTS (except Dummy SPs) OPENED & INSPECTED? No SPs☐ Yes☐ No☒
- A. If any SPs cannot be located or opened, explain: Multiple SPs were under ice/snow during visit; see comments;
- 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☐

45. REVIEW THE SAMPLE POINT MAP! Last map revision date: 12/18/12
- A. Is the map correct and accurate in all its details? Yes☒ No☐
- B If no, what changes are needed: _____

46. 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.

- 415 Sub B&K PSES (no stds) - zinc sulfate is no longer applicable because they no longer perform this process on site;
- Bldg 103 used for 90 day haz waste storage area; Bldg 81 is used for haz mat warehouse;
- 2-65K gallon tanks are dedicated to sewer diversion if needed;
- Near buildings 98 and 96, a 72 hour outdoor holding area for totes is not contained but major staining was evident;
- Many of the SPs were under ice/snow during the visit, but the Field Techs last sampled on 11/15/13 and stated they had no issues with any of the points;

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

### INDUSTRIAL USER CLASSIFICATIONS

| | |
|---|---|
| 03/06/1997 | SIU |
| 03/06/1997 | CIU |
| 03/06/1997 | SURC |
| 03/06/1997 | TOX |

### WUNNENBERG INFO.

**Base Map** 17D4
**Wun:** St. Louis City & Co.
**Grid:** E 18 Page 27

### SIU CRITERIA

CAT Process subject to Cat Stds under 40 CFR 40
PR25 Process Disch => 25,000 GPD

### GENERAL INFORMATION

**Office Mailing Address**
3600 N. 2nd Street
St. Louis, MO. 63147

**Billing Address**
3600 N. 2nd St.
St. Louis, MO. 63147

### INSPECTION INFORMATION

| Next Due | Insp Rslt | |
|---|---|---|
| 12/18/2013 | RIN | Tom Boehm |

### PERMIT INFORMATION

| | |
|---|---|
| **Issue Date:** | 06/01/2010 |
| **Expire Date:** | 05/31/2015 |
| **Extended Date:** | 04/30/2011 |
| **Writer** | Scott Rehmer |
| **Issue Date:** | 05/01/2011 |
| **Expire Date:** | 05/31/2015 |
| **Extended Date:** | 05/31/2012 |
| **Writer** | Scott Rehmer |
| **Issue Date:** | 06/01/2013 |
| **Expire Date:** | 05/31/2015 |
| **Extended Date:** | 06/30/2013 |
| **Writer** | Chris Bulmahn |
| **Issue Date:** | 07/01/2013 |
| **Expire Date:** | 05/31/2015 |
| **Extended Date:** | |
| **Writer** | Scott Rehmer |

### IUQ INFORMATION

| | |
|---|---|
| **IUQ Recvd Date:** | 08/31/1999 |
| **Reviewer:** | Fabian Grabski |
| **IUQ Recvd Date:** | 10/04/2004 |
| **Reviewer:** | Jason Gill |
| **IUQ Recvd Date:** | 12/01/2009 |
| **Reviewer:** | Jason Gill |

### CONTACTS

| | | | | |
|---|---|---|---|---|
| BILL | Brett Shank | Environmental Manager | OFF | (314) 654-0002 Ext. |
| | Brett Shank | Environmental Manager | CELL | (314) 724-4157 Ext. |
| COR1 | Dexter Evans | Senior Site Director | OFF | (314) 654-1300 Ext. |
| FLD1 | Brett Shank | Environmental Manager | FAX | (314) 654-1251 Ext. |
| | Brett Shank | Environmental Manager | OFF | (314) 654-0002 Ext. |
| | Brett Shank | Environmental Manager | SWR | (314) 654-2000 Ext. |
| | Brett Shank | Environmental Manager | CELL | (314) 724-4157 Ext. |
| FLD2 | Jada Wilhelm | Environmental Manager | OFF | (314) 654-0149 Ext. |
| OFF1 | Brett Shank | Environmental Manager | CELL | (314) 724-4157 Ext. |
| | Brett Shank | Environmental Manager | OFF | (314) 654-0002 Ext. |
| OFF2 | Jada Wilhelm | Environmental Manager | OFF | (314) 654-0149 Ext. |

### OPERATIONAL INFORMATION

**Work Days:** 7

| | | | | S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 660 | 07:00AM | 8.0 | Y | Y | Y | Y | Y | Y | Y |
| 2 | 70 | 03:20PM | 8.0 | Y | Y | Y | Y | Y | Y | Y |
| 3 | 70 | 11:10PM | 8.0 | Y | Y | Y | Y | Y | Y | Y |

**Total Emp:** 800 **Hrs:** 24.0

### OTHER AGENCIES INFORMATION

| | | |
|---|---|---|
| 11/18/1996 | MDNR - Hazardous Waste Program | 01029 |
| 11/19/1996 | EPA - Hazardous Waste Program | MOD096726484 |
| 11/01/1997 | Nuclear Regulatory Commission | 24-05804-02 |
| 09/28/2005 | MSD - Billing Account Number | 00118821 |

### NON-SEWERED WASTE

**On-Site Storage** Y **On-Site Disposal** N **Off-Site Disposal** Y

| | | | |
|---|---|---|---|
| 12/01/2009 | Solvents/Thinners | 1,109,000 | LBS |
| 12/01/2009 | Paints or Paint Sludges | 1,400 | LBS |
| 12/01/2009 | Equipment Oils and/or Grease | 16,000 | LBS |
| 12/01/2009 | Acids and/or Alkalies | 1,428,000 | LBS |
| 12/01/2009 | Infectious Waste | 600 | LBS |
| 12/01/2009 | Kitchen/Food Service Grease | 1,000 | LBS |
| 12/01/2009 | Organic Compounds | 781,600 | LBS |

Report No. PIMS012A 02/27/2014 1:27:19 pm
Data Date & Time: 02/27/2014 1:27:19 pm

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**COMMENTS**

**RAW MATERIALS**

| EFF DATE | MATERIAL_DESCRIPTION | QUANTITY | UNIT |
|---|---|---|---|

**SIC INFORMATION**

| SIC | DESCRIPTION |
|---|---|
| 2816 | Inorganic Pigments |
| 2819 | Industrial Inorganic Chemicals, N.E.C. |
| 2833 | Medicinal Chemicals & Botanical Products |
| 2834 | Pharmaceutical Preparations |
| 2835 | In Vitro & In Vivo Diagnostic Substances |
| 2869 | Industrial Organic Chemicals, N.E. C. |

**PRODUCTS**

| EFF DATE | DESCRIPTION | UNIT | AVG_PROD | MAX_PROD |
|---|---|---|---|---|
| 05/07/2004 | Industrial chemicals | | | |
| 05/07/2004 | FDA drugs | | | |

**SEWER ACCOUNTS**

Sewer Accounts
1011728100

**WATER CONSUMPTION AND WASTEWATER DISCHARGE**

Start Date = 07/01/2012 12:00:00AM End Date = 12/31/2014 12:59:59PM Wdays Cdays

| Acct. No. | | | Consumption | | | | | Discharge | |
|---|---|---|---|---|---|---|---|---|---|
| 1011728100 | | | CCF's | Gallons | | | | Gal/ Wday | Gal/ Cday |
| 1011728100 | 04/07/2012 | 07/02/2012 | 131,193 | 131,193 | A | 87 | 87 | 87 | |
| 1011728100 | 07/03/2012 | 10/01/2012 | 223,733 | 354,926 | | 91 | 91 | 178 | |
| 1011728100 | 10/02/2012 | 01/07/2013 | 65,744 | 420,670 | | 98 | 98 | 276 | |
| 1011728100 | 01/08/2013 | 03/14/2013 | 80,005 | 500,675 | | 66 | 66 | 342 | |
| 1011728100 | 03/15/2013 | 07/01/2013 | 76,472 | 577,147 | | 109 | 109 | 451 | |
| 1011728100 | 07/02/2013 | 10/07/2013 | 118,037 | 695,184 | | 98 | 98 | 549 | |
| 1011728100 | 10/08/2013 | 12/19/2013 | 103,413 | 798,597 | | 73 | 73 | 622 | |
| RF | 0.96 | Acct. Total | 798,597 | 597,392,083 | | 622 | 622 | 922,020 | 922,020 |
| | | Facility Total | 798,597 | | | | | | |

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | Treatment Area | Bissell Point |
|---|---|---|---|---|
| 01 | Sanitary Or Combined | 17D3 028C | Trunk Sewer | 10 - Salisbury |

**Description** Multiple lines from buildings in Plant 6E, East into 12" line

**Sewer Route** Discharge to Destrehan St and to Salisbury trunk

**SAMPLE POINT NO.** 001 Ordinance **NPDES Outfall No.**

**Description** MH (Gatewell) at foot of Destrahan 100' E of RR

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Sanitary | | 1,000 | GPD | | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 12/1/09 |
| Condensate | from steam generator, Bldg 250 | 10 | Gal/Wk | 10 | Gal/Wk | D | 5/9/12 |
| | **Total Flow Avg =** | **1,010** | | **Max =** | **10** | | |

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | Treatment Area | Bissell Point |
|---|---|---|---|---|
| 02 | Sanitary Or Combined | 17D4 072C | Trunk Sewer | 10 - Salisbury |

**Description** 6" line SW from Building 96 to Salisbury St

**Sewer Route** East on Salisbury across Hall St. in 5' brick sewer to trunk, N to treatment plant

**SAMPLE POINT NO.** 002 Ordinance **NPDES Outfall No.**

**Description** MH 5' S of bldg #96, 30' E of SP 003, (6" pipe from NE, 3' down)

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Sanitary | | 2,200 | GPD | | GPD | D | 12/1/09 |
| | **Total Flow Avg =** | **2,200** | | **Max =** | | | |

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | Treatment Area | Bissell Point |
|---|---|---|---|---|
| 04 | Sanitary Or Combined | 17D4 086C | Trunk Sewer | 10 - Salisbury |

**Description** 6" line West from Bldg 98 to Broadway

**Sewer Route** South on Broadway in 27" pipe to Salisbury, E across Hall St. in 5' brick sewer to trunk, N to treatment plant

**SAMPLE POINT NO.** 080 Combined (Ord/Cat) **NPDES Outfall No.**

**Description** Inlet to sump (double MH) N of building #98

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (CN-no, NH3 exempt) (CWF-no) | 2,500 | GPD | | GPD | R | 12/1/09 |
| Laboratory Waste | | 1,000 | GPD | | GPD | U | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 11/23/10 |
| | **Total Flow Avg =** | **3,500** | | **Max =** | | | |

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | Treatment Area | Bissell Point |
|---|---|---|---|---|
| 05 | Sanitary Or Combined | 17D4 071C | Trunk Sewer | 10 - Salisbury |

**Description** 8" pipe South from Bldg 96 to Salisbury

**Sewer Route** East on Salisbury across Hall St. in 5' brick sewer to trunk, N to treatment plant

**SAMPLE POINT NO.** 005 Ordinance **NPDES Outfall No.**

**Description** MH 5' S of building #96, 30' E of SP 003 (Center pipe, 8" dia., 3' down)

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Non Contact Cooling Water | | 1,000 | GPD | | GPD | D | 12/1/09 |
| Laboratory Waste | R&D waste (including 439 from bldg 96) | 31,000 | GPD | | GPD | D | 12/1/09 |
| | **Total Flow Avg =** | **32,000** | | **Max =** | | | |

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | Treatment Area | Bissell Point |
|---|---|---|---|---|
| 06 | Sanitary Or Combined | 17D4 066C | Trunk Sewer | 10 - Salisbury |

**Description** 15" line from pump station overflow chamber N to Salisbury

**Sewer Route** East on Salisbury across Hall St. in 5' brick sewer to trunk, N to treatment plant

**SAMPLE POINT NO. 008** Ordinance **NPDES Outfall No.**

**Description** Overflow chamber on N side of pump station on W side of building T

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Emergency Bypass | Pump station bypass to Salisbury trunk | 0 | GPD | 1,440,000 | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 12/1/09 |
| | **Total Flow Avg =** | **0** | | **Max =** | **1,440,000** | | |

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | Treatment Area | Bissell Point |
|---|---|---|---|---|
| 10 | Sanitary Or Combined | 17D4 436C | Trunk Sewer | 04 - Interceptor Tunnel |

**Description** 18" line North from neutralization system

**Sewer Route** E to Interceptor Tunnel, N to treatment plant

**SAMPLE POINT NO. 010** Ordinance **NPDES Outfall No.**

**Description** MH w/square lid 50' N of neutralization control building at Hall & Salisbury

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Regeneration/Reject Water | | 86,900 | GPD | | GPD | D | 12/1/09 |
| Boiler Blowdown | | 85,000 | GPD | | GPD | D | 12/1/09 |
| Non-Categorical Process Waste | | 441,792 | GPD | | GPD | D | 12/1/09 |
| Non Contact Cooling Water | | 149,000 | GPD | | GPD | D | 12/1/09 |
| Plant & Equipment Washdown | | 50,000 | GPD | | GPD | D | 12/1/09 |
| Sanitary | | 75,000 | GPD | | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 12/1/09 |
| Laboratory Waste | | 68,000 | GPD | | GPD | D | 12/1/09 |
| Kitchen Waste | | 2,500 | GPD | | GPD | D | 12/1/09 |
| Categorical | 905,912,915,920,927,930,933,936,937,938 | 158,721 | GPD | | GPD | R | 12/18/12 |
| Cooling Tower Blowdown | | 1,224 | GPD | | GPD | D | 12/18/12 |
| | **Total Flow Avg =** | **1,118,137** | | **Max =** | | | |

**SAMPLE POINT NO. 905** Categorical **NPDES Outfall No.**

**Description** MH inside building X, 12' W, 5' S of W door (Total flow out)

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 414 Sub G & H PSES (App A-no) | 100,000 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **100,000** | | **Max =** | | | |

**SAMPLE POINT NO. 912** Ordinance **NPDES Outfall No.**

**Description** Valve on discharge line from outdoor Tank #450 on SE corner of Building 504

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Non-Categorical Process Waste | process waste from bldgs 504/505 | 150,000 | GPD | | GPD | D | 12/1/09 |
| | **Total Flow Avg =** | **150,000** | | **Max =** | | | |

**SAMPLE POINT NO. 915** Categorical **NPDES Outfall No.**

**Description** Valve on E side of T-315 at inside NE corner of bldg 6

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (CN-no, NH3 exempt) | 2,700 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **2,700** | | **Max =** | | | |

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**SAMPLE POINT NO. 920** Categorical **NPDES Outfall No.**

**Description** Valve on discharge line, outside SW corner of diked area E of bldg 512

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (NH3 exempt) - with SP937 | 13,000 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **13,000** | | **Max =** | | | |

**SAMPLE POINT NO. 927** Categorical **NPDES Outfall No.**

**Description** Tank 308 (acid press tank) in bldg 6

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub B PSES | 2,700 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **2,700** | | **Max =** | | | |

**SAMPLE POINT NO. 930** Categorical **NPDES Outfall No.**

**Description** Valve on 4" PVC line inside NW corner of Bldg. 222S, only when sump is discharging from tanks 300 and 355

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub B PSES | 1,800 | GPD | | GPD | R | 7/1/12 |
| | **Total Flow Avg =** | **1,800** | | **Max =** | | | |

**SAMPLE POINT NO. 933** Categorical **NPDES Outfall No.**

**Description** Valve on Tank #1 10' NW of SE corner of Bldg. 200W - only when disch. 439 waste

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub B PSES | 100 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **100** | | **Max =** | | | |

**SAMPLE POINT NO. 936** Categorical **NPDES Outfall No.**

**Description** Valve on 1/2" line 1' from hydrogenerator bldg 8' from S wall in SE corner of bldg 260

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (CN-no, NH3 exempt) | 16,500 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **16,500** | | **Max =** | | | |

**SAMPLE POINT NO. 937** Categorical **NPDES Outfall No.**

**Description** Valve on 2nd level on W side near pipe bridge N of bldg 501

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (NH3 exempt) - with SP937 | 23,000 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **23,000** | | **Max =** | | | |

**SAMPLE POINT NO. 938** Categorical **NPDES Outfall No.**

**Description** 6" floor drain in far SW corner of room in Building 5, Room 406

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub D PSNS | 71 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **71** | | **Max =** | | | |

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | | Treatment Area | Bissell Point |
|---|---|---|---|---|---|
| 12 | Sanitary Or Combined | 17D3 | 016C | Trunk Sewer | 10 - Salisbury |

**Description** Line flowing NE under bldg 223 to pump station (Plant 5 overflow)

**Sewer Route** NE, parallel to Destrehan Street under bldg 223, across Hall Street to pump station, N along Hall St. to STP

**SAMPLE POINT NO. 011** Ordinance **NPDES Outfall No.**

**Description** MH with square lid 18' S from NW corner of bldg 223 under iron ladder

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Emergency Bypass | Overflow from Plant 5 | 0 | GPD | 14,000 | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 12/1/09 |
| | **Total Flow Avg =** | **0** | | **Max =** | **14,000** | | |

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

### CONNECTION and SAMPLE POINT INFORMATION

| LATERAL NO. | Lateral Type | DSMH | Treatment Area | Bissell Point |
|---|---|---|---|---|
| 99 | Sanitary Or Combined | 17D4 080C | Trunk Sewer | 10 - Salisbury |

**Description** Multiple lines from buildings located West of N 2nd St to Salisbury

**Sewer Route** East on Salisbury across Hall St. in 5' brick sewer to trunk, N to treatment plant

**SAMPLE POINT NO. 003** Ordinance **NPDES Outfall No.**

**Description** MH in alley at Salisbury, 12' W, 3' S of NW corner of building 91

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Non-Categorical Process Waste | Machine shop, painting, parts washing | 4,142 | GPD | | GPD | D | 12/1/09 |
| Sanitary | | 5,000 | GPD | | GPD | D | 12/1/09 |
| Laboratory Waste | 439 Sub E NA (No Stds) & non-439 R&D | 9,000 | GPD | | GPD | D | 12/1/09 |
| Flow From Upstream Sample Pt | SP 009 | 11,000 | GPD | | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 11/23/10 |
| | **Total Flow Avg =** | **29,142** | | **Max =** | | | |

**SAMPLE POINT NO. 009** Ordinance **NPDES Outfall No.**

**Description** MH in Mallinckrodt St 27' E of Broadway, 4' from S curb

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Flow From Offsite | Offsite W of Broadway | 11,000 | GPD | | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 11/23/10 |
| | **Total Flow Avg =** | **11,000** | | **Max =** | | | |

**SAMPLE POINT NO. 099** Dummy Point **NPDES Outfall No.**

**Description** No sample point available (Represents WW contributions between upstream SP 009 & downstream SP 003)

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Non-Categorical Process Waste | | 4,142 | GPD | | GPD | D | 12/1/09 |
| Sanitary | | 5,000 | GPD | | GPD | D | 12/1/09 |
| Laboratory Waste | | 9,000 | GPD | | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 11/23/10 |
| | **Total Flow Avg =** | **18,142** | | **Max =** | | | |

### PRETREATMENT TYPES

| SP | EFF DATE | TYPE | DESCRIPTION |
|---|---|---|---|
| 003 | 12/01/2009 | DC35 | Oil/Water Interceptor |
| 005 | 11/05/1998 | DC37 | pH Adjustment/Neutralization |
| 010 | 11/21/2008 | DC35 | Oil/Water Interceptor |
| 010 | 11/05/1998 | DC37 | pH Adjustment/Neutralization |
| 080 | 11/05/1998 | DC37 | pH Adjustment/Neutralization |
| 809 | 10/16/1998 | DC9 | Clarification/Settling |
| 809 | 10/16/1998 | DC7 | Chemical Precipitation |
| 809 | 10/16/1998 | DC43 | Ultrafiltration |
| 809 | 10/16/1998 | DC5 | Carbon Absorption |
| 905 | 12/18/2013 | DC24 | Filter Press |
| 905 | 12/18/2013 | DC7 | Chemical Precipitation |
| 905 | 12/18/2013 | DC37 | pH Adjustment/Neutralization |
| 912 | 12/01/2009 | DC37 | pH Adjustment/Neutralization |
| 920 | 02/28/2002 | DC42 | Steam Stripping |
| 927 | 12/18/2013 | DC38 | Pressure Filters |
| 930 | 12/01/2009 | DC37 | pH Adjustment/Neutralization |
| 933 | 12/01/2009 | DC37 | pH Adjustment/Neutralization |
| 937 | 06/26/2007 | DC42 | Steam Stripping |

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**PRIORITY POLLUTANTS**

| Pollutant Description | Status | Pollutant Description | Status | Pollutant Description | Status |
|---|---|---|---|---|---|
| Cyanide (Total) | KP | Asbestos (Fibrous) | KP | Antimony (Total) | SP |
| Silver (Total) | SP | Copper (Total) | KP | Cadmium (Total) | KP |
| Zinc (Total) | KP | Nickel (Total) | KP | Mercury (Total) | KP |
| Lead (Total) | KP | Chromium (Total) | KP | Arsenic (Total) | SP |
| Phenol | KP | Dimethyl Phthalate | KP | 4-Nitrophenol | SP |
| 2,4-Dinitrophenol | SP | 2-Chlorophenol | SP | Nitrobenzene | SP |
| Hexachlorocyclopentadiene | SP | Benzo (A) Pyrene | SP | Benzidine | SP |
| Acrolein | KP | Toluene | KP | Methylene Chloride | KP |
| Chloromethane | KP | Chlorobenzene | KP | 1,3-Dichlorobenzene | SP |
| 1,1,1-Trichloroethane | KP | Vinyl Chloride | KP | Tetrachloroethene | KP |
| Chloroform | KP | Carbon Tetrachloride | KP | Bromomethane | SP |
| Benzene | KP | 1,2-Dichloroethane | SP | 1,1,2-Trichloroethane | KP |
| 2,4-Dimethylphenol | SP | 2,4-Dinitrotoluene | SP | 2,4-Dichlorophenol | SP |
| 2-Nitrophenol | SP | Phenanthrene | SP | N-Nitrosodimethylamine | SP |
| Hexachloroethane | SP | Hexachlorobutadiene | SP | Diethyl Phthalate | SP |
| Dieldrin | SP | Bis (2-EthylHexyl) Phthalate | KP | Dibromochloromethane | SP |
| Bromodichloromethane | SP | 1,2-Dichlorobenzene | SP | Trichloroethene | KP |
| Ethylbenzene | KP | 1,4-Dichlorobenzene | SP | 1,1,2,2-Tetrachloroethane | KP |

**EXTRA STRENGTH SURCHARGE INFORMATION**

| | | |
|---|---|---|
| 09/30/2013 | BOD | 520 |
| 09/30/2013 | COD | 1,039 |
| 09/30/2013 | TSS | 112 |

# PIMS FACILITY CONTACTS

For Account Number Selected **1011728100** **MALLINCKRODT LLC**
Located at 3600 N 2nd St
St. Louis MO 63147

| Address Type / Contact Type | Contact Name | Contact Title | Email | Signatory | Phone Type | Number | Ext. |
|---|---|---|---|---|---|---|---|
| **Billing Address** | | | | | | | |
| Billing Contact | Brett Shank | Environmental Manager | | N | CELL | (314)724-4157 | |
| Billing Contact | Brett Shank | Environmental Manager | | N | OFF | (314)654-0002 | |
| **Office Mailing Address** | | | | | | | |
| Corporate Contact - Primary | Dexter Evans | Senior Site Director | | Y | OFF | (314)654-1300 | |
| Office Contact - Primary | Brett Shank | Environmental Manager | | N | CELL | (314)724-4157 | |
| Office Contact - Primary | Brett Shank | Environmental Manager | | N | OFF | (314)654-0002 | |
| Office Contact 1st Alt | Jada Wilhelm | Environmental Manager | | N | OFF | (314)654-0149 | |
| **Premise Address** | | | | | | | |
| Field Contact - Primary | Brett Shank | Environmental Manager | Brett.Shank@mallinckrodt.com | N | CELL | (314)724-4157 | |
| Field Contact - Primary | Brett Shank | Environmental Manager | Brett.Shank@mallinckrodt.com | N | FAX | (314)654-1251 | |
| Field Contact - Primary | Brett Shank | Environmental Manager | Brett.Shank@mallinckrodt.com | N | OFF | (314)654-0002 | |
| Field Contact - Primary | Brett Shank | Environmental Manager | Brett.Shank@mallinckrodt.com | N | SWR | (314)654-2000 | |
| Field Contact 1st Alt | Jada Wilhelm | Environmental Manager | | N | OFF | (314)654-0149 | |



MSD 013543

# PIMS
## REPORT OF FIELD SAMPLING REQUIREMENTS
## MALLINCKRODT LLC

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | CITY | ST | ZIP |
|---|---|---|---|---|
| | 3600 N 2nd St | St. Louis | MO | 63147 |

### 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/3 mo | Grab (Auth in lieu of composite) | 03/31/2014 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Grab (Auth in lieu of composite) | 03/31/2014 |
| | T237000 | pH | Once/3 mo | Grab | 03/31/2014 |
| | T247000 | Temperature | Once/3 mo | Grab | 03/31/2014 |
| | T256000 | Total Suspended Solids | Once/3 mo | Grab (Auth in lieu of composite) | 03/31/2014 |

### 002 Project Code: IM = IPD - Company - MSD

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T208000 | Biochemical Oxygen Demand (5 Day) | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T225000 | Iron (Total) | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T237000 | pH | Once/3 mo | Grab | 03/31/2014 |
| | T247000 | Temperature | Once/3 mo | Grab | 03/31/2014 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |

### 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/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 03/31/2014 |
| | T237000 | pH | Once/3 mo | Grab | 03/31/2014 |
| | T247000 | Temperature | Once/3 mo | Grab | 03/31/2014 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T299000 | Acrolein | Once/year | Grab | 06/30/2014 |
| | T300000 | Acrylonitrile | Once/year | Grab | 06/30/2014 |
| Pesticide Organics | T993000 | Pesticide Organics (except Dazomet) | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Semi-Volatile Organics - Base/Neutrals | T994000 | Semi-Volatile Organics - Base/Neutrals | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Semi-Volatile Organics - Acids | T995000 | Semi-Volatile Organics - Acids | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Volatile Organics | T996000 | Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl | Once/year | Grab | 06/30/2014 |

### 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/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T237000 | pH | Once/3 mo | Grab | 03/31/2014 |
| | T247000 | Temperature | Once/3 mo | Grab | 03/31/2014 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T340000 | Cyanide Amenable to Chlorination | Once/3 mo | Grab | 03/31/2014 |
| | T299000 | Acrolein | Once/year | Grab | 06/30/2014 |
| | T300000 | Acrylonitrile | Once/year | Grab | 06/30/2014 |
| Pesticide Organics | T993000 | Pesticide Organics (except Dazomet) | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Semi-Volatile Organics - Base/Neutrals | T994000 | Semi-Volatile Organics - Base/Neutrals | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Semi-Volatile Organics - Acids | T995000 | Semi-Volatile Organics - Acids | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Volatile Organics | T996000 | Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl | Once/year | Grab | 06/30/2014 |

### 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/3 mo | Comp-Time 04 Hrs | 03/31/2014 |

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | | CITY | ST | ZIP |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 03/31/2014 |
| | T237000 | pH | Once/3 mo | Grab | 03/31/2014 |
| | T247000 | Temperature | Once/3 mo | Grab | 03/31/2014 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |

**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/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 03/31/2014 |
| | T237000 | pH | Once/3 mo | Grab | 03/31/2014 |
| | T247000 | Temperature | Once/3 mo | Grab | 03/31/2014 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T299000 | Acrolein | Once/year | Grab | 06/30/2014 |
| | T300000 | Acrylonitrile | Once/year | Grab | 06/30/2014 |
| Pesticide Organics | T993000 | Pesticide Organics (except Dazomet) | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Semi-Volatile Organics - Base/Neutrals | T994000 | Semi-Volatile Organics - Base/Neutrals | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Semi-Volatile Organics - Acids | T995000 | Semi-Volatile Organics - Acids | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Volatile Organics | T996000 | Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl | Once/year | Grab | 06/30/2014 |

**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/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 03/31/2014 |
| | T237000 | pH | Once/3 mo | Grab | 03/31/2014 |
| | T247000 | Temperature | Once/3 mo | Grab | 03/31/2014 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T299000 | Acrolein | Once/year | Grab | 06/30/2014 |
| | T300000 | Acrylonitrile | Once/year | Grab | 06/30/2014 |
| | T335000 | Chromium (Total) | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| | T339000 | Copper (Total) | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| | T377000 | Nickel (Total) | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| | T403000 | Zinc (Total) | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Pesticide Organics | T993000 | Pesticide Organics (except Dazomet) | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Semi-Volatile Organics - Base/Neutrals | T994000 | Semi-Volatile Organics - Base/Neutrals | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Semi-Volatile Organics - Acids | T995000 | Semi-Volatile Organics - Acids | Once/year | Comp-Time 04 Hrs | 06/30/2014 |
| Volatile Organics | T996000 | Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl | Once/year | Grab | 06/30/2014 |

**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/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 03/31/2014 |
| | T237000 | pH | Once/3 mo | Grab | 03/31/2014 |
| | T247000 | Temperature | Once/3 mo | Grab | 03/31/2014 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |

**080 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T208000 | Biochemical Oxygen Demand (5 Day) | Once/3 mo | Comp-Time 04 Hrs | 03/31/2014 |

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | | CITY | ST | ZIP | |
|---|---|---|---|---|---|---|
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | | 03/31/2014 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | | 03/31/2014 |
| | T237000 | pH | Once/3 mo | Grab | | 03/31/2014 |
| | T247000 | Temperature | Once/3 mo | Grab | | 03/31/2014 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | | 03/31/2014 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | | 06/30/2014 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | | 06/30/2014 |
| | T299000 | Acrolein | Once/year | Grab | | 06/30/2014 |
| | T300000 | Acrylonitrile | Once/year | Grab | | 06/30/2014 |
| | T309000 | Benzene | Once/year | Grab | | 06/30/2014 |
| | T330000 | Chlorobenzene | Once/year | Grab | | 06/30/2014 |
| | T332000 | Chloroform | Once/year | Grab | | 06/30/2014 |
| | T340000 | Cyanide Amenable to Chlorination | Once/year | Grab | | 06/30/2014 |
| | T341000 | Cyanide (Total) | Once/year | Grab | | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | | 06/30/2014 |
| | T397000 | Toluene | Once/year | Grab | | 06/30/2014 |
| | T430000 | Acetone | Once/year | Grab | | 06/30/2014 |
| | T435000 | Xylene | Once/year | Grab | | 06/30/2014 |
| | T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | | 06/30/2014 |
| | T438000 | Isobutyraldehyde | Once/year | Grab | | 06/30/2014 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | | 06/30/2014 |
| | T440000 | n-Butyl Acetate | Once/year | Grab | | 06/30/2014 |
| | T441000 | Ethyl Acetate | Once/year | Grab | | 06/30/2014 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | | 06/30/2014 |
| | T443000 | Methyl Formate | Once/year | Grab | | 06/30/2014 |
| | T445000 | Isopropyl Ether | Once/year | Grab | | 06/30/2014 |
| | T446000 | Tetrahydrofuran | Once/year | Grab | | 06/30/2014 |
| | T447000 | n-Hexane | Once/year | Grab | | 06/30/2014 |
| | T448000 | n-Heptane | Once/year | Grab | | 06/30/2014 |
| | T449000 | Diethylamine | Once/year | Grab | | 06/30/2014 |
| | T550000 | Triethylamine | Once/year | Grab | | 06/30/2014 |
| Pesticide Organics | T993000 | Pesticide Organics (except Dazomet) | Once/year | Comp-Time 04 Hrs | | 06/30/2014 |
| Semi-Volatile Organics - Base/Neutrals | T994000 | Semi-Volatile Organics - Base/Neutrals | Once/year | Comp-Time 04 Hrs | | 06/30/2014 |
| Semi-Volatile Organics - Acids | T995000 | Semi-Volatile Organics - Acids | Once/year | Comp-Time 04 Hrs | | 06/30/2014 |
| Volatile Organics | T996000 | Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl | Once/year | Grab | | 06/30/2014 |

**905 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2014 |
| | T263000 | (cis & trans) 1,3-Dichloropropene | Once/year | Grab | 06/30/2014 |
| | T264000 | 1,1-Dichloroethane | Once/year | Grab | 06/30/2014 |
| | T265000 | 1,1-Dichloroethene | Once/year | Grab | 06/30/2014 |
| | T266000 | 1,1,1-Trichloroethane | Once/year | Grab | 06/30/2014 |
| | T267000 | 1,1,2-Trichloroethane | Once/year | Grab | 06/30/2014 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2014 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2014 |
| | T271000 | 1,2-Dichloropropane | Once/year | Grab | 06/30/2014 |
| | T273000 | 1,2,4-Trichlorobenzene | Once/year | Grab | 06/30/2014 |
| | T274000 | 1,3-Dichlorobenzene | Once/year | Grab | 06/30/2014 |
| | T275000 | 1,4-Dichlorobenzene | Once/year | Grab | 06/30/2014 |
| | T276000 | 2-Nitrophenol | Once/year | Grab | 06/30/2014 |
| | T288000 | 4-Nitrophenol | Once/year | Grab | 06/30/2014 |
| | T295000 | 4,6-Dinitro-2-Methylphenol | Once/year | Grab | 06/30/2014 |
| | T297000 | Acenaphthene | Once/year | Grab | 06/30/2014 |
| | T302000 | Anthracene | Once/year | Grab | 06/30/2014 |
| | T309000 | Benzene | Once/year | Grab | 06/30/2014 |

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | | CITY | ST | ZIP | |
|---|---|---|---|---|---|---|
| | T310000 | Benzidine | Once/year | Grab | | 06/30/2014 |
| | T321000 | Bis (2-EthylHexyl) Phthalate | Once/year | Grab | | 06/30/2014 |
| | T328000 | Carbon Tetrachloride | Once/year | Grab | | 06/30/2014 |
| | T330000 | Chlorobenzene | Once/year | Grab | | 06/30/2014 |
| | T331000 | Chloroethane | Once/year | Grab | | 06/30/2014 |
| | T332000 | Chloroform | Once/year | Grab | | 06/30/2014 |
| | T333000 | Chloromethane | Once/year | Grab | | 06/30/2014 |
| | T343000 | Di-n-butyl Phthalate | Once/year | Grab | | 06/30/2014 |
| | T348000 | Diethyl Phthalate | Once/year | Grab | | 06/30/2014 |
| | T349000 | Dimethyl Phthalate | Once/year | Grab | | 06/30/2014 |
| | T355000 | Ethylbenzene | Once/year | Grab | | 06/30/2014 |
| | T356000 | Fluoranthene | Once/year | Grab | | 06/30/2014 |
| | T357000 | Fluorene | Once/year | Grab | | 06/30/2014 |
| | T361000 | Hexachlorobenzene | Once/year | Grab | | 06/30/2014 |
| | T362000 | Hexachlorobutadiene | Once/year | Grab | | 06/30/2014 |
| | T364000 | Hexachloroethane | Once/year | Grab | | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | | 06/30/2014 |
| | T375000 | Naphthalene | Once/year | Grab | | 06/30/2014 |
| | T378000 | Nitrobenzene | Once/year | Grab | | 06/30/2014 |
| | T387000 | Phenanthrene | Once/year | Grab | | 06/30/2014 |
| | T389000 | Pyrene | Once/year | Grab | | 06/30/2014 |
| | T394000 | Tetrachloroethene | Once/year | Grab | | 06/30/2014 |
| | T397000 | Toluene | Once/year | Grab | | 06/30/2014 |
| | T399000 | Trans-1,2-Dichloroethene | Once/year | Grab | | 06/30/2014 |
| | T400000 | Trichloroethene | Once/year | Grab | | 06/30/2014 |
| | T401000 | Vinyl Chloride | Once/year | Grab | | 06/30/2014 |

**912 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2014 |
| | T553000 | N,N-Dimethyl Acetamide | Once/year | Grab | 06/30/2014 |

**915 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2014 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2014 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2014 |
| | T309000 | Benzene | Once/year | Grab | 06/30/2014 |
| | T330000 | Chlorobenzene | Once/year | Grab | 06/30/2014 |
| | T332000 | Chloroform | Once/year | Grab | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2014 |
| | T397000 | Toluene | Once/year | Grab | 06/30/2014 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2014 |
| | T435000 | Xylene | Once/year | Grab | 06/30/2014 |
| | T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | 06/30/2014 |
| | T438000 | Isobutyraldehyde | Once/year | Grab | 06/30/2014 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2014 |
| | T440000 | n-Butyl Acetate | Once/year | Grab | 06/30/2014 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2014 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2014 |
| | T443000 | Methyl Formate | Once/year | Grab | 06/30/2014 |
| | T445000 | Isopropyl Ether | Once/year | Grab | 06/30/2014 |
| | T446000 | Tetrahydrofuran | Once/year | Grab | 06/30/2014 |
| | T447000 | n-Hexane | Once/year | Grab | 06/30/2014 |
| | T448000 | n-Heptane | Once/year | Grab | 06/30/2014 |
| | T449000 | Diethylamine | Once/year | Grab | 06/30/2014 |

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | CITY | ST | ZIP |
|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| | T550000 | Triethylamine | Once/year | Grab | 06/30/2014 |

**920 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2014 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2014 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2014 |
| | T309000 | Benzene | Once/year | Grab | 06/30/2014 |
| | T330000 | Chlorobenzene | Once/year | Grab | 06/30/2014 |
| | T332000 | Chloroform | Once/year | Grab | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2014 |
| | T397000 | Toluene | Once/year | Grab | 06/30/2014 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2014 |
| | T435000 | Xylene | Once/year | Grab | 06/30/2014 |
| | T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | 06/30/2014 |
| | T438000 | Isobutyraldehyde | Once/year | Grab | 06/30/2014 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2014 |
| | T440000 | n-Butyl Acetate | Once/year | Grab | 06/30/2014 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2014 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2014 |
| | T443000 | Methyl Formate | Once/year | Grab | 06/30/2014 |
| | T445000 | Isopropyl Ether | Once/year | Grab | 06/30/2014 |
| | T446000 | Tetrahydrofuran | Once/year | Grab | 06/30/2014 |
| | T447000 | n-Hexane | Once/year | Grab | 06/30/2014 |
| | T448000 | n-Heptane | Once/year | Grab | 06/30/2014 |
| | T449000 | Diethylamine | Once/year | Grab | 06/30/2014 |
| | T550000 | Triethylamine | Once/year | Grab | 06/30/2014 |

**927 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2014 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2014 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2014 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2014 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2014 |

**930 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2014 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2014 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2014 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2014 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2014 |

**933 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2014 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2014 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2014 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2014 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2014 |

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | CITY | ST | ZIP |
|---|---|---|---|---|

**935 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2014 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2014 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2014 |
| | T309000 | Benzene | Once/year | Grab | 06/30/2014 |
| | T330000 | Chlorobenzene | Once/year | Grab | 06/30/2014 |
| | T332000 | Chloroform | Once/year | Grab | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2014 |
| | T397000 | Toluene | Once/year | Grab | 06/30/2014 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2014 |
| | T435000 | Xylene | Once/year | Grab | 06/30/2014 |
| | T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | 06/30/2014 |
| | T438000 | Isobutyraldehyde | Once/year | Grab | 06/30/2014 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2014 |
| | T440000 | n-Butyl Acetate | Once/year | Grab | 06/30/2014 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2014 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2014 |
| | T443000 | Methyl Formate | Once/year | Grab | 06/30/2014 |
| | T445000 | Isopropyl Ether | Once/year | Grab | 06/30/2014 |
| | T446000 | Tetrahydrofuran | Once/year | Grab | 06/30/2014 |
| | T447000 | n-Hexane | Once/year | Grab | 06/30/2014 |
| | T448000 | n-Heptane | Once/year | Grab | 06/30/2014 |
| | T449000 | Diethylamine | Once/year | Grab | 06/30/2014 |
| | T550000 | Triethylamine | Once/year | Grab | 06/30/2014 |

**936 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2014 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2014 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2014 |
| | T309000 | Benzene | Once/year | Grab | 06/30/2014 |
| | T330000 | Chlorobenzene | Once/year | Grab | 06/30/2014 |
| | T332000 | Chloroform | Once/year | Grab | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2014 |
| | T397000 | Toluene | Once/year | Grab | 06/30/2014 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2014 |
| | T435000 | Xylene | Once/year | Grab | 06/30/2014 |
| | T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | 06/30/2014 |
| | T438000 | Isobutyraldehyde | Once/year | Grab | 06/30/2014 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2014 |
| | T440000 | n-Butyl Acetate | Once/year | Grab | 06/30/2014 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2014 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2014 |
| | T443000 | Methyl Formate | Once/year | Grab | 06/30/2014 |
| | T445000 | Isopropyl Ether | Once/year | Grab | 06/30/2014 |
| | T446000 | Tetrahydrofuran | Once/year | Grab | 06/30/2014 |
| | T447000 | n-Hexane | Once/year | Grab | 06/30/2014 |
| | T448000 | n-Heptane | Once/year | Grab | 06/30/2014 |
| | T449000 | Diethylamine | Once/year | Grab | 06/30/2014 |
| | T550000 | Triethylamine | Once/year | Grab | 06/30/2014 |

**937 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | | CITY | ST | ZIP | |
|---|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | | 06/30/2014 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | | 06/30/2014 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | | 06/30/2014 |
| | T309000 | Benzene | Once/year | Grab | | 06/30/2014 |
| | T330000 | Chlorobenzene | Once/year | Grab | | 06/30/2014 |
| | T332000 | Chloroform | Once/year | Grab | | 06/30/2014 |
| | T341000 | Cyanide (Total) | Once/year | Grab | | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | | 06/30/2014 |
| | T397000 | Toluene | Once/year | Grab | | 06/30/2014 |
| | T430000 | Acetone | Once/year | Grab | | 06/30/2014 |
| | T435000 | Xylene | Once/year | Grab | | 06/30/2014 |
| | T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | | 06/30/2014 |
| | T438000 | Isobutyraldehyde | Once/year | Grab | | 06/30/2014 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | | 06/30/2014 |
| | T440000 | n-Butyl Acetate | Once/year | Grab | | 06/30/2014 |
| | T441000 | Ethyl Acetate | Once/year | Grab | | 06/30/2014 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | | 06/30/2014 |
| | T443000 | Methyl Formate | Once/year | Grab | | 06/30/2014 |
| | T445000 | Isopropyl Ether | Once/year | Grab | | 06/30/2014 |
| | T446000 | Tetrahydrofuran | Once/year | Grab | | 06/30/2014 |
| | T447000 | n-Hexane | Once/year | Grab | | 06/30/2014 |
| | T448000 | n-Heptane | Once/year | Grab | | 06/30/2014 |
| | T449000 | Diethylamine | Once/year | Grab | | 06/30/2014 |
| | T550000 | Triethylamine | Once/year | Grab | | 06/30/2014 |

**938 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2014 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2014 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2014 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2014 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2014 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2014 |

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

MALLINCKRODT LLC
3600 N. 2nd St.
St. Louis, MO 63147

Attn: Brett Shank
Environmental Manager

**INDUSTRIAL WASTEWATER DISCHARGE PERMIT NUMBER 1011728100.**

# ANNUAL PERMIT FEE NOTICE

For permits in effect as of 10/01/2013.

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, 2013 through September 30, 2014 issued in accordance with the Metropolitan St. Louis District Ordinance #12413 for the location at **3600 N 2nd St.**

| | | | |
|---|---|---|---|
| Base charge @ $150.00 per permit | | | $150.00 |
| Volume charge @ $0.72 per average daily Ccf | 1,616.18 | Ccf(s) | $1,163.65 |
| Sample Point Charge @ $100.00 per sample point | 19 | Point(s) | $1,900.00 |
| | | **Total Fee Due:** | **$3,213.65** |

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 IN A SEPARATE BILL

Mallinckrodt

**TO:** Chris Verplancke - Finance Department

**FROM:** Steven M. Grace – DEC SMG

**DATE:** November 5, 2013

**RE:** **Wastewater User Charge Billing for Special Discharge**

Please bill, by invoice, the following charges applicable to an on-site special discharge approved in our letter dated October 30, 1998, as modified in letters dated November 20, 1998, July 19, 1999, March 28, 2001, October 13, 2004, June 19, 2006, May 22, 2008, May 10, 2010, and May 24, 2012. The discharge dates and quantity are from information submitted by Sharon Cotner, Corps of Engineers, in a letter dated October 31, 2013.

This charge is based on the rates in MSD Wastewater User Charge Ordinance 13042. Please note that, as of July 1, 2013, the volume charge of $2.50 per 100 cubic feet of wastewater became effective.

**PARTY TO BILL:** **Larry Joellenbeck**
**The Shaw Group Inc.**
**1 Angelrodt Street**
**St. Louis, MO 63147**

**BILLING IS FOR:** **On-Site Special Discharge**

**DISCHARGE PERIOD:** **July through September 2013**

**SOURCE OF WASTE:** **Treated construction water from the St. Louis Downtown FUSRAP Site located at Mallinckrodt, Inc., 3600 N. Second Street, St. Louis, Missouri.**

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| 7/1/13 - 9/30/13 | Volume | 1,123 | CcF | $2.50 | $2,807.50 |
| Totals: | --- | 1,123 | CcF | --- | $2,807.50 |

If you have any questions, please call me on extension 8755.

bv

ec: Cynthia Chalk – Finance Dept.
Mary Wimsatt – Finance Dept.
Laura Joiner – Finance Dept.
Brian Gibson
Doug Mendoza
Larry Joellenbeck, The Shaw Group Inc., 1 Angelrodt St., St. Louis, MO 63147

File: IU, MALLINCKRODT INC [1011728100]

Mallinckrodt
Pharmaceuticals

SR
10/30

October 22, 2013

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

Re: 2013 3rd Quarter Self-Monitoring Report for Permit No. 1011728100-1.1

Dear Mr. Mendoza,

Please find enclosed the 2013 3rd Quarter Self-Monitoring report for Mallinckrodt Inc.

The following sample points received no pharmaceutical process water flow during the second quarter: SP080 and SP930.

During this quarter we had two, separate, unplanned power outages on August 7th and September 24th, that caused the two lift station outfalls SP008 and SP011 to overflow directly to MSD. Samples were taken and analyzed and are included in this report as well as pH readings during the overflow events.

Our planned electrical shut down occurred on Friday September 27th through Monday September 30th. As stated in our letter to you dated September 18th, 2013, the two lift station outfalls SP008 and SP011 overflowed directly to MSD during this time. Samples were taken and analyzed and are included in this report as well as pH readings during the overflow event for September 27th, 28th, 29th and 30th.

Also stated in the September 18th, 2013 letter was that we would be completing a sewer project in the alley way between Mallinckrodt and Destrehan Streets and diverting a portion of the flow from the lift station at SP008 and SP011 to a MSD sewer. Samples were not required for this overflow. pH readings and flow for this overflow are included in this report with the Sample Point 008 & 011 report.

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

COVIDIEN/MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

Mallinckrodt Pharmaceuticals

If you have any questions or require more detailed information, please contact me at 314-654-0127.

Sincerely,

Amber Crouch

Amber Crouch
Sr. Environmental Specialist

ENCLOSURES

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COVIDIEN/MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

METROPOLITAN ST LOUIS SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT LLC**

Permit No: 1011728100-1.1

Premise Address: 3600 North Second Street, St. Louis, MO 63147

Reporting Period: ☐ JAN-MAR ☐ APR-JUN ☒ JUL-SEP ☐ OCT-DEC

**PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER SYSTEM**

| RADIONUCLIDE | ACTIVITY DISCHARGED (millicuries) |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
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| | |
| | |
| | |
| TOTAL ACTIVITY DISCHARGED: | **No activity recorded this period.** |

**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 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.

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

Print/type name of signing official: James A. Walter

Title: Senior Director of Manufacturing

Telephone: 314-654-1300

Signature:

Date: 10/25/13

## 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**.

| | |
|---|---|
| A | NO CHANGE IN WASTEWATER DISCHARGE AT SAMPLE POINTS WITH NO MONITORING REQUIRED |
| | For permit special conditions that waive monitoring at any sample point(s) specified in your permit, you are required to make the following certification for each report in which monitoring is waived:<br>_____ I certify, since the last discharge monitoring report, there has been no change in the character of the wastes discharged at sample points **001 and 002**.<br>_____ I certify, since the last discharge monitoring report, there has been no discharge from sample points **008 and 011**. |
| B | NO CHANGE IN WASTEWATER DISCHARGE AT ACTIVE CONNECTIONS WITHOUT SAMPLE POINTS |
| | For permit special conditions that waive monitoring at active connection points which are not specified as sample points in your permit, you are required to make the following certification:<br>_____ I certify, since the last discharge monitoring report, there has been no change in the character of wastes discharged at those active connection points which are not specified in my permit. |
| E | NO DISCHARGE OF CATEGORICAL WASTE |
| | For permit special conditions that prohibit discharge of wastes which are subject to certain categorical pretreatment standards, you are required to make the following certification:<br>_____ I certify, since the last discharge monitoring report, there has been no discharge of wastes which are subject to pretreatment standards in 40 CFR 414 (except for those wastes conveyed by Sample Point **905**). |
| F | CYANIDE NOT USED OR GENERATED IN 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from limitations and monitoring for Total Cyanide at the Pharmaceutical sample points **080, 915, and 936,** subject to the following certification:<br>_____ I certify, since the last discharge monitoring report, cyanide has not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. |
| H | CATEGORICAL POLLUTANTS NOT USED OR GENERATED IN CATEGORICAL OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants at the Pharmaceutical sample points **915 and 936,** subject to the following certification:<br>_____ I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, have not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. In addition, the above-referenced report remains valid. |
| I | SURROGATE MONITORING ALLOWED FOR 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants, and replaced by monitoring for surrogate pollutant(s), at the Pharmaceutical sample points **920 and 937** subject to the following certification:<br>_____ I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, continue to receive the same degree of treatment as the surrogate pollutant(s). In addition, the above-referenced report remains valid. |

## PART IV: GENERAL CERTIFICATION STATEMENTS

| | |
|---|---|
| B | DISCHARGE MONITORING REPORT CERTIFICATION |
| | **All permittees must sign and complete the information below:**<br>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.<br>Print or type name of signing official: James A. Walter<br>Title: Senior Director of Manufacturing Telephone: 314-654-1300<br>Signature: _____ Date: 10/25/13 |

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) ____(APR-JUNE) _X___(JULY-SEPT) _____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **001** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | | UNITS |
| FLOW | | E | 1,000 | | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | | |

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ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2032 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) _____(APR-JUNE) _X___(JULY-SEPT) __(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **002** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | | UNITS |
| FLOW | | E | 2,200 | | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) _X___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **003** | | **009** | | **099** | |
|---|---|---|---|---|---|---|---|---|
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 7/12/2013 | | 7/12/2013 | | calculated | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0710, 0810, 0910, 1010 | | 0735, 0835, 0935, 1035 | | n/a | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | M | 37,325 | M | 17,798 | E | 19,527 | gal/day |
| Oil & Grease | 200 | G | 6 | G | 5 | E | 7 | mg/l |
| Biochemical Oxygen Demand | **** | C | 145 | C | 286 | E | 16 | mg/l |
| Chemical Oxygen Demand | **** | C | 369 | C | 541 | E | 212 | mg/l |
| Total Suspended Solids | **** | C | 198 | C | 47 | E | 336 | mg/l |
| Temperature | **** | G | 20 | G | 18.3 | E | 19 | deg C |
| pH | **** | G | 7.0 | G | 7.0 | E | 7.0 | S.U. |
| Lab Dilution Factor | | | 1 | | 1 | | | |

**** No limits for SP003 or SP009;
monitoring requirement only for calculation at SP099

* Calculated value was less than zero.

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) _____(APR-JUNE) _X___(JULY-SEPT) _____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

Per phone call with Amber Crouch, the Collection times were: 720, 820, 920, & 1020. SR, 10/30/13

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **005** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 7/12/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0720 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | gal/day |
| Oil & Grease | 200 | G | <5 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 253 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 298 | | | | | mg/l |
| Total Suspended Solids | **** | C | <6 | | | | | mg/l |
| Temperature | 60 | G | 26 | | | | | deg C |
| pH | 5.5 - 11.5 | G | 6.0 | | | | | S.U. |
| **** No limits for SP005 | | | | | | | | |
| Shaded values represent detection limits | | | | | | | | |
| Lab Dilution Factor | | | 1 | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) __X__(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----> | | **008** | | **008** | | **008** | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----> | | 8/7/2013 | | 9/24/2013 | | 9/27/2013 | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----> | | 1300 | | 1330 | | 0710 | |
| | | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** | | | | | | |
| PARAMETER | LIMIT | G=grab,C=composite,M=measured flow,E=estimated fl | | | | | | UNITS |
| FLOW | | E | | | | | ~400 | gal/day |
| Oil & Grease | 200 | G | 2 | | 4 | | 173 | mg/l |
| Biochemical Oxygen Demand | **** | G | 90 | | 29 | | 345 | mg/l |
| Chemical Oxygen Demand | **** | G | 249 | | 70 | | 466 | mg/l |
| Temperature | 60 | G | 20 | | 18.6 | | 21.1 | deg C |
| Total Suspended Solids | **** | G | 20 | | 9 | | 800 | mg/L |
| pH | 5.5 - 11.5 | G | see attached | | see attached | | see attached | S.U. |
| Lab Dilution Factor | | | 1 | | 1 | | 1, 100 | |

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

| Unplanned Power Outage Manual pH Monitoring | | | |
|---|---|---|---|
| Date | 8/7/2013 | | |
| Sample Point | SP008 | | |
| | | | |
| Time | pH | | |
| 1330 | 6.9 | | |
| 1400 | 7 | | |
| 1430 | 6.5 | | |
| 1500 | 6.7 | | |
| | | | |

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| Unplanned Power Outage Manual pH Monitoring | | | |
|---|---|---|---|
| Date | 9/24/2013 | | |
| Sample Point | SP008 | | |
| | | | |
| Time | pH | | |
| 1330 | 6.8 | | |
| 1400 | 7 | | |
| 1430 | 7 | | |
| 1500 | 7.4 | | |
| 1530 | 7.3 | | |

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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Friday, September 27th, 2013 | | |
| Sample Point | SP008 | | |
| | | | |
| Time | pH | Time | pH |
| 0745 | No Flow | 1931 | No Flow |
| 0812 | No Flow | 2001 | No Flow |
| 0837 | No Flow | 2031 | No Flow |
| 0902 | No Flow | 2101 | No Flow |
| 0932 | No Flow | 2131 | No Flow |
| 1002 | No Flow | 2201 | No Flow |
| 1032 | No Flow | 2231 | No Flow |
| 1102 | No Flow | 2301 | No Flow |
| 1132 | No Flow | 2331 | |
| 1202 | No Flow | | |
| 1232 | No Flow | | |
| 1302 | No Flow | | |
| 1332 | No Flow | | |
| 1402 | No Flow | | |
| 1442 | No Flow | | |
| 1502 | No Flow | | |
| 1552 | No Flow | | |
| 1601 | No Flow | | |
| 1631 | No Flow | | |
| 1701 | No Flow | | |
| 1731 | No Flow | | |
| 1801 | No Flow | | |
| 1831 | No Flow | | |
| 1901 | No Flow | | |

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OCT 29 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Saturday, September 28th, 2013 | | |
| Sample Point | SP008 | | |
| | | | |
| Time | pH | Time | pH |
| 0001 | No Flow | 1201 | No Flow |
| 0031 | No Flow | 1231 | No Flow |
| 0101 | No Flow | 1301 | No Flow |
| 0131 | No Flow | 1331 | No Flow |
| 0201 | No Flow | 1401 | No Flow |
| 0231 | No Flow | 1431 | No Flow |
| 0301 | No Flow | 1501 | No Flow |
| 0331 | No Flow | 1531 | No Flow |
| 0401 | No Flow | 1601 | No Flow |
| 0431 | No Flow | 1631 | No Flow |
| 0501 | No Flow | 1701 | No Flow |
| 0531 | No Flow | 1731 | No Flow |
| 0601 | No Flow | 1801 | No Flow |
| 0631 | No Flow | 1831 | No Flow |
| 0701 | No Flow | 1901 | No Flow |
| 0731 | No Flow | 1931 | No Flow |
| 0801 | No Flow | 2001 | No Flow |
| 0831 | No Flow | 2031 | No Flow |
| 0901 | No Flow | 2101 | No Flow |
| 0931 | No Flow | 2131 | No Flow |
| 1001 | No Flow | 2201 | No Flow |
| 1031 | No Flow | 2231 | No Flow |
| 1101 | No Flow | 2301 | No Flow |
| 1131 | No Flow | 2331 | No Flow |

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OCT 29 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Sunday, September 29th, 2013 | | |
| Sample Point | SP008 | | |
| | | | |
| Time | pH | Time | pH |
| 0001 | No Flow | 1201 | No Flow |
| 0031 | No Flow | 1231 | No Flow |
| 0101 | No Flow | 1301 | No Flow |
| 0131 | No Flow | 1331 | No Flow |
| 0201 | No Flow | 1401 | No Flow |
| 0231 | No Flow | 1431 | No Flow |
| 0301 | No Flow | 1501 | No Flow |
| 0331 | No Flow | 1531 | No Flow |
| 0401 | No Flow | 1601 | No Flow |
| 0431 | No Flow | 1631 | No Flow |
| 0501 | No Flow | 1701 | No Flow |
| 0531 | No Flow | 1731 | No Flow |
| 0601 | No Flow | 1801 | No Flow |
| 0631 | No Flow | 1831 | No Flow |
| 0701 | No Flow | 1901 | No Flow |
| 0731 | No Flow | 1931 | No Flow |
| 0801 | No Flow | 2001 | No Flow |
| 0831 | No Flow | 2031 | No Flow |
| 0901 | No Flow | 2101 | No Flow |
| 0931 | No Flow | 2131 | No Flow |
| 1001 | No Flow | 2201 | No Flow |
| 1031 | No Flow | 2231 | No Flow |
| 1101 | No Flow | 2301 | No Flow |
| 1131 | No Flow | 2331 | No Flow |

RECEIVED

OCT 29 2013

DIVISION OF
ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Monday, September 30th, 2013 | | |
| Sample Point | SP008 | | |
| | | | |
| Time | pH | Time | pH |
| 0001 | No Flow | | |
| 0031 | No Flow | | |
| 0101 | No Flow | | |
| 0131 | No Flow | | |
| 0201 | No Flow | | |
| 0231 | No Flow | | |
| 0301 | No Flow | | |
| 0331 | No Flow | | |
| 0401 | No Flow | | |
| 0431 | No Flow | | |
| 0501 | No Flow | | |
| 0531 | No Flow | | |
| 0601 | No Flow | | |
| 0631 | No Flow | | |
| 0701 | No Flow | | |
| 0731 | No Flow | | |
| 0801 | No Flow | | |
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OCT 29 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Friday, September 27th, 2013 | | |
| Sample Point | SP008 diverted to Salisbury | | |
| Flow | ~400 gpm when there was flow | | |
| | | | |
| Time | pH | Time | pH |
| 0710 | 6.5 | 1859 | No flow |
| 0740 | 6 | 1929 | No flow |
| 0810 | No Flow | 1959 | 7 |
| 0835 | No Flow | 2029 | No flow |
| 0900 | No Flow | 2059 | No flow |
| 0929 | 6 | 2129 | No flow |
| 0959 | 6 | 2159 | No flow |
| 1029 | 6 | 2229 | No flow |
| 1059 | 6 | 2259 | No flow |
| 1129 | No Flow | 2329 | No flow |
| 1159 | 6.5 | 2359 | No flow |
| 1229 | 6.5 | | |
| 1259 | 7 | | |
| 1329 | 7 | | |
| 1359 | No Flow | | |
| 1429 | 6 | | |
| 1459 | No Flow | | |
| 1529 | No Flow | | |
| 1559 | No Flow | | |
| 1629 | 6 | | |
| 1659 | No Flow | | |
| 1729 | 6 | | |
| 1759 | No Flow | | |
| 1829 | No Flow | | |

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OCT 29 2013

DIVISION OF
ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Saturday, September 28, 2013 | | |
| Sample Point | SP008 diverted to Salisbury | | |
| Flow | ~400 gpm when there was flow | | |
| Time | pH | Time | pH |
| 0029 | No Flow | 1329 | No flow |
| 0059 | No Flow | 1359 | 6 |
| 0129 | No Flow | 1429 | 6 |
| 0159 | No Flow | 1459 | No flow |
| 0229 | No Flow | 1529 | No flow |
| 0259 | No Flow | 1559 | 6 |
| 0329 | No Flow | 1629 | 6 |
| 0359 | No Flow | 1659 | 6 |
| 0429 | No Flow | 1729 | 6 |
| 0459 | No Flow | 1759 | 6 |
| 0529 | No Flow | 1829 | 6 |
| 0559* | No Flow | 1859 | 6 |
| 0729 | 6.5 | 1929 | 6 |
| 0759 | 7 | 1959 | No flow |
| 0829 | 6.5 | 2029 | No flow |
| 0859 | 6.5 | 2059 | No flow |
| 0929 | No Flow | 2129 | No flow |
| 0959 | 6.5 | 2159 | No flow |
| 1029 | 6.5 | 2229 | No flow |
| 1059 | 7 | 2259 | No flow |
| 1129 | No Flow | 2329 | No flow |
| 1159 | 7 | 2359 | No flow |
| 1229 | 6 | | |
| 1259 | 6 | | |

*pump removed and flow temporarily stopped

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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Sunday, September 29, 2013 | | |
| Sample Point | SP008 diverted to Salisbury | | |
| Flow | ~400 gpm when there was flow | | |
| Time | pH | Time | pH |
| 0029 | No Flow | 1329 | No flow |
| 0059 | No Flow | 1359 | No flow |
| 0129 | No Flow | 1429 | No flow |
| 0159 | No Flow | 1459 | No flow |
| 0229 | No Flow | 1529 | 6 |
| 0259 | No Flow | 1559 | 6 |
| 0329 | No Flow | 1629 | 6 |
| 0359 | No Flow | 1659 | 6 |
| 0429 | No Flow | 1729 | 6 |
| 0459 | No Flow | 1759 | 6 |
| 0529 | No Flow | 1829 | 7 |
| 0559 | No Flow | 1859 | No flow |
| 0629 | No Flow | 1929 | No flow |
| 0659 | No Flow | 1959 | No flow |
| 0729 | No Flow | 2029 | 7 |
| 0759 | 6.5 | 2059 | 6.5 |
| 0829 | 6.5 | 2129 | 6.5 |
| 0859 | 6.5 | 2159 | 6 |
| 0929 | 6.5 | 2229 | 6.5 |
| 0959 | 6.5 | 2259 | 6.5 |
| 1029 | 6 | 2329 | 6.5 |
| 1059 | No Flow | 2359 | No flow |
| 1129 | No Flow | | |
| 1159 | No Flow | | |
| 1229 | No Flow | | |
| 1259 | No Flow | | |

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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Monday, September 30, 2013 | | |
| Sample Point | SP008 diverted to Salisbury | | |
| Flow | ~400 gpm when there was flow | | |
| Time | pH | Time | pH |
| 0029 | No Flow | 1355 | 6 |
| 0059 | No Flow | 1425 | 6 |
| 0129 | No Flow | 1455 | 6 |
| 0159 | No Flow | 1525 | 6 |
| 0229 | No Flow | 1555 | 6 |
| 0259 | No Flow | 1625 | 6 |
| 0329 | No Flow | 1655 | 6 |
| 0359 | No Flow | 1725 | 6 |
| 0429 | No Flow | 1755 | No flow |
| 0459 | No Flow | 1825 | 6 |
| 0529 | No Flow | 1855 | 6 |
| 0559 | No Flow | 1925 | 6 |
| 0629 | No Flow | 1955 | 6 |
| 0659 | 6 | 2025 | 6 |
| 0729 | 6.5 | 2055 | 6 |
| 0759 | 6 | 2125 | 6 |
| 0855 | 6 | 2155 | 6 |
| 0925 | 6 | 2225 | 6 |
| 0955 | 6 | 2255 | 6 |
| 1025 | 6 | 2325 | 6 |
| 1055 | 6 | 2355 | 6 |
| 1125 | 6 | 2425 | 6 |
| 1155 | 6 | 2455 | No flow |
| 1225 | 6 | | |
| 1255 | 6 | | |
| 1325 | 7 | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) _X__(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----->> | | **008** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----->> | | 8/7/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----->> | | 1300 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 130,000 | | | | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | | G | <0.005 | | | | | mg/l |
| 1,1,2-Trichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloroethane | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloropropane | | G | <0.005 | | | | | mg/l |
| 1,3-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 1,4-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 2-Chloroethylvinylether | | G | <0.020 | | | | | mg/l |
| Acrolein | | G | <0.100 | | | | | mg/l |
| Acrylonitrile | | G | <0.005 | | | | | mg/l |
| Benzene | | G | <0.002 | | | | | mg/l |
| Bromodichloromethane | | G | 0.002 | | | | | mg/l |
| Bromoform | | G | <0.005 | | | | | mg/l |
| Bromomethane | | G | <0.010 | | | | | mg/l |
| Carbon Tetrachloride | | G | <0.005 | | | | | mg/l |
| Chlorobenzene | | G | <0.005 | | | | | mg/l |
| Chloroethane | | G | <0.010 | | | | | mg/l |
| Chloroform | | G | 0.005 | | | | | mg/l |
| Chloromethane | | G | <0.010 | | | | | mg/l |
| cis-1,3-Dicholropropene | | G | <0.005 | | | | | mg/l |
| Dibromochloromethane | | G | <0.005 | | | | | mg/l |
| Ethylbenzene | | G | <0.005 | | | | | mg/l |
| Methylene Chloride | | G | <0.005 | | | | | mg/l |
| Tetrachloroethene | | G | <0.005 | | | | | mg/l |
| Toluene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloroethene | | G | <0.005 | | | | | mg/l |
| trans-1,3-Dichloropropene | | G | <0.005 | | | | | mg/l |
| Trichloroethene | | G | <0.005 | | | | | mg/l |
| Vinyl Chloride | | G | <0.002 | | | | | mg/l |
| 1,2,4-Trichlorobenzene | | G | <0.01 | | | | | mg/l |
| 2,4,6-Trichlorophenol | | G | <0.01 | | | | | mg/l |
| 2,4-Dichlorophenol | | G | <0.01 | | | | | mg/l |
| 2,4-Dimethylphenol | | G | <0.01 | | | | | mg/l |
| 2,4-Dinitrophenol | | G | <0.02 | | | | | mg/l |
| 2,4-Dinitrotoluene | | G | <0.01 | | | | | mg/l |
| 2,6-Dinitrotoluene | | G | <0.01 | | | | | mg/l |
| 2-Chloronapthalene | | G | <0.01 | | | | | mg/l |
| 2-Chlorophenol | | G | <0.01 | | | | | mg/l |
| 2-Nitrophenol | | G | <0.02 | | | | | mg/l |
| 3,3-Dichlorobenzidine | | G | <0.01 | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | | G | <0.02 | | | | | mg/l |
| 4-Bromophenyl-phenylether | | G | <0.01 | | | | | mg/l |
| 4-Chloro-3-methylphenol | | G | <0.02 | | | | | mg/l |
| 4-Chlorophenyl-phenylether | | G | <0.01 | | | | | mg/l |
| 4-Nitrophenol | | G | <0.02 | | | | | mg/l |
| Acenapthene | | G | <0.01 | | | | | mg/l |
| Acenaphthylene | | G | <0.01 | | | | | mg/l |
| Anthracene | | G | <0.01 | | | | | mg/l |
| Benzidine | | G | <0.04 | | | | | mg/l |
| Benzo(a)anthracene | | G | <0.01 | | | | | mg/l |
| Benzo(a)pyrene | | G | <0.01 | | | | | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) _X__(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----> | | **008** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----> | | 8/7/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----> | | 1300 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 130,000 | | | | | gal/day |
| Benzo(b)fluoranthene | | G | <0.01 | | | | | mg/l |
| Benzo(g,h,i)perylene | | G | <0.01 | | | | | mg/l |
| Benzo(k)fluoranthene | | G | <0.01 | | | | | mg/l |
| Bis(2-chloroethoxy)methane | | G | <0.01 | | | | | mg/l |
| Bis(2-chloroethyl)ether | | G | <0.01 | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | | G | <0.01 | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | | G | <0.006 | | | | | mg/l |
| Butyl benzyl phthalate | | G | <0.01 | | | | | mg/l |
| Chrysene | | G | 0.004 | | | | | mg/l |
| Dibenzo(a,h)anthracene | | G | <0.01 | | | | | mg/l |
| Diethyl phthalate | | G | <0.01 | | | | | mg/l |
| Dimethyl phthalate | | G | <0.01 | | | | | mg/l |
| Di-n-butyl phthalate | | G | <0.01 | | | | | mg/l |
| Di-n-octyl-phthalate | | G | <0.01 | | | | | mg/l |
| Fluorene | | G | <0.01 | | | | | mg/l |
| Fluoranthene | | G | <0.01 | | | | | mg/l |
| Hexachlorobenzene | | G | <0.01 | | | | | mg/l |
| Hexachlorobutadiene | | G | <0.01 | | | | | mg/l |
| Hexachlorocyclopentadiene | | G | <0.02 | | | | | mg/l |
| Hexachloroethane | | G | <0.01 | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | | G | <0.01 | | | | | mg/l |
| Isophorone | | G | <0.01 | | | | | mg/l |
| Naphthalene | | G | <0.01 | | | | | mg/l |
| Nitrobenzene | | G | <0.01 | | | | | mg/l |
| N-nitrosodimethylamine | | G | <0.02 | | | | | mg/l |
| N-nitrosodi-n-propylamine | | G | <0.01 | | | | | mg/l |
| N-nitrosodiphenylamine | | G | <0.01 | | | | | mg/l |
| Pentachlorophenol | | G | <0.02 | | | | | mg/l |
| Phenanthrene | | G | <0.01 | | | | | mg/l |
| Phenol | | G | <0.005 | | | | | mg/l |
| Pyrene | | G | <0.01 | | | | | mg/l |
| 1,2-Diphenylhydrazine | | G | <0.01 | | | | | mg/l |
| | | | | | | | | |
| **Total Toxic Organics** | 5.844 | -- | 0.901 | | | | | mg/l |
| | | | | | | | | |
| | | | | | | | | |
| Lab Dilution Factor | | | 1,5 | | | | | |

Shaded values represent detection limits

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MSD 013573

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) X____(JULY-SEPT) _____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----> | | **010** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----> | | 7/12/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----> | | 0745, 0845, 0945, 1045 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 1,142,913 | | | | | gal/day |
| Oil & Grease | 200 | G | <5 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 810 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 1160 | | | | | mg/l |
| Total Suspended Solids | **** | C | 42 | | | | | mg/l |
| Temperature | 60 | G | 31.1 | | | | | deg C |
| pH | 5.5 - 11.5 | G | see attached | | | | | S.U. |
| Chromium | 5.0 | C | 0.006 | | | | | mg/l |
| Copper | 2.7 | C | 0.017 | | | | | mg/l |
| Nickel | 2.3 | C | 0.009 | | | | | mg/l |
| Zinc | 3.0 | C | 0.146 | | | | | mg/l |
| Cyanide | 1.2 | C | <0.007 | | | | | mg/l |
| Shaded values represent detection limits. | | | | | | | | |
| Lab Dilution Factor | | | 1, 2,5 | | | | | |

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Mallinckrodt pH Monitoring for SP010: July 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 7/27/13 0810 | 5.3 | 5 |
| 7/30/13 1900 | 11.6 | 20 |
| 7/31/13 1035 | 4.4 | 5 |
| | **July Total:** | **30** |

Mallinckrodt pH Monitoring for SP010: August 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 8/6/13 0805 | 4.6 | 5 |
| 8/8/13 0255 | 3.8 | 5 |
| 8/8/13 0330 | 5.4 | 5 |
| 8/12/13 0655 | 5.3 | 5 |
| 8/14/13 1110 | 4.0 | 5 |
| 8/16/13 1010 | 5.4 | 5 |
| 8/19/13 1610 | 5.3 | 5 |
| | **August Total:** | **35** |

Mallinckrodt pH Monitoring for SP010: September 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 9/6/13 1300 | 4.0 | 10 |
| 9/6/13 1500 | 5.3 | 5 |
| 9/6/13 1510 | 4.6 | 10 |
| 9/10/13 0310 | 5.2 | 5 |
| 9/12/13 2125 | 4.5 | 5 |
| 9/13/13 1425 | 5.3 | 5 |
| 9/14/13 1210 | 4.7 | 5 |
| 9/16/13 1015 | 4.6 | 5 |
| 9/19/13 1840 | 11.8 | 50 |
| 9/23/13 0805 | 5.0 | 5 |
| 9/24/13 1430 | 5.0 | 5 |
| 9/25/13 1240 | 4.1 | 10 |
| | **September Total:** | **120** |

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ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) _____(APR-JUNE) __X__(JULY-SEPT) _____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | **011** | | **011** | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 8/7/2013 | | 9/24/2013 | | 9/27/2013 | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 1300 | | 1:30 | | 0750 | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | 14,000 | E | 14,000 | E | 14,000 | gal/day |
| Oil & Grease | 200 | G | <5 | G | <5 | G | <6 | mg/l |
| Biochemical Oxygen Demand | **** | G | 17 | G | 20 | G | <5 | mg/l |
| Chemical Oxygen Demand | **** | G | 44 | G | 51 | G | <50 | mg/l |
| Total Suspended Solids | **** | G | 9 | G | <6 | G | 7 | mg/l |
| Temperature | 60 | G | 20 | G | 18.3 | G | 20 | deg C |
| pH | 5.5 - 11.5 | G | see attached sheets | G | see attached sheets | G | see attached sheets | S.U. |
| Shaded values represent detection limits | | | | | | | | |
| Lab Dilution Factor | | | 1 | | 1 | | 1 | |

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| Unplanned Power Outage Manual pH Monitoring | | | |
|---|---|---|---|
| Date | 8/7/2013 | | |
| Sample Point | SP011 | | |
| | | | |
| Time | pH | | |
| 1330 | 7.4 | | |
| 1400 | 7.7 | | |
| 1430 | 7.1 | | |
| 1500 | 7 | | |
| | | | |

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ENVIRONMENTAL COMPLIANCE

| Unplanned Power Outage Manual pH Monitoring | | | |
|---|---|---|---|
| Date | 9/24/2013 | | |
| Sample Point | SP011 | | |
| | | | |
| Time | pH | | |
| 1330 | 7.2 | | |
| 1400 | 7.6 | | |
| 1430 | 7.1 | | |
| 1500 | 7 | | |
| 1530 | 7.4 | | |

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ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Friday, September 27th, 2013 | | |
| Sample Point | SP011 | | |
| | | | |
| Time | pH | Time | pH |
| 0750 | 7.4 | 1935 | 8.5 |
| 0819 | 7.6 | 2005 | 8.57 |
| 0843 | 7.8 | 2035 | 8.51 |
| 0906 | 7.8 | 2105 | 8.61 |
| 0936 | 7.53 | 2135 | 8.38 |
| 1005 | 7.95 | 2205 | 8.63 |
| 1035 | 7.5 | 2235 | 8.61 |
| 1105 | 8.36 | 2305 | 8.59 |
| 1135 | 8.35 | 2335 | 7.53 |
| 1205 | 8.36 | | |
| 1235 | 8.38 | | |
| 1305 | 7.53 | | |
| 1335 | 7.74 | | |
| 1405 | 8.08 | | |
| 1435 | 7.83 | | |
| 1505 | 7.8 | | |
| 1535 | 8.09 | | |
| 1605 | 8.35 | | |
| 1635 | 8.44 | | |
| 1705 | 8.48 | | |
| 1735 | 8.49 | | |
| 1805 | 8.32 | | |
| 1835 | 8.41 | | |
| 1905 | 8.46 | | |

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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Saturday, September 28th, 2013 | | |
| Sample Point | SP011 | | |
| | | | |
| Time | pH | Time | pH |
| 0005 | 7.47 | 1205 | 7.39 |
| 0035 | 7.42 | 1235 | 7.42 |
| 0105 | 7.41 | 1305 | 7.42 |
| 0135 | 7.42 | 1335 | 7.35 |
| 0205 | 7.43 | 1405 | 7.29 |
| 0235 | 7.47 | 1435 | 7.26 |
| 0305 | 7.44 | 1505 | 7.25 |
| 0335 | 7.45 | 1535 | 7.26 |
| 0405 | 7.47 | 1605 | 7.27 |
| 0435 | 7.48 | 1635 | 7.27 |
| 050 | 7.47 | 1705 | 7.28 |
| 0535 | 7.43 | 1735 | 7.26 |
| 0605 | 7.47 | 1805 | 7.28 |
| 0635 | 7.5 | 1835 | 7.25 |
| 0705 | 7.47 | 1905 | 7.31 |
| 0735 | 7.46 | 1935 | 7.29 |
| 0805 | 7.5 | 2005 | 7.29 |
| 0835 | 7.45 | 2035 | 7.25 |
| 0905 | 7.45 | 2105 | 7.26 |
| 0935 | 7.44 | 2135 | 7.23 |
| 1005 | 7.41 | 2205 | 7.25 |
| 1035 | 7.43 | 2235 | 7.25 |
| 1105 | 7.37 | 2305 | 7.27 |
| 1135 | 7.42 | 2335 | 7.37 |

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OCT 29 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Sunday, September 29th, 2013 | | |
| Sample Point | SP011 | | |
| | | | |
| Time | pH | Time | pH |
| 0005 | 7.69 | 1205 | 6.8 |
| 0035 | 7.03 | 1235 | 6.8 |
| 0105 | 7.07 | 1305 | 6.78 |
| 0135 | 7.03 | 1335 | 6.76 |
| 0205 | 7.11 | 1405 | 6.75 |
| 0235 | 7.13 | 1435 | 6.74 |
| 0305 | 7.05 | 1505 | 6.73 |
| 0335 | 7.23 | 1535 | 6.73 |
| 0405 | 7.2 | 1605 | 6.72 |
| 0435 | 7.09 | 1635 | 6.72 |
| 050 | 7.02 | 1705 | 6.73 |
| 0535 | 6.99 | 1735 | 6.75 |
| 0605 | 7.06 | 1805 | 6.76 |
| 0635 | 7.11 | 1835 | 6.76 |
| 0705 | 7 | 1905 | 6.82 |
| 0735 | 7.01 | 1935 | 6.83 |
| 0805 | 7.04 | 2005 | 6.76 |
| 0835 | 7.08 | 2035 | 6.74 |
| 0905 | 6.98 | 2105 | 6.73 |
| 0935 | 6.92 | 2135 | 7.03 |
| 1005 | 6.9 | 2205 | 6.85 |
| 1035 | 6.86 | 2235 | 6.75 |
| 1105 | No Flow | 2305 | 6.85 |
| 1135 | 6.82 | 2335 | 6.79 |

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DIVISION OF
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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Monday, September ~~29th~~ 30, 2013 | | |
| Sample Point | SP011 | | |
| | | | |
| Time | pH | Time | pH |
| 0005 | 6.82 | | |
| 0035 | 7.09 | | |
| 0105 | 6.94 | | |
| 0135 | 6.92 | | |
| 0205 | 7.13 | | |
| 0235 | 7.55 | | |
| 0305 | 7.74 | | |
| 0335 | 7.31 | | |
| 0405 | 7.04 | | |
| 0435 | 7.02 | | |
| 0505 | 6.96 | | |
| 0535 | 6.92 | | |
| 0605 | 6.9 | | |
| 0635 | 6.86 | | |
| 0705 | 6.88 | | |
| 0735 | 6.84 | | |
| 0800 | 6.87 | | |
| | | | |
| | | | |
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| | | | |
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DIVISION OF
ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Friday, September 27th, 2013 | | |
| Sample Point | 501 | | |
| Flow | ~400 gpm when there was flow | | |
| Time | pH | Time | pH |
| 0725 | 10 | 1904 | No Flow |
| 0753 | 7 | 1934 | No Flow |
| 0817 | 8 | 2004 | No Flow |
| 0840 | 7.5 | 2034 | No Flow |
| 0905 | 7 | 2104 | 7 |
| 0935 | No Flow | 2134 | No Flow |
| 1004 | No Flow | 2204 | No Flow |
| 1034 | No Flow | 2234 | No Flow |
| 1104 | 7 | 2304 | No Flow |
| 1134 | 7 | 2334 | No Flow |
| 1204 | 7 | | |
| 1234 | 7 | | |
| 1304 | 7 | | |
| 1334 | 7 | | |
| 1404 | No Flow | | |
| 1434 | No Flow | | |
| 1504 | No Flow | | |
| 1534 | No Flow | | |
| 1604 | No Flow | | |
| 1634 | No Flow | | |
| 1704 | No Flow | | |
| 1734 | No Flow | | |
| 1804 | No Flow | | |
| 1834 | No Flow | | |

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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Saturday, September 28th, 2013 | | |
| Sample Point | 501 | | |
| Flow | ~400 gpm when there was flow | | |
| Time | pH | Time | pH |
| 0004 | No Flow | 1204 | 10 |
| 0034 | 9 | 1234 | 10 |
| 0104 | No Flow | 1304 | 10 |
| 0134 | No Flow | 1334 | 10 |
| 0204 | No Flow | 1404 | 10 |
| 0234 | No Flow | 1434 | No Flow |
| 0304 | 7 | 1504 | 10 |
| 0334 | 7 | 1534 | 10 |
| 0404 | 7 | 1604 | No Flow |
| 0434 | 7 | 1634 | No Flow |
| 0504 | 6.5 | 1704 | 10 |
| 0534 | No Flow | 1734 | 10 |
| 0604 | No Flow | 1804 | No Flow |
| 0634 | 7 | 1834 | 9 |
| 0704 | 7 | 1904 | 10 |
| 0734 | 10 | 1934 | 10 |
| 0804 | 10 | 2004 | No Flow |
| 0834 | 10 | 2034 | No Flow |
| 0904 | 10 | 2104 | No Flow |
| 0934 | 10 | 2134 | No Flow |
| 1004 | 10 | 2204 | No Flow |
| 1034 | 10 | 2234 | No Flow |
| 1104 | 10 | 2304 | 10 |
| 1134 | 10 | 2334 | 10 |

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| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Sunday, September 29th, 2013 | | |
| Sample Point | 501 | | |
| Flow | ~400 gpm when there was flow | | |
| Time | pH | Time | pH |
| 0004 | 9 | 1204 | 7 |
| 0034 | 8.5 | 1234 | 7 |
| 0104 | 10 | 1304 | 7.5 |
| 0134 | 9.5 | 1334 | 7.5 |
| 0204 | 9.5 | 1404 | 10 |
| 0234 | 9.5 | 1434 | 10 |
| 0304 | 9.5 | 1504 | 10 |
| 0334 | 9.5 | 1534 | 9.5 |
| 0404 | 9.5 | 1604 | 10 |
| 0434 | 8.5 | 1634 | 7.5 |
| 0504 | 8.5 | 1704 | 10 |
| 0534 | 7.5 | 1734 | 10 |
| 0604 | 7 | 1804 | 10 |
| 0634 | 7 | 1834 | 10 |
| 0704 | No Flow | 1904 | 9.5 |
| 0734 | No Flow | 1934 | 9.5 |
| 0804 | 9.5 | 2004 | No Flow |
| 0834 | 9.5 | 2034 | No Flow |
| 0904 | 10 | 2104 | 10 |
| 0934 | 10 | 2134 | 10 |
| 1004 | 10 | 2204 | No Flow |
| 1034 | 10 | 2234 | 10 |
| 1104 | 10 | 2304 | 10 |
| 1134 | 9.5 | 2334 | No Flow |

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Monday, September 29th, 2013 | | |
| Sample Point | 501 | | |
| Flow | ~400 gpm when there was flow | | |
| Time | pH | Time | pH |
| 0004 | No Flow | 1150 | 7 |
| 0034 | No Flow | 1220 | No Flow |
| 0104 | No Flow | 1250 | No Flow |
| 0134 | No Flow | 1320 | No Flow |
| 0204 | 10 | 1350 | 9 |
| 0234 | No Flow | 1420 | 10 |
| 0304 | No Flow | 1450 | No Flow |
| 0334 | No Flow | 1520 | No Flow |
| 0404 | No Flow | 1550 | 10 |
| 0434 | No Flow | 1620 | 7 |
| 0504 | No Flow | 1650 | 10 |
| 0534 | No Flow | 1720 | 9.5 |
| 0604 | No Flow | 1750 | 9.5 |
| 0634 | No Flow | 1820 | No Flow |
| 0704 | 10 | 1850 | 7 |
| 0734 | 9 | 1920 | No Flow |
| 0804 | 8 | 1950 | No Flow |
| 0825 | 8 | 2020 | No Flow |
| 0850 | 8 | 2050 | No Flow |
| 0920 | 8 | 2120 | 10 |
| 0950 | 8 | 2150 | No Flow |
| 1020 | No Flow | 2220 | No Flow |
| 1050 | 9 | 2250 | No Flow |
| 1120 | 6 | 2320 | 10 |
| | | 2350 | No Flow |

RECEIVED
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DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) _____(APR-JUNE) _X___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----> | | 8/7/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----> | | 1300 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 14,000 | | | | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | | G | <0.005 | | | | | mg/l |
| 1,1,2-Trichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloroethane | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloropropane | | G | <0.005 | | | | | mg/l |
| 1,3-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 1,4-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 2-Chloroethylvinylether | | G | <0.020 | | | | | mg/l |
| Acrolein | | G | <0.100 | | | | | mg/l |
| Acrylonitrile | | G | <0.005 | | | | | mg/l |
| Benzene | | G | <0.002 | | | | | mg/l |
| Bromodichloromethane | | G | 0.002 | | | | | mg/l |
| Bromoform | | G | <0.005 | | | | | mg/l |
| Bromomethane | | G | <0.010 | | | | | mg/l |
| Carbon Tetrachloride | | G | <0.005 | | | | | mg/l |
| Chlorobenzene | | G | <0.005 | | | | | mg/l |
| Chloroethane | | G | <0.010 | | | | | mg/l |
| Chloroform | | G | 0.003 | | | | | mg/l |
| Chloromethane | | G | <0.010 | | | | | mg/l |
| cis-1,3-Dicholropropene | | G | <0.005 | | | | | mg/l |
| Dibromochloromethane | | G | <0.005 | | | | | mg/l |
| Ethylbenzene | | G | <0.005 | | | | | mg/l |
| Methylene Chloride | | G | 0.0031 | | | | | mg/l |
| Tetrachloroethene | | G | <0.005 | | | | | mg/l |
| Toluene | | G | <0.005 | | | | | mg/l |
| trans-1,2-Dichloroethene | | G | <0.005 | | | | | mg/l |
| trans-1,3-Dichloropropene | | G | <0.005 | | | | | mg/l |
| Trichloroethene | | G | <0.005 | | | | | mg/l |
| Vinyl Chloride | | G | <0.002 | | | | | mg/l |
| 1,2,4-Trichlorobenzene | | G | <0.009 | | | | | mg/l |
| 2,4,6-Trichlorophenol | | G | <0.009 | | | | | mg/l |
| 2,4-Dichlorophenol | | G | <0.009 | | | | | mg/l |
| 2,4-Dimethylphenol | | G | <0.009 | | | | | mg/l |
| 2,4-Dinitrophenol | | G | <0.018 | | | | | mg/l |
| 2,4-Dinitrotoluene | | G | <0.009 | | | | | mg/l |
| 2,6-Dinitrotoluene | | G | <0.009 | | | | | mg/l |
| 2-Chloronapthalene | | G | <0.009 | | | | | mg/l |
| 2-Chlorophenol | | G | <0.009 | | | | | mg/l |
| 2-Nitrophenol | | G | <0.018 | | | | | mg/l |
| 3,3-Dichlorobenzidine | | G | <0.009 | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | | G | <0.018 | | | | | mg/l |
| 4-Bromophenyl-phenylether | | G | <0.009 | | | | | mg/l |
| 4-Chloro-3-methylphenol | | G | <0.018 | | | | | mg/l |
| 4-Chlorophenyl-phenylether | | G | <0.009 | | | | | mg/l |
| 4-Nitrophenol | | G | <0.018 | | | | | mg/l |
| Acenapthene | | G | <0.009 | | | | | mg/l |
| Acenaphthylene | | G | <0.009 | | | | | mg/l |
| Anthracene | | G | <0.009 | | | | | mg/l |
| Benzidine | | G | <0.036 | | | | | mg/l |
| Benzo(a)anthracene | | G | <0.009 | | | | | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) _____(APR-JUNE) _X___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 8/7/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 1300 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 14,000 | | | | | gal/day |
| Benzo(a)pyrene | | G | <0.009 | | | | | mg/l |
| Benzo(b)fluoranthene | | G | <0.009 | | | | | mg/l |
| Benzo(g,h,i)perylene | | G | <0.009 | | | | | mg/l |
| Benzo(k)fluoranthene | | G | <0.009 | | | | | mg/l |
| Bis(2-chloroethoxy)methane | | G | <0.009 | | | | | mg/l |
| Bis(2-chloroethyl)ether | | G | <0.009 | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | | G | <0.009 | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | | G | <0.005 | | | | | mg/l |
| Butyl benzyl phthalate | | G | <0.009 | | | | | mg/l |
| Chrysene | | G | <0.009 | | | | | mg/l |
| Dibenzo(a,h)anthracene | | G | <0.009 | | | | | mg/l |
| Diethyl phthalate | | G | <0.009 | | | | | mg/l |
| Dimethyl phthalate | | G | <0.009 | | | | | mg/l |
| Di-n-butyl phthalate | | G | <0.009 | | | | | mg/l |
| Di-n-octyl-phthalate | | G | <0.009 | | | | | mg/l |
| Fluoranthene | | G | <0.009 | | | | | mg/l |
| Fluorene | | G | <0.009 | | | | | mg/l |
| Hexachlorobenzene | | G | <0.009 | | | | | mg/l |
| Hexachlorobutadiene | | G | <0.009 | | | | | mg/l |
| Hexachlorocyclopentadiene | | G | <0.018 | | | | | mg/l |
| Hexachloroethane | | G | <0.009 | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | | G | <0.009 | | | | | mg/l |
| Isophorone | | G | <0.009 | | | | | mg/l |
| Naphthalene | | G | <0.009 | | | | | mg/l |
| Nitrobenzene | | G | <0.009 | | | | | mg/l |
| N-nitrosodimethylamine | | G | <0.018 | | | | | mg/l |
| N-nitrosodi-n-propylamine | | G | <0.009 | | | | | mg/l |
| N-nitrosodiphenylamine | | G | <0.009 | | | | | mg/l |
| Pentachlorophenol | | G | <0.018 | | | | | mg/l |
| Phenanthrene | | G | <0.009 | | | | | mg/l |
| Phenol | | G | <0.005 | | | | | mg/l |
| Pyrene | | G | <0.009 | | | | | mg/l |
| 1,2-Diphenylhydrazine | | G | <0.009 | | | | | mg/l |
| **Total Toxic Organics** | 5.844 | -- | 0.849 | | | | | mg/l |
| | | | | | | | | |
| Lab Dilution Factor | | | 1 | | | | | |

Shaded values represent detection limits

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _____(JAN-MAR) ___(APR-JUN) __X__(JULY-SEP) _____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **080** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated | | | | | | UNITS |
| FLOW | | | | E | * | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | mg/L |
| n-Amyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | * | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | * | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | * | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | * | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Diethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | * | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | * | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | * | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | * | | | | | mg/L |
| Triethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | * | | | | | mg/L |
| | | | | | | | | | | |
| Oil & Grease | 1664 | 200 | | G | * | | | | | mg/L |
| Biochemical Oxygen Demand | | **** | | C | * | | | | | mg/L |
| Chemical Oxygen Demand | | **** | | C | * | | | | | mg/L |
| Total Suspended Solids | | **** | | C | * | | | | | mg/L |
| Temperature | | 60 | | G | * | | | | | deg C |
| pH | | 5.5 - 11.5 | | G | * | | | | | S.U. |

*** No flow from SP080 in 3rd QTR 2013**

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) _____ (APR-JUNE) __X___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | -----> | | **905** | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | -----> | | 9/16/2013 | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | -----> | | 1023 | | | |
| | MONTHLY LIMIT (ave) | DAILY MAX LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | |
| PARAMETER | (gm/day) | (gm/day) | | | Lab results mg/L | | UNITS |
| FLOW | | | M | 24210 | | | gal/day |
| 1,2,4-Trichlorobenzene | 74 | 301 | G | 0.92 | 0.010 | | gm/day |
| 1,2-Dichlorobenzene | 74 | 301 | G | 0.46 | 0.005 | | gm/day |
| 1,3-Dichlorobenzene | 54 | 144 | G | 0.46 | 0.005 | | gm/day |
| 1,4-Dichlorobenzene | 54 | 144 | G | 0.46 | 0.005 | | gm/day |
| 2-Nitrophenol | 25 | 87 | G | 1.83 | 0.020 | | gm/day |
| 2-Methyl-4,6-dinitrophenol | 30 | 105 | G | 1.83 | 0.020 | | gm/day |
| 4-Nitrophenol | 61 | 218 | G | 1.83 | 0.020 | | gm/day |
| Acenapthene | 7 | 18 | G | 0.92 | 0.010 | | gm/day |
| Anthracene | 7 | 18 | G | 0.92 | 0.010 | | gm/day |
| Bis(2-ethylhexyl)phthalate | 36 | 98 | G | 0.55 | 0.006 | | gm/day |
| Diethyl phthalate | 17 | 43 | G | 0.92 | 0.010 | | gm/day |
| Dimethyl phthalate | 7 | 18 | G | 0.92 | 0.010 | | gm/day |
| Di-n-butyl phthalate | 8 | 16 | G | 0.92 | 0.010 | | gm/day |
| Fluoranthene | 8 | 20 | G | 0.92 | 0.010 | | gm/day |
| Fluorene | 7 | 18 | G | 0.92 | 0.010 | | gm/day |
| Hexachlorobenzene | 74 | 301 | G | 0.92 | 0.010 | | gm/day |
| Hexachlorobutadiene | 54 | 144 | G | 0.92 | 0.010 | | gm/day |
| Hexachloroethane | 74 | 301 | G | 0.92 | 0.010 | | gm/day |
| Naphthalene | 7 | 18 | G | 0.92 | 0.010 | | gm/day |
| Phenanthrene | 7 | 18 | G | 0.92 | 0.010 | | gm/day |
| Pyrene | 8 | 18 | G | 0.92 | 0.010 | | gm/day |
| 1,1,1-Trichloroethane | 8 | 22 | G | 0.46 | 0.005 | | gm/day |
| 1,1,2-Trichloroethane | 12 | 48 | G | 0.46 | 0.005 | | gm/day |
| 1,1-Dichloroethane | 8 | 22 | G | 0.46 | 0.005 | | gm/day |
| 1,1-Dichloroethene | 8 | 23 | G | 0.46 | 0.005 | | gm/day |
| 1,2-Dichloroethane | 74 | 301 | G | 0.46 | 0.005 | | gm/day |
| 1,2-Dichloropropane | 74 | 301 | G | 0.46 | 0.005 | | gm/day |
| Benzene | 22 | 51 | G | 0.18 | 0.002 | | gm/day |
| Carbon Tetrachloride | 54 | 144 | G | 0.46 | 0.005 | | gm/day |
| Chlorobenzene | 54 | 144 | G | 0.46 | 0.005 | | gm/day |
| Chloroethane | 42 | 112 | G | 0.92 | 0.010 | | gm/day |
| Chloroform | 42 | 123 | G | 0.09 | 0.001 | | gm/day |
| Chloromethane | 42 | 112 | G | 0.92 | 0.010 | | gm/day |
| cis-1,3-Dichloropropene | 74 | 301 | G | 0.46 | 0.005 | | gm/day |
| Ethylbenzene | 54 | 144 | G | 0.46 | 0.005 | | gm/day |
| Methylene Chloride | 14 | 64 | G | 0.46 | 0.005 | | gm/day |
| Nitrobenzene | 847 | 2423 | G | 0.92 | 0.010 | | gm/day |
| Tetrachloroethene | 20 | 62 | G | 0.46 | 0.005 | | gm/day |
| Toluene | 11 | 28 | G | 0.46 | 0.005 | | gm/day |
| trans-1,2-Dichloroethene | 9 | 25 | G | 0.46 | 0.005 | | gm/day |
| trans-1,3-Dichloropropene | 74 | 301 | G | 0.46 | 0.005 | | gm/day |
| Trichloroethene | 10 | 26 | G | 0.46 | 0.005 | | gm/day |
| Vinyl Chloride | 37 | 65 | G | 0.18 | 0.002 | | gm/day |
| Shaded values represent detection limits | | | | | | | |
| Lab Dilution Factor | | | | 1 | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) ____(APR-JUNE) _X___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | 912 | | 912 | | 912 | | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | 7/3/2013 | | 8/5/2013 | | 9/6/2013 | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | 1030 | | 0945 | | 1300 | | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | M | 27100 | M | 64690 | M | 40051 | gal/day |
| | | | | | | | | |
| DMAC (daily max) | 7091 | C | 6 | C | 225 | C | 544 | lb/day |
| DMAC (monthly average) | 5459 | C | 6 | C | 225 | C | 544 | lb/day |
| | | | | | | | | |
| | | | 26.5 | | 417 | | 1628 | mg/L |
| Lab Dilution Factor | | | 1 | | 2 | | 2 | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ___(JAN-MAR) ____(APR-JUN) _X___(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 915 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 9/16/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1305 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | 0.652 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.25 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.25 | | | | | | mg/L |
| Chloroform | 524.2 | 0.10 | 0.03 | G | <0.03 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Diethyl amine* | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.25 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <2.5 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <1.0 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.2 | | | | | | mg/L |
| Triethyl amine* | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.65 | | | | | | mg/L |
| *** Annual monitoring requirement done in 1st qtr 2013* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 50 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _____(JAN-MAR) _____(APR-JUN) _X___(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 920 | | 920 | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 7/3/2013 | | 7/30/2013 | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0845 | | 0830 | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 13,000 | | | | | | gal/day |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.400 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.100 | | | | | | mg/L |
| Cyanide (total) | 335.4 | 33.50 | 9.40 | | | G | <0.007 | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | 1 | | | | |

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2013 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: **MALLINCKRODT INC.**
Permit No:: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUN) _X___(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 927 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 9/6/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1400 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | 0.118 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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2013 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUN) _X___(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **930** | | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| *** No flow this quarter** | | | | | | | | | | | | |
| Dilution by lab | | | | | NA | | | | | | | |

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2013 INDUSTRIAL USER SELF MONITORING REPORT

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Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) ____(APR-JUN) _X___(JULY-SEP) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TekLab

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | | | 933 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | | | 8/12/2013 | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | | | 1300 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 100 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | 0.583 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: Mallinckrodt Inc.

Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ___(JAN-MAR) _____(APR-JUN) _X___(JULY-SEP) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** -----> | | | | | **936** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** -----> | | | | | 7/3/2013 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** -----> | | | | | 0900 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 16,500 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | <0.02 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Diethyl amine** | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Triethyl amine** | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.26 | | | | | | mg/L |
| | | | | | | | | | | | |
| *** Chloroform Results** | **Raw Water** | **SP936** | **SP936- Raw Water** | | | | | | | | |
| **7/3/2013** | **0.0100** | **<0.02** | **<0.02** | | | | | | | | |
| | | | | | | | | | | | |
| ***Results above reported as the difference between SP936 and Raw Water*** | | | | | | | | | | | |
| *** Annual monitoring requirement taken in 1st qtr 2013* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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2013 3Q SP9XX PEG.xlsx

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 1011728100-1.1 Effective Date: 07-01-2013 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUN) _X___(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS -----> | | | | | 937 | | 937 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED -----> | | | | | 7/3/2013 | | 7/30/2013 | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED -----> | | | | | 0845 | | 0830 | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | UNITS |
| FLOW | | | | E | 23,000 | | | | | gal/day |
| Tetrahydrofuran | 524.2 | 9.20 | 3.40 | G | <0.4 | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | mg/L |
| Cyanide (total) | 335.4 | 33.50 | 9.40 | | | G | <0.007 | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | 1 | | | |

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Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _____(JAN-MAR) ____(APR-JUN) _X___(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 938 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 7/10/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1300 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 71 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | 0.258 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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Mallinckrodt Pharmaceuticals

September 18, 2013

Mr. Doug Mendoza
Manager, Environmental Compliance
St. Louis Metropolitan Sewer District
10 East Grand Ave
St. Louis, MO 63147

Mr. Scott M. Rehmer
Assistant Engineer, Env. Compliance
St. Louis Metropolitan Sewer District
10 East Grand Ave
St. Louis, MO 63147

**RE: Electrical outage** - PERMIT NO. 1011728100-1.1

A plant-wide electrical outage for periodic maintenance has been scheduled for Friday, September 27, 2013 through Monday, September 30, 2013. As a result of the outage, the two lift stations at Sample Points 008 and 011 will lose power, causing the plant's wastewater to overflow through these sample points rather than to the plant-wide pH neutralization tanks and through our main outfall, Sample Point 010.

Per our permit conditions, a sample will be taken at the two sample points after overflow discharge commences, in addition to 30 minute manual pH readings. There will be no processes in operation as a result of the power outage, and therefore reduced wastewater discharge is expected. This notification is in accordance with Ordinance 12559 and Permit #1011728100-1.1

During this outage we are going to be completing a sewer project in the alley way between Mallinckrodt and Destrehan Streets. We will be diverting a portion of the flow from the lift stations to two MSD sewers so that the sewer work can be completed. One of the sewers will be on Destrehan at the corner of building 501 and the other will be on Salisbury by building 97.

This project was previously discussed by phone with Scott Rehmer on September 18, 2013. Per discussion with Scott, we will follow up with MSD regarding the start and end date, time and flow estimate as well as pH monitoring of the diverted flow. The pH monitoring will be manual and recorded every 30 minutes.

If you have any questions or need additional information, please call me at 314-654-0127.

Sincerely,

Amber Crouch

Amber Crouch
Sr. EHS Specialist
Mallinckrodt, St. Louis Plant

RECEIVED
SEP 19 2013
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

August 20, 2013

1011728100

Amber Crouch
**MALLINCKRODT LLC**
3600 North 2nd Street
St. Louis, MO 63147

**RE: Account Number 0118821-8**

Dear Ms. Crouch:

The Metropolitan St. Louis Sewer District (MSD) routinely reviews analytical data, which shows the strength of wastewaters discharged by industrial users. The purpose of this review is to determine which users should pay extra strength surcharges as authorized by Sewer Service Charge Ordinance 13402. The analytical results for BOD, COD, and TSS are used for this purpose. Surcharges become applicable for a user when their average concentrations of BOD, COD, and/or TSS exceed normal concentrations.

Our records show that your discharge has been sampled 16 times during the past 24 months, including eight certified MSD self-monitoring reports as required by your discharge permit, and eight MSD routine monitoring samples. The average concentrations of BOD, COD, and TSS calculated from this sample data are higher than your current billing surcharge concentrations. Therefore, your surcharge concentrations will be increased, resulting in a higher surcharge fee per CcF of wastewater discharged. The average concentrations of BOD, COD and TSS calculated from these sample data indicate that your facility is subject to the surcharge provisions of the Ordinance. Shown below are the ordinance normal concentrations, current billing surcharge concentrations and the new average concentrations for the 16 samples referenced above. The data from the **16** samples used to calculate the new averages are enclosed as Attachment 1.

| PARAMETER | MSD ORDINANCE NORMAL CONCENTRATIONS (mg/L) | CURRENT BILLING CONCENTRATIONS (mg/L) | NEW AVERAGE CONCENTRATIONS (mg/L) |
|---|---|---|---|
| BOD | 300 | 415 | 520 |
| COD | 600 | 825 | 1,039 |
| TSS | 300 | 68 | 112 |

The new average concentrations shown above will be used to determine the amount of surcharge on future sewer service charges billed to Mallinckrodt LLC by MSD unless you are able to provide a detailed justification for using different values. As part of your justification for using different values, you may provide additional sampling data or explain why any of the results used in calculating the above averages may not be representative of your average wastewater strength.

Any additional analytical data you wish to provide must be submitted on the enclosed Extra Strength Surcharge Monitoring Report form. You will need to explain how this data is representative of your wastewater strength. If you elect to submit additional information or new data, please provide this information by **September 20, 2013**.

In the absence of a response, we will consider you have elected to accept the new average concentrations and we will use these values for future surcharge billing as provided by MSD Ordinance 13402, Section Three, (B)(2)(c). If you agree to accept the new average concentrations at this time, you may in the future request that MSD recertify Mallinckrodt LLC extra strength surcharge values with updated information. A recertification may be granted using updated sample data you provide and/or updated sample data in our records.

For your convenience we have enclosed "Industrial Waste Surcharge Information," "Basic Guidelines for Wastewater Sampling," and a "Extra Strength Surcharge Monitoring Report." These documents provide further information and instructions if you elect to conduct additional sampling. Should you have any questions, please call me at (314) 436-8716.

Sincerely,
**METROPOLITAN ST. LOUIS SEWER DISTRICT**

Darin Lewis
Environmental Engineering Associate

Attachment 1

## Sample Data

SP001

| Sample Date | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Sample Taker |
|---|---|---|---|---|
| 08/19/2011 | 34 | 74 | 92 | MSD |
| 02/14/2012 | 28 | 88 | 27 | MSD |
| 05/10/2012 | 71 | 155 | 316 | MSD |
| 08/24/2012 | 16 | 56 | 57 | MSD |
| 11/20/2012 | 18 | 124 | 22 | MSD |
| 03/19/2013 | 2 | 13 | 9 | MSD |
| 05/23/2013 | 26 | 20 | 2 | MSD |

SP002

| Sample Date | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Sample Taker |
|---|---|---|---|---|
| 08/19/2011 | 18 | 60 | 21 | MSD |
| 11/29/2011 | 123 | 200 | 76 | MSD |
| 02/14/2012 | 379 | 875 | 280 | MSD |
| 05/10/2012 | 823 | 1,476 | 192 | MSD |
| 08/24/2012 | 175 | 438 | 226 | MSD |
| 11/20/2012 | 261 | 535 | 459 | MSD |
| 03/19/2013 | 241 | 495 | 40 | MSD |
| 05/23/2013 | 319 | 494 | 172 | MSD |

SP003

| Sample Date | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Sample Taker |
|---|---|---|---|---|
| 08/19/2011 | 34 | 96 | 15 | MSD |
| 09/12/2011 | 24 | 53 | 15 | Industry |
| 11/15/2011 | 18 | 23 | 7 | Industry |
| 11/29/2011 | 25 | 36 | | MSD |
| 02/09/2012 | 156 | 353 | 31 | Industry |
| 02/14/2012 | 99 | 274 | 85 | MSD |
| 05/09/2012 | 207 | 468 | 170 | Industry |
| 05/10/2012 | 100 | 242 | 68 | MSD |
| 08/07/2012 | 165 | 422 | 34 | Industry |
| 08/24/2012 | 85 | 239 | 42 | MSD |
| 11/02/2012 | 89 | 344 | 46 | Industry |
| 11/20/2012 | 152 | 400 | 118 | MSD |
| 01/08/2013 | 158 | 393 | 65 | Industry |
| 03/19/2013 | 86 | 268 | 40 | MSD |
| 05/01/2013 | 47 | 186 | 59 | Industry |
| 05/23/2013 | 70 | 123 | 92 | MSD |

SP005

| Sample Date | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Sample Taker |
|---|---|---|---|---|
| 08/19/2011 | 135 | 294 | 14 | MSD |
| 09/12/2011 | 5 | 50 | 6 | Industry |
| 11/15/2011 | 84 | 230 | 5 | Industry |
| 11/29/2011 | 482 | 793 | 10 | MSD |
| 02/09/2012 | 65 | 134 | 6 | Industry |
| 02/14/2012 | 1,060 | 1,577 | 12 | MSD |
| 05/09/2012 | 129 | 193 | 14 | Industry |
| 05/10/2012 | 209 | 297 | 32 | MSD |
| 08/07/2012 | 14 | 56 | 6 | Industry |
| 08/24/2012 | 81 | 440 | 3 | MSD |
| 11/02/2012 | 21 | 50 | 6 | Industry |
| 11/20/2012 | 71 | 141 | 4 | MSD |
| 01/08/2013 | 40 | 60 | 6 | Industry |
| 03/19/2013 | 68 | 111 | 6 | MSD |
| 05/01/2013 | 70 | 222 | 17 | Industry |
| 05/23/2013 | 28 | 72 | 12 | MSD |

SP009

| Sample Date | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Sample Taker |
|---|---|---|---|---|
| 01/08/2013 | 24 | 66 | 10 | MSD |
| 09/12/2011 | 5 | 50 | 6 | Industry |
| 11/15/2011 | 9 | 50 | 6 | Industry |
| 11/29/2011 | 21 | 40 | | MSD |
| 02/09/2012 | 507 | 1,220 | 128 | Industry |
| 02/14/2012 | 97 | 310 | 42 | MSD |
| 05/09/2012 | 270 | 468 | 135 | Industry |
| 05/10/2012 | 112 | 246 | 76 | MSD |
| 08/07/2012 | 385 | 993 | 72 | Industry |
| 08/24/2012 | 215 | 537 | 80 | MSD |
| 11/02/2012 | 160 | 426 | 86 | Industry |
| 11/20/2012 | 104 | 309 | 25 | MSD |
| 01/08/2013 | 270 | 608 | 60 | Industry |
| 03/19/2013 | 129 | 278 | 40 | MSD |
| 05/01/2013 | 31 | 152 | 25 | Industry |
| 05/23/2013 | 54 | 107 | 25 | MSD |

SP010

| Sample Date | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Sample Taker |
|---|---|---|---|---|
| 08/19/2011 | 558 | 1,220 | 72 | MSD |
| 09/12/2011 | 635 | 1,090 | 327 | Industry |
| 11/15/2011 | 1,310 | 1,640 | 456 | Industry |
| 11/29/2011 | 641 | 1,156 | 105 | MSD |
| 02/09/2012 | 494 | 850 | 83 | Industry |
| 02/14/2012 | 648 | 1,378 | 138 | MSD |
| 05/09/2012 | 530 | 813 | 88 | Industry |
| 08/07/2012 | 245 | 876 | 154 | Industry |
| 08/24/2012 | 647 | 1,218 | 110 | MSD |
| 11/02/2012 | 590 | 1,380 | 40 | Industry |
| 11/20/2012 | 500 | 1,351 | 93 | MSD |
| 01/08/2013 | 230 | 605 | 39 | Industry |
| 03/19/2013 | 699 | 1,292 | 112 | MSD |
| 05/01/2013 | 525 | 1,330 | 22 | Industry |
| 05/23/2013 | 139 | 379 | 128 | MSD |

bv

pc: Brian Gibson
Doug Mendoza

FILE: IU, Mallinckrodt LLC, 1011728100

**MEMO TO:** Chris Verplancke
Rebecca Bartholomew
Mary Wimsatt
Finance Department

**FROM:** Darin Lewis

**DATE:** September 30, 2013

**SUBJECT:** Surcharge Changes

We recommend that the new surcharge values below be applied to the following account effective September 2013.

**Account No:** **0118821-8**

**Company:** **MALLINCKRODT LLC**

**Premise:** **3600 North 2nd Street**
**St. Louis, MO 63147**

| | TSS | BOD | COD |
|---|---|---|---|
| New Surcharge Values (mg/L): | 112 | 520 | 1,039 |
| Old Surcharge Values (mg/L): | 68 | 415 | 825 |

This change was initiated by the District. The surcharge values represent the average of 16 composite samples collected between August 19, 2011 and May 23, 2013.

Based on a wastewater discharge of 478,406 CCF, this equates to an estimated annual revenue increase to the District of $97,191.96.

If you have any questions, please call me at 436-8716.

bv

pc: Brian Gibson
Doug Mendoza
Scott Rehmer
Laura Joiner

FILE: IU, Mallinckrodt LLC, 1011728100

## EXTRA STRENGTH SURCHARGE REVIEW CHECKLIST

Reviewed by: D Lewis Date: 8-20-13 Checked by: [illegible] Date: 8-21-13

Review PIMS, ECIS, industry file, and permit file.

1) Company name: Mallinckrodt LLC

2) Primary PIMS account number: 101/728100 and it's ECIS account number: 0118821-8

3) Premise address: 3600 North 2nd Street St. Louis MO 63147

4) Is discharge greater than 60,000 gallon(80 CcF)/month, considering RF? ☑ Yes ☐ No
If no, take no further action.

5) Is company currently in surcharge? ☑ Yes ☐ No
If yes, last recertification date: 7-2-11 and do current surcharge values match ECIS, including related accounts? ☑ Yes ☐ No

If no, explain:

6) Reason for surcharge action: ☑ Bi-Annual Review ☐ Customer Requested ☐ Other

If other, comment:

7) Number of work shifts per day. Identify hours of work and brief process description:
1st: 7:00 Am 24 hours/7 days FDA drugs
2nd: 3:20 pm Industrial chemicals
3rd: 11:10 pm

8) Are sample collection times representative of facility work shifts? ☑ Yes ☐ No

If no, comment:

9) Update Surcharge status Log: ☑ Yes

10) New surcharge concentrations (mg/L): BOD 520 COD 1,039 TSS 112
Final surcharge concentrations (mg/L): BOD ____ COD ____ TSS ____
11) Old surcharge concentrations (mg/L): BOD 415 COD 825 TSS 68

12) Comment on changes in wastewater strength:

13) Send Notification letter to: Amber Crouch

14) Other related sewer accounts to be billed surcharges: N/A

15) Waiting for IUQ? ☐ Yes ☐ No If surcharge is removed or decreased, check with DEC IU assigned inspector to review if we are waiting for an IUQ. We will refrain granting changes until IU provides the inspector with the required information.

16) Recertification Comments

17) Memo to Finance, date: 9-30-13

18) Enter final surcharge billing values into PIMS and Surcharge Log file, date: 9-30-13

19) Additional sample data forwarded to Pretreatment unit for PIMS entry: ☐ Yes ☑ N/A

Attachments
Surcharge calculation, first pass, all data dated: 8-20-13
Surcharge calculation, first pass, MSD data dated:
Surcharge calculation, first pass, IND data dated:
Surcharge calculation, final data dated:
MSD letters, dated:
Industry letters, dated:

Rev.5/07 rab

N:\Envcom\EXEC\ENVCOM\CostRecovery\Surcharge\E5.Checklist.DOC
FILE: IU

# SURCHARGE CALCULATOR

Date:8/20/2013
File:o:\envcom\surcharg\1011728100-2013

Sum of Discharge Factors: 0.99

| Sampling Point: | 001 | | | Discharge factor: | 0.00 | | Flow: | 1001 | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 08/19/2011 | N/A | | | yes | 34 | 74 | 92 | 6 | MSD |
| 2 | 02/14/2012 | N/A | | | yes | 28 | 88 | 27 | 3 | MSD |
| 3 | 05/10/2012 | N/A | | | yes | 71 | 155 | 316 | 5 | MSD |
| 4 | 08/24/2012 | N/A | | | yes | 16 | 56 | 57 | 6 | MSD |
| 5 | 11/20/2012 | N/A | | | yes | 18 | 124 | 22 | 3 | MSD |
| 6 | 03/19/2013 | N/A | | | yes | 2 | 13 | 9 | 3 | MSD |
| 7 | 05/23/2013 | N/A | | | yes | 26 | 20 | 2 | 5 | MSD |
| 8 | | | | | | | | | | |
| 9 | | N/A | | | N/A | | | | N/A | |
| 10 | | N/A | | | N/A | | | | N/A | |
| 11 | | N/A | | | N/A | | | | N/A | |
| 12 | | N/A | | | N/A | | | | N/A | |
| 13 | | N/A | | | N/A | | | | N/A | |
| 14 | | N/A | | | N/A | | | | N/A | |
| 15 | | N/A | | | N/A | | | | N/A | |
| 16 | | N/A | | | N/A | | | | N/A | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 195 | 530 | 525 | | |
| | | | | | Average: | 28 | 76 | 75 | | |
| | | | | | Weighted Average: | 0 | 0 | 0 | | |

1=Sun, 2=Mon, 3=Tue, 4=Wed, 5=Thur, 6=Fri, 7=Sat

| Sampling Point: | 002 | | | Discharge factor: | 0.00 | | Flow: | 2200 | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 08/19/2011 | N/A | | | yes | 18 | 60 | 21 | 6 | MSD |
| 2 | 11/29/2011 | N/A | | | yes | 123 | 200 | 76 | 3 | MSD |
| 3 | 02/14/2012 | N/A | | | yes | 379 | 875 | 280 | 3 | MSD |
| 4 | 05/10/2012 | N/A | | | yes | 823 | 1476 | 192 | 5 | MSD |
| 5 | 08/24/2012 | N/A | | | yes | 175 | 438 | 226 | 6 | MSD |
| 6 | 11/20/2012 | N/A | | | yes | 261 | 535 | 459 | 3 | MSD |
| 7 | 03/19/2013 | N/A | | | yes | 241 | 495 | 40 | 3 | MSD |
| 8 | 05/23/2013 | N/A | | | yes | 319 | 494 | 172 | 5 | MSD |
| 9 | | N/A | | | N/A | | | | N/A | |
| 10 | | N/A | | | N/A | | | | N/A | |
| 11 | | N/A | | | N/A | | | | N/A | |
| 12 | | N/A | | | N/A | | | | N/A | |
| 13 | | N/A | | | N/A | | | | N/A | |
| 14 | | N/A | | | N/A | | | | N/A | |
| 15 | | N/A | | | N/A | | | | N/A | |
| 16 | | N/A | | | N/A | | | | N/A | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 2339 | 4573 | 1466 | | |
| | | | | | Average: | 292 | 572 | 183 | | |
| | | | | | Weighted Average: | 1 | 1 | 0 | | |

| Sampling Point: | 003 | | | Discharge factor: | 0.02 | | Flow: | #### | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 08/19/2011 | N/A | | | yes | 34 | 96 | 15 | 6 | MSD |
| 2 | 09/12/2011 | N/A | | | yes | 24 | 53 | 15 | 2 | Industry |
| 3 | 11/15/2011 | N/A | | | yes | 18 | 23 | 7 | 3 | Industry |
| 4 | 11/29/2011 | N/A | | | yes | 25 | 36 | | 3 | MSD |
| 5 | 02/09/2012 | N/A | | | yes | 156 | 353 | 31 | 5 | Industry |
| 6 | 02/14/2012 | N/A | | | yes | 99 | 274 | 85 | 3 | MSD |
| 7 | 05/09/2012 | N/A | | | yes | 207 | 468 | 170 | 4 | Industry |
| 8 | 05/10/2012 | N/A | | | yes | 100 | 242 | 68 | 5 | MSD |
| 9 | 08/07/2012 | N/A | | | yes | 165 | 422 | 34 | 3 | Industry |
| 10 | 08/24/2012 | N/A | | | yes | 85 | 239 | 42 | 6 | MSD |
| 11 | 11/02/2012 | N/A | | | yes | 89 | 344 | 46 | 6 | Industry |
| 12 | 11/20/2012 | N/A | | | yes | 152 | 400 | 118 | 3 | MSD |
| 13 | 01/08/2013 | N/A | | | yes | 158 | 393 | 65 | 3 | Industry |
| 14 | 03/19/2013 | N/A | | | yes | 86 | 268 | 40 | 3 | MSD |
| 15 | 05/01/2013 | N/A | | | yes | 47 | 186 | 59 | 4 | Industry |
| 16 | 05/23/2013 | N/A | | | yes | 70 | 123 | 92 | 5 | MSD |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 1515 | 3920 | 887 | | |
| | | | | | Average: | 95 | 245 | 59 | | |
| | | | | | Weighted Average: | 2 | 6 | 1 | | |

**General Information:**

| | |
|---|---|
| Calculated by: | Darin Lewis |
| Facility name: | Mallinckrodt LLC |
| Account No: | 1011728100 |
| Last recertification date: | 7/21/2011 |

**Volume:**

| | | |
|---|---|---|
| First meter reading date: | 8/1/2012 | |
| Last meter reading date: | 8/1/2013 | |
| Total Volume: | 498340 | CcF |
| RF: | 0.96 | |
| Annualized volume: | 478406 | CcF |
| Monthly volume: | 39867 | CcF |

**Surcharge Values:**

| | Previous | | New | |
|---|---|---|---|---|
| BOD: | 415 | mg/L | 520 | mg/L |
| COD: | 825 | mg/L | 1,039 | mg/L |
| TSS: | 68 | mg/L | 112 | mg/L |

**Surcharge Calculations:**

| | | | | |
|---|---|---|---|---|
| BOD in normal wastewater: | 300 | mg/L | | |
| COD in normal wastewater: | 600 | mg/L | | |
| TSS in normal wastewater: | 300 | mg/L | | |
| | | | Ordiannce: | 13402 |
| Current BOD rate: | $ 620.14 | / ton | Effective: | 7/1/2013 |
| Current COD rate: | $ 310.07 | / ton | Effective: | 7/1/2013 |
| Current TSS rate: | $ 231.35 | / ton | Effective: | 7/1/2013 |

Conversion factor (mg/L to tons/CcF): 1.493

| | Previous | New |
|---|---|---|
| Estimated BOD surcharge: | $ 106,448.34 | $ 203,640.30 |
| Estimated COD surcharge: | $ 104,134.24 | $ 203,177.48 |
| Estimated TSS surcharge: | $ - | $ - |
| BOD/COD: | 0.5 | 0.5 |

Use zero if BOD or COD = zero

| | Previous | New | Change |
|---|---|---|---|
| **Estimated annual surcharge:** | **$ 106,448.34** | **$ 203,640.30** | **$ 97,191.96** |

**Comments:**

First pass calculation, all data: ☐
First pass calculation, MSD data: ☐
First pass calculation, IND data: ☐
Calculation, final data: ☐

| Water Consumption Data: Reading Date | Consumption |
|---|---|
| 8/1/2013 | 21749 |
| 7/1/2013 | 26661 |
| 6/1/2013 | 37578 |
| 5/1/2013 | 36366 |
| 4/1/2013 | 20796 |
| 3/1/2013 | 18784 |
| 2/1/2013 | 76217 |
| 1/1/2013 | 76217 |
| 12/1/2012 | 45239 |
| 11/1/2012 | 46747 |
| 10/1/2012 | 45239 |
| 9/1/2012 | 46747 |
| 8/1/2012 | |
| Total = | 498340 |

# SURCHARGE CALCULATOR

Date:8/20/2013
File:o:\envcom\surcharg\1011728100-2013

| | |
|---|---|
| Calculated by: | Darin Lewis |
| Facility name: | Mallinckrodt LLC |
| Account No: | 1011728100 |
| Last recertification date: | 40745 |

| Sampling Point: | 005 | | | Discharge factor: | 0.03 | | Flow: | #### | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 08/19/2011 | N/A | | | yes | 135 | 294 | 14 | 6 | MSD |
| 2 | 09/12/2011 | N/A | | | yes | 5 | 50 | 6 | 2 | Industry |
| 3 | 11/15/2011 | N/A | | | yes | 84 | 230 | 5 | 3 | Industry |
| 4 | 11/29/2011 | N/A | | | yes | 482 | 793 | 10 | 3 | MSD |
| 5 | 02/09/2012 | N/A | | | yes | 65 | 134 | 6 | 5 | Industry |
| 6 | 02/14/2012 | N/A | | | yes | 1060 | 1577 | 12 | 3 | MSD |
| 7 | 05/09/2012 | N/A | | | yes | 129 | 193 | 14 | 4 | Industry |
| 8 | 05/10/2012 | N/A | | | yes | 209 | 297 | 32 | 5 | MSD |
| 9 | 08/07/2012 | N/A | | | yes | 14 | 56 | 6 | 3 | Industry |
| 10 | 08/24/2012 | N/A | | | yes | 81 | 440 | 3 | 6 | MSD |
| 11 | 11/02/2012 | N/A | | | yes | 21 | 50 | 6 | 6 | Industry |
| 12 | 11/20/2012 | N/A | | | yes | 71 | 141 | 4 | 3 | MSD |
| 13 | 01/08/2013 | N/A | | | yes | 40 | 60 | 6 | 3 | Industry |
| 14 | 03/19/2013 | N/A | | | yes | 68 | 111 | 6 | 3 | MSD |
| 15 | 05/01/2013 | N/A | | | yes | 70 | 222 | 17 | 4 | Industry |
| 16 | 05/23/2013 | N/A | | | yes | 28 | 72 | 12 | 5 | MSD |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 2562 | 4720 | 159 | | |
| | | | | | Average: | 160 | 295 | 10 | | |
| | | | | | Weighted Average: | 4 | 8 | 0 | | |

1=Sun, 2=Mon, 3=Tue, 4=Wed, 5=Thur, 6=Fri, 7=Sat

| Sampling Point: | 009 | | | Discharge factor: | 0.01 | | Flow: | #### | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 01/08/2013 | N/A | | | yes | 24 | 66 | 10 | 3 | MSD |
| 2 | 09/12/2011 | N/A | | | yes | 5 | 50 | 6 | 2 | Industry |
| 3 | 11/15/2011 | N/A | | | yes | 9 | 50 | 6 | 3 | Industry |
| 4 | 11/29/2011 | N/A | | | yes | 21 | 40 | | 3 | MSD |
| 5 | 02/09/2012 | N/A | | | yes | 507 | 1220 | 128 | 5 | Industry |
| 6 | 02/14/2012 | N/A | | | yes | 97 | 310 | 42 | 3 | MSD |
| 7 | 05/09/2012 | N/A | | | yes | 270 | 468 | 135 | 4 | Industry |
| 8 | 05/10/2012 | N/A | | | yes | 112 | 246 | 76 | 5 | MSD |
| 9 | 08/07/2012 | N/A | | | yes | 385 | 993 | 72 | 3 | Industry |
| 10 | 08/24/2012 | N/A | | | yes | 215 | 537 | 80 | 6 | MSD |
| 11 | 11/02/2012 | N/A | | | yes | 160 | 426 | 86 | 6 | Industry |
| 12 | 11/20/2012 | N/A | | | yes | 104 | 309 | 25 | 3 | MSD |
| 13 | 01/08/2013 | N/A | | | yes | 270 | 608 | 60 | 3 | Industry |
| 14 | 03/19/2013 | N/A | | | yes | 129 | 278 | 40 | 3 | MSD |
| 15 | 05/01/2013 | N/A | | | yes | 31 | 152 | 25 | 4 | Industry |
| 16 | 05/23/2013 | N/A | | | yes | 54 | 107 | 25 | 5 | MSD |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 7681 | 15603.009 | 1144 | | |
| | | | | | Average: | 219 | 433 | 34 | | |
| | | | | | Weighted Average: | 2 | 4 | 0 | | |

| Sampling Point: | 010 | | | Discharge factor: | 0.93 | | Flow: | #### | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 08/19/2011 | N/A | | | yes | 558 | 1220 | 72 | 6 | MSD |
| 2 | 09/12/2011 | N/A | | | yes | 635 | 1090 | 327 | 2 | Industry |
| 3 | 11/15/2011 | N/A | | | yes | 1310 | 1640 | 456 | 3 | Industry |
| 4 | 11/29/2011 | N/A | | | yes | 641 | 1156 | 105 | 3 | MSD |
| 5 | 02/09/2012 | N/A | | | yes | 494 | 850 | 83 | 5 | Industry |
| 6 | 02/14/2012 | N/A | | | yes | 648 | 1378 | 138 | 3 | MSD |
| 7 | 05/09/2012 | N/A | | | yes | 530 | 813 | 88 | 4 | Industry |
| 8 | 08/07/2012 | N/A | | | yes | 245 | 876 | 154 | 3 | Industry |
| 9 | 08/24/2012 | N/A | | | yes | 647 | 1218 | 110 | 6 | MSD |
| 10 | 11/02/2012 | N/A | | | yes | 590 | 1380 | 40 | 6 | Industry |
| 11 | 11/20/2012 | N/A | | | yes | 500 | 1351 | 93 | 3 | MSD |
| 12 | 01/08/2013 | N/A | | | yes | 230 | 605 | 39 | 3 | Industry |
| 13 | 03/19/2013 | N/A | | | yes | 699 | 1292 | 112 | 3 | MSD |
| 14 | 05/01/2013 | N/A | | | yes | 525 | 1330 | 22 | 4 | Industry |
| 15 | 05/23/2013 | N/A | | | yes | 139 | 379 | 128 | 5 | MSD |
| 16 | | | | | | | | | | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 18686 | 38478.937 | 3961 | | |
| | | | | | Average: | 550 | 1099 | 120 | | |
| | | | | | Weighted Average: | 511 | 1020 | 111 | | |

# SURCHARGE CALCULATOR

Date:8/21/2013
File:o:\envcom\surcharg\1011728100-2013

Sum of Discharge Factors: 0.99

| Sampling Point: | 001 | | | Discharge factor: | 0.00 | | Flow: | 1001 | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 08/19/2011 | N/A | | | yes | 34 | 74 | 92 | 6 | MSD |
| 2 | 02/14/2012 | N/A | | | yes | 28 | 88 | 27 | 3 | MSD |
| 3 | 05/10/2012 | N/A | | | yes | 71 | 155 | 316 | 5 | MSD |
| 4 | 08/24/2012 | N/A | | | yes | 16 | 56 | 57 | 6 | MSD |
| 5 | 11/20/2012 | N/A | | | yes | 18 | 124 | 22 | 3 | MSD |
| 6 | 03/19/2013 | N/A | | | yes | 2 | 13 | 9 | 3 | MSD |
| 7 | 05/23/2013 | N/A | | | yes | 26 | 20 | 2 | 5 | MSD |
| 8 | | | | | | | | | | |
| 9 | | N/A | | | N/A | | | | N/A | |
| 10 | | N/A | | | N/A | | | | N/A | |
| 11 | | N/A | | | N/A | | | | N/A | |
| 12 | | N/A | | | N/A | | | | N/A | |
| 13 | | N/A | | | N/A | | | | N/A | |
| 14 | | N/A | | | N/A | | | | N/A | |
| 15 | | N/A | | | N/A | | | | N/A | |
| 16 | | N/A | | | N/A | | | | N/A | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 195 | 530 | 525 | | |
| | | | | | Average: | 28 | 76 | 75 | | |
| | | | | | Weighted Average: | 0 | 0 | 0 | | |

1=Sun, 2=Mon, 3=Tue, 4=Wed, 5=Thur, 6=Fri, 7=Sat

| Sampling Point: | 002 | | | Discharge factor: | 0.00 | | Flow: | 2200 | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 08/19/2011 | N/A | | | yes | 18 | 60 | 21 | 6 | MSD |
| 2 | 11/29/2011 | N/A | | | yes | 123 | 200 | 76 | 3 | MSD |
| 3 | 02/14/2012 | N/A | | | yes | 379 | 875 | 280 | 3 | MSD |
| 4 | 05/10/2012 | N/A | | | yes | 823 | 1476 | 192 | 5 | MSD |
| 5 | 08/24/2012 | N/A | | | yes | 175 | 438 | 226 | 6 | MSD |
| 6 | 11/20/2012 | N/A | | | yes | 261 | 535 | 459 | 3 | MSD |
| 7 | 03/19/2013 | N/A | | | yes | 241 | 495 | 40 | 3 | MSD |
| 8 | 05/23/2013 | N/A | | | yes | 319 | 494 | 172 | 5 | MSD |
| 9 | | N/A | | | N/A | | | | N/A | |
| 10 | | N/A | | | N/A | | | | N/A | |
| 11 | | N/A | | | N/A | | | | N/A | |
| 12 | | N/A | | | N/A | | | | N/A | |
| 13 | | N/A | | | N/A | | | | N/A | |
| 14 | | N/A | | | N/A | | | | N/A | |
| 15 | | N/A | | | N/A | | | | N/A | |
| 16 | | N/A | | | N/A | | | | N/A | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 2339 | 4573 | 1466 | | |
| | | | | | Average: | 292 | 572 | 183 | | |
| | | | | | Weighted Average: | 1 | 1 | 0 | | |

| Sampling Point: | 003 | | | Discharge factor: | 0.02 | | Flow: | #### | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 08/19/2011 | N/A | | | yes | 34 | 96 | 15 | 6 | MSD |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | 11/29/2011 | N/A | | | yes | 25 | 36 | | 3 | MSD |
| 5 | | | | | | | | | | |
| 6 | 02/14/2012 | N/A | | | yes | 99 | 274 | 85 | 3 | MSD |
| 7 | | | | | | | | | | |
| 8 | 05/10/2012 | N/A | | | yes | 100 | 242 | 68 | 5 | MSD |
| 9 | | | | | | | | | | |
| 10 | 08/24/2012 | N/A | | | yes | 85 | 239 | 42 | 6 | MSD |
| 11 | | | | | | | | | | |
| 12 | 11/20/2012 | N/A | | | yes | 152 | 400 | 118 | 3 | MSD |
| 13 | | | | | | | | | | |
| 14 | 03/19/2013 | N/A | | | yes | 86 | 268 | 40 | 3 | MSD |
| 15 | | | | | | | | | | |
| 16 | 05/23/2013 | N/A | | | yes | 70 | 123 | 92 | 5 | MSD |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 651 | 1678 | 460 | | |
| | | | | | Average: | 81 | 210 | 66 | | |
| | | | | | Weighted Average: | 2 | 5 | 2 | | |

**General Information:**

| | |
|---|---|
| Calculated by: | Darin Lewis |
| Facility name: | Mallinckrodt LLC |
| Account No: | 1011728100 |
| Last recertification date: | 7/21/2011 |

**Volume:**

| | | |
|---|---|---|
| First meter reading date: | 8/1/2012 | |
| Last meter reading date: | 8/1/2013 | |
| Total Volume: | 498340 | CcF |
| RF: | 0.96 | |
| Annualized volume: | 478406 | CcF |
| Monthly volume: | 39867 | CcF |

**Surcharge Values:**

| | Previous | | New | |
|---|---|---|---|---|
| BOD: | 415 | mg/L | 537 | mg/L |
| COD: | 825 | mg/L | 1,009 | mg/L |
| TSS: | 68 | mg/L | 88 | mg/L |

**Surcharge Calculations:**

| | | | | |
|---|---|---|---|---|
| BOD in normal wastewater: | 300 | mg/L | | |
| COD in normal wastewater: | 600 | mg/L | | |
| TSS in normal wastewater: | 300 | mg/L | | |
| | | | Ordiannce: | 13402 |
| Current BOD rate: | $ 620.14 | / ton | Effective: | 7/1/2013 |
| Current COD rate: | $ 310.07 | / ton | Effective: | 7/1/2013 |
| Current TSS rate: | $ 231.35 | / ton | Effective: | 7/1/2013 |

Conversion factor (mg/L to tons/CcF): 1.493

| | Previous | New |
|---|---|---|
| Estimated BOD surcharge: | $ 106,448.34 | $ 219,376.14 |
| Estimated COD surcharge: | $ 104,134.24 | $ 189,292.91 |
| Estimated TSS surcharge: | $ - | $ - |
| BOD/COD: | 0.5 | 0.53 |

Use zero if BOD or COD = zero

| | Previous | New | Change |
|---|---|---|---|
| **Estimated annual surcharge:** | **$ 106,448.34** | **$ 219,376.14** | **$ 112,927.80** |

**Comments:**

First pass calculation, all data: ☐
First pass calculation, MSD data: ☐
First pass calculation, IND data: ☐
Calculation, final data: ☐

| Water Consumption Data: Reading Date | Consumption |
|---|---|
| 8/1/2013 | 21749 |
| 7/1/2013 | 26661 |
| 6/1/2013 | 37578 |
| 5/1/2013 | 36366 |
| 4/1/2013 | 20796 |
| 3/1/2013 | 18784 |
| 2/1/2013 | 76217 |
| 1/1/2013 | 76217 |
| 12/1/2012 | 45239 |
| 11/1/2012 | 46747 |
| 10/1/2012 | 45239 |
| 9/1/2012 | 46747 |
| 8/1/2012 | |
| Total = | 498340 |

# SURCHARGE CALCULATOR

Date:8/21/2013
File:o:\envcom\surcharg\1011728100-2013

| | |
|---|---|
| Calculated by: | Darin Lewis |
| Facility name: | Mallinckrodt LLC |
| Account No: | 1011728100 |
| Last recertification date: | 40745 |

| Sampling Point: | 005 | | | Discharge factor: | 0.03 | | Flow: | #### | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 08/19/2011 | N/A | | | yes | 135 | 294 | 14 | 6 | MSD |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | 11/29/2011 | N/A | | | yes | 482 | 793 | 10 | 3 | MSD |
| 5 | | | | | | | | | | |
| 6 | 02/14/2012 | N/A | | | yes | 1060 | 1577 | 12 | 3 | MSD |
| 7 | | | | | | | | | | |
| 8 | 05/10/2012 | N/A | | | yes | 209 | 297 | 32 | 5 | MSD |
| 9 | | | | | | | | | | |
| 10 | 08/24/2012 | N/A | | | yes | 81 | 440 | 3 | 6 | MSD |
| 11 | | | | | | | | | | |
| 12 | 11/20/2012 | N/A | | | yes | 71 | 141 | 4 | 3 | MSD |
| 13 | | | | | | | | | | |
| 14 | 03/19/2013 | N/A | | | yes | 68 | 111 | 6 | 3 | MSD |
| 15 | | | | | | | | | | |
| 16 | 05/23/2013 | N/A | | | yes | 28 | 72 | 12 | 5 | MSD |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 2134 | 3725 | 93 | | |
| | | | | | Average: | 267 | 466 | 12 | | |
| | | | | | Weighted Average: | 7 | 12 | 0 | | |

1=Sun, 2=Mon, 3=Tue, 4=Wed, 5=Thur, 6=Fri, 7=Sat

| Sampling Point: | 009 | | | Discharge factor: | 0.01 | | Flow: | #### | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 01/08/2013 | N/A | | | yes | 24 | 66 | 10 | 3 | MSD |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | 11/29/2011 | N/A | | | yes | 21 | 40 | | 3 | MSD |
| 5 | | | | | | | | | | |
| 6 | 02/14/2012 | N/A | | | yes | 97 | 310 | 42 | 3 | MSD |
| 7 | | | | | | | | | | |
| 8 | 05/10/2012 | N/A | | | yes | 112 | 246 | 76 | 5 | MSD |
| 9 | | | | | | | | | | |
| 10 | 08/24/2012 | N/A | | | yes | 215 | 537 | 80 | 6 | MSD |
| 11 | | | | | | | | | | |
| 12 | 11/20/2012 | N/A | | | yes | 104 | 309 | 25 | 3 | MSD |
| 13 | | | | | | | | | | |
| 14 | 03/19/2013 | N/A | | | yes | 129 | 278 | 40 | 3 | MSD |
| 15 | | | | | | | | | | |
| 16 | 05/23/2013 | N/A | | | yes | 54 | 107 | 25 | 5 | MSD |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 5298 | 9821.0091 | 496 | | |
| | | | | | Average: | 279 | 491 | 28 | | |
| | | | | | Weighted Average: | 3 | 4 | 0 | | |

| Sampling Point: | 010 | | | Discharge factor: | 0.93 | | Flow: | #### | GPD |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | 08/19/2011 | N/A | | | yes | 558 | 1220 | 72 | 6 | MSD |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | 11/29/2011 | N/A | | | yes | 641 | 1156 | 105 | 3 | MSD |
| 5 | | | | | | | | | | |
| 6 | 02/14/2012 | N/A | | | yes | 648 | 1378 | 138 | 3 | MSD |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | 08/24/2012 | N/A | | | yes | 647 | 1218 | 110 | 6 | MSD |
| 10 | | | | | | | | | | |
| 11 | 11/20/2012 | N/A | | | yes | 500 | 1351 | 93 | 3 | MSD |
| 12 | | | | | | | | | | |
| 13 | 03/19/2013 | N/A | | | yes | 699 | 1292 | 112 | 3 | MSD |
| 14 | | | | | | | | | | |
| 15 | 05/23/2013 | N/A | | | yes | 139 | 379 | 128 | 5 | MSD |
| 16 | | | | | | | | | | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 10168 | 20203.937 | 1580 | | |
| | | | | | Average: | 565 | 1063 | 93 | | |
| | | | | | Weighted Average: | 524 | 987 | 86 | | |

# SURCHARGE CALCULATOR

Date:8/21/2013
File:o:\envcom\surcharg\1011728100-2013

Sum of Discharge Factors: 0.99

| Sampling Point: 001 | | | | Discharge factor: 0.00 | | | Flow: 1001 GPD | | |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | N/A | | | N/A | | | | N/A | |
| 10 | | N/A | | | N/A | | | | N/A | |
| 11 | | N/A | | | N/A | | | | N/A | |
| 12 | | N/A | | | N/A | | | | N/A | |
| 13 | | N/A | | | N/A | | | | N/A | |
| 14 | | N/A | | | N/A | | | | N/A | |
| 15 | | N/A | | | N/A | | | | N/A | |
| 16 | | N/A | | | N/A | | | | N/A | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 0 | 0 | 0 | | |
| | | | | | Average: | 0 | 0 | 0 | | |
| | | | | | Weighted Average: | 0 | 0 | 0 | | |

1=Sun, 2=Mon, 3=Tue, 4=Wed, 5=Thur, 6=Fri, 7=Sat

| Sampling Point: 002 | | | | Discharge factor: 0.00 | | | Flow: 2200 GPD | | |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | N/A | | | N/A | | | | N/A | |
| 10 | | N/A | | | N/A | | | | N/A | |
| 11 | | N/A | | | N/A | | | | N/A | |
| 12 | | N/A | | | N/A | | | | N/A | |
| 13 | | N/A | | | N/A | | | | N/A | |
| 14 | | N/A | | | N/A | | | | N/A | |
| 15 | | N/A | | | N/A | | | | N/A | |
| 16 | | N/A | | | N/A | | | | N/A | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 0 | 0 | 0 | | |
| | | | | | Average: | 0 | 0 | 0 | | |
| | | | | | Weighted Average: | 0 | 0 | 0 | | |

| Sampling Point: 003 | | | | Discharge factor: 0.02 | | | Flow: #### GPD | | |
|---|---|---|---|---|---|---|---|---|---|
| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
| 1 | | | | | | | | | | |
| 2 | 09/12/2011 | N/A | | | yes | 24 | 53 | 15 | 2 | Industry |
| 3 | 11/15/2011 | N/A | | | yes | 18 | 23 | 7 | 3 | Industry |
| 4 | | | | | | | | | | |
| 5 | 02/09/2012 | N/A | | | yes | 156 | 353 | 31 | 5 | Industry |
| 6 | | | | | | | | | | |
| 7 | 05/09/2012 | N/A | | | yes | 207 | 468 | 170 | 4 | Industry |
| 8 | | | | | | | | | | |
| 9 | 08/07/2012 | N/A | | | yes | 165 | 422 | 34 | 3 | Industry |
| 10 | | | | | | | | | | |
| 11 | 11/02/2012 | N/A | | | yes | 89 | 344 | 46 | 6 | Industry |
| 12 | | | | | | | | | | |
| 13 | 01/08/2013 | N/A | | | yes | 158 | 393 | 65 | 3 | Industry |
| 14 | | | | | | | | | | |
| 15 | 05/01/2013 | N/A | | | yes | 47 | 186 | 59 | 4 | Industry |
| 16 | | | | | | | | | | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 864 | 2242 | 427 | | |
| | | | | | Average: | 108 | 280 | 53 | | |
| | | | | | Weighted Average: | 3 | 7 | 1 | | |

**General Information:**

| | |
|---|---|
| Calculated by: | Darin Lewis |
| Facility name: | Mallinckrodt LLC |
| Account No: | 1011728100 |
| Last recertification date: | 7/21/2011 |

**Volume:**

| | |
|---|---|
| First meter reading date: | 8/1/2012 |
| Last meter reading date: | 8/1/2013 |
| Total Volume: | 498340 CcF |
| RF: | 0.96 |
| Annualized volume: | 478406 CcF |
| Monthly volume: | 39867 CcF |

**Surcharge Values:**

| | Previous | | New | |
|---|---|---|---|---|
| BOD: | 415 | mg/L | 424 | mg/L |
| COD: | 825 | mg/L | 867 | mg/L |
| TSS: | 68 | mg/L | 119 | mg/L |

**Surcharge Calculations:**

| | | | | |
|---|---|---|---|---|
| BOD in normal wastewater: | 300 | mg/L | | |
| COD in normal wastewater: | 600 | mg/L | | |
| TSS in normal wastewater: | 300 | mg/L | | |
| | | | Ordiannce: | 13402 |
| Current BOD rate: | $ 620.14 | / ton | Effective: | 7/1/2013 |
| Current COD rate: | $ 310.07 | / ton | Effective: | 7/1/2013 |
| Current TSS rate: | $ 231.35 | / ton | Effective: | 7/1/2013 |

Conversion factor (mg/L to tons/CcF): 1.493

| | Previous | New |
|---|---|---|
| Estimated BOD surcharge: | $ 106,448.34 | $ 114,779.08 |
| Estimated COD surcharge: | $ 104,134.24 | $ 123,572.63 |
| Estimated TSS surcharge: | $ - | $ - |
| BOD/COD: | 0.5 | 0.49 |

Use zero if BOD or COD = zero

| | Previous | New | Change |
|---|---|---|---|
| **Estimated annual surcharge:** | **$ 106,448.34** | **$ 114,779.08** | **$ 8,330.74** |

**Comments:**

First pass calculation, all data: ☐
First pass calculation, MSD data: ☐
First pass calculation, IND data: ☐
Calculation, final data: ☐

| Water Consumption Data: Reading Date | Consumption |
|---|---|
| 8/1/2013 | 21749 |
| 7/1/2013 | 26661 |
| 6/1/2013 | 37578 |
| 5/1/2013 | 36366 |
| 4/1/2013 | 20796 |
| 3/1/2013 | 18784 |
| 2/1/2013 | 76217 |
| 1/1/2013 | 76217 |
| 12/1/2012 | 45239 |
| 11/1/2012 | 46747 |
| 10/1/2012 | 45239 |
| 9/1/2012 | 46747 |
| 8/1/2012 | |
| Total = | 498340 |

# SURCHARGE CALCULATOR

Date:8/21/2013
File:o:\envcom\surcharg\1011728100-2013

| | |
|---|---|
| Calculated by: | Darin Lewis |
| Facility name: | Mallinckrodt LLC |
| Account No: | 1011728100 |
| Last recertification date: | 40745 |

Sampling Point: 005 | Discharge factor: 0.03 | Flow: ### | GPD

| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | 09/12/2011 | N/A | | | yes | 5 | 50 | 6 | 2 | Industry |
| 3 | 11/15/2011 | N/A | | | yes | 84 | 230 | 5 | 3 | Industry |
| 4 | | | | | | | | | | |
| 5 | 02/09/2012 | N/A | | | yes | 65 | 134 | 6 | 5 | Industry |
| 6 | | | | | | | | | | |
| 7 | 05/09/2012 | N/A | | | yes | 129 | 193 | 14 | 4 | Industry |
| 8 | | | | | | | | | | |
| 9 | 08/07/2012 | N/A | | | yes | 14 | 56 | 6 | 3 | Industry |
| 10 | | | | | | | | | | |
| 11 | 11/02/2012 | N/A | | | yes | 21 | 50 | 6 | 6 | Industry |
| 12 | | | | | | | | | | |
| 13 | 01/08/2013 | N/A | | | yes | 40 | 60 | 6 | 3 | Industry |
| 14 | | | | | | | | | | |
| 15 | 05/01/2013 | N/A | | | yes | 70 | 222 | 17 | 4 | Industry |
| 16 | | | | | | | | | | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 428 | 995 | 66 | | |
| | | | | | Average: | 54 | 124 | 8 | | |
| | | | | | Weighted Average: | 1 | 3 | 0 | | |

1=Sun, 2=Mon, 3=Tue, 4=Wed, 5=Thur, 6=Fri, 7=Sat

Sampling Point: 009 | Discharge factor: 0.01 | Flow: ### | GPD

| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | 09/12/2011 | N/A | | | yes | 5 | 50 | 6 | 2 | Industry |
| 3 | 11/15/2011 | N/A | | | yes | 9 | 50 | 6 | 3 | Industry |
| 4 | | | | | | | | | | |
| 5 | 02/09/2012 | N/A | | | yes | 507 | 1220 | 128 | 5 | Industry |
| 6 | | | | | | | | | | |
| 7 | 05/09/2012 | N/A | | | yes | 270 | 468 | 135 | 4 | Industry |
| 8 | | | | | | | | | | |
| 9 | 08/07/2012 | N/A | | | yes | 385 | 993 | 72 | 3 | Industry |
| 10 | | | | | | | | | | |
| 11 | 11/02/2012 | N/A | | | yes | 160 | 426 | 86 | 6 | Industry |
| 12 | | | | | | | | | | |
| 13 | 01/08/2013 | N/A | | | yes | 270 | 608 | 60 | 3 | Industry |
| 14 | | | | | | | | | | |
| 15 | 05/01/2013 | N/A | | | yes | 31 | 152 | 25 | 4 | Industry |
| 16 | | | | | | | | | | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 2548 | 6084.0091 | 658 | | |
| | | | | | Average: | 134 | 304 | 35 | | |
| | | | | | Weighted Average: | 1 | 3 | 0 | | |

Sampling Point: 010 | Discharge factor: 0.93 | Flow: ### | GPD

| | Date | Start Time | Type | End Time | 24 hr | BOD (mg/L) | COD (mg/L) | TSS (mg/L) | Day | Sampler |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | 09/12/2011 | N/A | | | yes | 635 | 1090 | 327 | 2 | Industry |
| 3 | 11/15/2011 | N/A | | | yes | 1310 | 1640 | 456 | 3 | Industry |
| 4 | | | | | | | | | | |
| 5 | 02/09/2012 | N/A | | | yes | 494 | 850 | 83 | 5 | Industry |
| 6 | | | | | | | | | | |
| 7 | 05/09/2012 | N/A | | | yes | 530 | 813 | 88 | 4 | Industry |
| 8 | 08/07/2012 | N/A | | | yes | 245 | 876 | 154 | 3 | Industry |
| 9 | | | | | | | | | | |
| 10 | 11/02/2012 | N/A | | | yes | 590 | 1380 | 40 | 6 | Industry |
| 11 | | | | | | | | | | |
| 12 | 01/08/2013 | N/A | | | N/A | 230 | 605 | 39 | N/A | Industry |
| 13 | | | | | | | | | | |
| 14 | 05/01/2013 | N/A | | | yes | 525 | 1330 | 22 | 4 | Industry |
| 15 | 05/23/2013 | N/A | | | yes | 139 | 379 | 128 | 5 | MSD |
| 16 | | | | | | | | | | |
| 17 | | N/A | | | N/A | | | | N/A | |
| 18 | | N/A | | | N/A | | | | N/A | |
| 19 | | N/A | | | N/A | | | | N/A | |
| 20 | | N/A | | | N/A | | | | N/A | |
| | | | | | Total: | 9018 | 19321.937 | 2548 | | |
| | | | | | Average: | 451 | 920 | 127 | | |
| | | | | | Weighted Average: | 419 | 854 | 118 | | |

**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

August 15, 2013

Amber Crouch
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Ms. Crouch:

We have reviewed your application dated August 15, 2013 requesting approval to discharge 500 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is a batch of reduced Diamide solution from Building 507 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. Information provided previously indicated that the reduced Diamide solution is a precursor to the production of imaging product MP104, and that this wastewater will be discharged through sampling point 010.

Based on the information you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary 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.**

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, Mallinckrodt 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, MALLINCKRODT INC [1011728100], 3600 N. 2nd St., St. Louis, Missouri

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt, Inc.

Premise Address: 3600 N. 2nd St.

Evaluated by: SMG

Date: 8/15/13

Send approval letter to applicant

Application Dated: 8/15/13 Received: 8/15/13 All Requested Info. Received: 8/15/13

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.

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

SOURCE TYPE (circle): (IU) / Dead IU / SD

INDUSTRY ID: 10117281-00

Sample Point: No. Assigned: 843 Description: batch of reduced Diamide soln. from Bldg. 507

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: Mallinckrodt
Premise Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt
Contact Person: Amber Crouch
Title: Sr. Env. Specialist
Phone: 314-654-0127 Fax: 314-654-1251

**II. APPLICANT (mailing information):**

Applicant Name: Amber Crouch
Title: EHS department
Company Name: Mallinckrodt
Mailing Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314-654-0127 Fax: 314-654-1251

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Reduced Diamide / Water
2. Process/activity generating wastewater:
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 |
|---|---|---|
| Diamide | 33 | % |
| Water | 66 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 500 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: pH adjust @ main outfall SP010
   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): Bldg. 507 to plant sewer to SPD10 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):** Amber Crouch

**Signature:** Amber Crouch **Date:** 8/15/13

**FOR MSD USE ONLY:**

File Name: Mallinckrodt Inc. ID No. 1011728100 Sample Point No. 843

**TO:** Chris Verplancke - Finance Department

**FROM:** Steven M. Grace – DEC SMG

**DATE:** August 1, 2013

**RE:** **Wastewater User Charge Billing for Special Discharge**

Please bill, by invoice, the following charges applicable to an on-site special discharge approved in our letter dated October 30, 1998, as modified in letters dated November 20, 1998, July 19, 1999, March 28, 2001, October 13, 2004, June 19, 2006, May 22, 2008, May 10, 2010, and May 24, 2012. The discharge dates and quantity are from information submitted by Sharon Cotner, Corps of Engineers, in a letter dated July 31, 2013.

This charge is based on the rates in MSD Wastewater User Charge Ordinance 13042. Please note that, as of July 1, 2013, the volume charge of $2.50 per 100 cubic feet of wastewater became effective.

**PARTY TO BILL:** **Larry Joellenbeck**
**The Shaw Group Inc.**
**1 Angelrodt Street**
**St. Louis, MO 63147**

**BILLING IS FOR:** **On-Site Special Discharge**

**DISCHARGE PERIOD:** **April through June 2013**

**SOURCE OF WASTE:** **Treated construction water from the St. Louis Downtown FUSRAP Site located at Mallinckrodt, Inc., 3600 N. Second Street, St. Louis, Missouri.**

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| 4/1/13 - 6/30/13 | Volume | 803 | CcF | $2.28 | $1,830.84 |
| Totals: | --- | 803 | CcF | --- | $1,830.84 |

If you have any questions, please call me on extension 8755.

bv

ec: Becky Bartholomew – Finance Dept.
Mary Wimsatt – Finance Dept.
Laura Joiner – Finance Dept.
Brian Gibson
Doug Mendoza
Larry Joellenbeck, The Shaw Group Inc., 1 Angelrodt St., St. Louis, MO 63147

File: IU, MALLINCKRODT INC [1011728100]

SMG - ✓

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

July 31, 2013

Formerly Utilized Sites Remedial Action Program (FUSRAP)

SUBJECT: Quarterly Metropolitan Sewer District (MSD) Self-Monitoring Report for April through June 2013, FUSRAP St. Louis Sites

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

RECEIVED
AUG 01 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Dear Mr. Grace:

During the second quarter of 2013, three batches of wastewater from the North St. Louis County Sites were discharged to the MSD. Batch 282 occurred late in the first quarter of CY 2013 and is included in this report. Batch 285 occurred late in the second quarter of CY 2013 and will be included in the third quarter of 2013 report. For the batches reported in this quarter, 579,182 gallons of wastewater were discharged with activities of 4.0E-06 curies of thorium, 2.0E-05 curies of uranium, and 3.3E-06 curies of radium. All three batches (Batch 282, Batch 283, and Batch 284) were from the St. Louis Airport Site Vicinity Properties. Per the MSD letter dated May 24, 2012, the requirement for barium, lead, and selenium analysis after the first two batches from new investigative areas has been removed. Data for each discharge are presented on the attached pages.

During the second quarter of 2013, three batches of wastewater from the St. Louis Downtown Site were discharged to the MSD. Batch 508 occurred late in the first quarter of CY 2013 and is included in this report. Batch 511 occurred late in the second quarter of CY 2013 and will be included in the third quarter of 2013 report. For the batches reported in this quarter, 600,645 gallons of wastewater were discharged with activities of 3.1E-05 curies of thorium, 7.3E-04 curies of uranium, and 6.3E-06 curies of radium. All three batches (Batch 508, Batch 509, and Batch 510) were from Plant 6 West Half. Data for each discharge are presented on the attached pages.

Should you have any comments or questions regarding this letter, please feel free to contact Ms. Laura Ruf at (314) 260-3917.

Sincerely,

Sharon Cotner

Sharon R. Cotner
FUSRAP Program Manager

Enclosures

## FUSRAP North St. Louis County Sites
## Self-Monitoring Report for 2nd Quarter 2013

| Parameter | Batch Number | Date of Discharge | Batch[1] Results | | Amount Discharged (Gallons) | Total Activity[4] per Discharge (Ci) | MSD Limits | | 10CFR20 Limits | | 10CFR20 Sum of Ratios |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Alpha (raw water) | SLAPS-282 [6,7] | 03/13/13 - 03/28/13 | <9 | pCi/L | 327,933 | 5.8E-06 | 3000 | pCi/L | 3000 | pCi/L | |
| Gross Beta | | (Ballfields SLAPS VP) | <12 | pCi/L | | 7.7E-06 | N/A | pCi/L | N/A | pCi/L | |
| TH-228 | | | <0.8 | pCi/L | | 5.2E-07 | 2000 | pCi/L | 2000 | pCi/L | |
| TH-230 | | | 1 | pCi/L | | 1.3E-06 | 1000 | pCi/L | 1000 | pCi/L | |
| Uranium (KPA) | | | 12 | pCi/L | | 1.5E-05 | 3000 | pCi/L | 3000 | pCi/L | |
| RA-226 | | | <2 | pCi/L | | 1.5E-06 | 10 | pCi/L | 600 | pCi/L | |
| RA-228[2] | | | <0.8 | pCi/L | | 5.2E-07 | 30 | pCi/L | 600 | pCi/L | 0.01 |
| Barium | | | [10] | mg/L | | | 10 | mg/L | | | |
| Lead | | | [10] | mg/L | | | 0.40 | mg/L | | | |
| Selenium[5] | | | [10] | mg/L | | | 0.20 | mg/L[5] | | | |
| BOD[3] | | | | mg/L | | | | | | | |
| COD[3] | | | | mg/L | | | | | | | |
| Gross Alpha (TSS filtrate) | | | <9 | pCi/L | | | | | | | |
| Total Suspended Solids | | | 14 | mg/L | | | | | | | |
| Gross Alpha (raw water) | SLAPS-283 [8] | 04/25/13 - 04/29/13 | <9 | pCi/L | 186,830 | 3.3E-06 | 3000 | pCi/L | 3000 | pCi/L | |
| Gross Beta | | (Ballfields SLAPS VP) | <12 | pCi/L | | 4.2E-06 | N/A | pCi/L | N/A | pCi/L | |
| TH-228 | | | <1 | pCi/L | | 3.9E-07 | 2000 | pCi/L | 2000 | pCi/L | |
| TH-230 | | | 2 | pCi/L | | 1.7E-06 | 1000 | pCi/L | 1000 | pCi/L | |
| Uranium (KPA) | | | 5 | pCi/L | | 3.6E-06 | 3000 | pCi/L | 3000 | pCi/L | |
| RA-226 | | | <1 | pCi/L | | 4.5E-07 | 10 | pCi/L | 600 | pCi/L | |
| RA-228[2] | | | <1 | pCi/L | | 3.9E-07 | 30 | pCi/L | 600 | pCi/L | 0.01 |
| Barium | | | [10] | mg/L | | | 10 | mg/L | | | |
| Lead | | | [10] | mg/L | | | 0.40 | mg/L | | | |
| Selenium[5] | | | [10] | mg/L | | | 0.20 | mg/L[5] | | | |
| BOD[3] | | | | mg/L | | | | | | | |
| COD[3] | | | | mg/L | | | | | | | |
| Gross Alpha (TSS filtrate) | | | <9 | pCi/L | | | | | | | |
| Total Suspended Solids | | | 25 | mg/L | | | | | | | |
| Gross Alpha (raw water) | SLAPS-284 [9] | 05/01/13 | <9 | pCi/L | 84,419 | 1.2E-06 | 3000 | pCi/L | 3000 | pCi/L | |
| Gross Beta | | (Ballfields SLAPS VP) | <12 | pCi/L | | 1.5E-06 | N/A | pCi/L | N/A | pCi/L | |
| TH-228 | | | <0.6 | pCi/L | | 6.8E-08 | 2000 | pCi/L | 2000 | pCi/L | |
| TH-230 | | | 2 | pCi/L | | 3.9E-07 | 1000 | pCi/L | 1000 | pCi/L | |
| Uranium (KPA) | | | 6 | pCi/L | | 1.5E-06 | 3000 | pCi/L | 3000 | pCi/L | |
| RA-226 | | | 2 | pCi/L | | 4.0E-07 | 10 | pCi/L | 600 | pCi/L | |
| RA-228[2] | | | <0.6 | pCi/L | | 6.8E-08 | 30 | pCi/L | 600 | pCi/L | 0.01 |
| Barium | | | [10] | mg/L | | | 10 | mg/L | | | |
| Lead | | | [10] | mg/L | | | 0.40 | mg/L | | | |
| Selenium[5] | | | [10] | mg/L | | | 0.20 | mg/L[5] | | | |
| BOD[3] | | | | mg/L | | | | | | | |
| COD[3] | | | | mg/L | | | | | | | |
| Gross Alpha (TSS filtrate) | | | <9 | pCi/L | | | | | | | |
| Total Suspended Solids | | | 37 | mg/L | | | | | | | |

[1] = Non-detect sample results are converted to half the detection limit.
[2] = Ra-228 assumed to be in equilibrium with Th-228
[3] = MSD surcharges apply for BOD concentration > 300 mg/L and COD concentration > 600 mg/L.
[4] = The weighted average was used to calculate the total activity.
[5] = The limit for selenium can be a daily total mass of 76 grams, with a concentration not to exceed 0.90 mg/L. See Attachment 1 for selenium variance calculation.
[6] = Batch 282 occurred late in the First Quarter and is included in this Second Quarter Report.
[7] = See Attachment 2 - Batch 282 Discharge Table
[8] = See Attachment 3 - Batch 283 Discharge Table
[9] = Batch 285 occurred late in the Second Quarter and will be included in the Third Quarter Report.
[10] = Analysis for metals is not required per MSD Letter 05/24/12.
N/A - Not applicable
pCi/L - picocuries per liter
mg/L - milligrams per liter
Ci - curies

**Total Activity Discharged in 2nd Quarter of CY13 (Ci)**

| | |
|---|---|
| TH-228 | 9.8E-07 |
| TH-230 | 3.4E-06 |
| Uranium (KPA) | 2.0E-05 |
| RA-226 | 2.3E-06 |
| RA-228[2] | 9.8E-07 |

**Total Volume for 2nd Quarter of CY13 (gal)**

| | |
|---|---|
| Gallons | 579,182 |

**Total Activity Discharged through 06/30/13 (Ci)**

| | |
|---|---|
| TH-228 | 1.4E-06 |
| TH-230 | 8.8E-06 |
| Uranium (KPA) | 3.9E-05 |
| RA-226 | 3.5E-06 |
| RA-228[2] | 1.4E-06 |

**Volume Discharged through 06/30/13 (gal)**

| | |
|---|---|
| Gallons | 910,497 |

# Attachment 1 2Q13

## FUSRAP North St. Louis County Sites

## Selenium Variance Calculation

| Batch | Date | Se Concentration (mg/L) | Volume (gallons) | Total Mass (Limit - 76 grams) |
|---|---|---|---|---|
| Batch - 282 | 03/13/13 | [1] | 84,934 | N/A |
| | 03/14/13 | [1] | 99,970 | N/A |
| | 03/27/13 | [1] | 79,248 | N/A |
| | 03/28/13 | [1] | 63,781 | N/A |
| Batch - 283 | 04/25/13 | [1] | 91,028 | N/A |
| | 04/29/13 | [1] | 95,802 | N/A |
| Batch - 284 | 05/01/13 | [1] | 64,419 | N/A |

Notes:

[1] = Selenium analysis is not required per MSD Letter 05/24/12.

N/A - not applicable

mg/L - milligrams per Liter

Conversions:

1 Liter = 0.264172 Gallons

1 ug = 0.000001 g

1 mg = 0.001 g

## Attachment 2
## FUSRAP North St. Louis County Sites
## Batch 282 Discharge Table 03/13/13 - 03/28/13

| Date: | 03/13/13 | 03/14/13 | 03/27/13 | 03/28/13 | Total | Result[3,4] |
|---|---|---|---|---|---|---|
| Volume Discharged: | 84,934 | 99,970 | 79,248 | 63,781 | 327,933 | |
| Sample ID: | SVP122418 | SVP122419 | SVP122420 | SVP122421 | | |
| **NCVP** | | | | | | |
| Gross Alpha, raw water (HISS, pCi/L): | 2.94 | 6.18 | 12.66 | 14.43 | | 8.51 |
| Gross Beta, raw water (HISS, pCi/L): | -0.17 | 9.10 | 3.31 | 9.26 | | 5.33 |
| Total Uranium, KPA (filtered, HISS, pCi/L): | 8.38 | 8.66 | 16.67 | 17.11 | | 12.17 |
| Isotopics (HISS, pCi/L): | | | | | | |
| Th-228 | 0.63 | 0.18 | 0.32 | 0.61 | | 0.41 |
| Th-230 | 1.39 | 0.60 | 1.12 | 1.30 | | 1.07 |
| Ra-226 | 0.30 | 0.54 | -0.32 | 0.65 | | 0.29 |
| Ra-228[2] | 0.63 | 0.18 | 0.32 | 0.61 | | 0.41 |
| | | | | | | |
| Barium (mg/L)[1]: | 5 | | | | | 5 |
| Lead (mg/L)[1]: | 5 | | | | | 5 |
| Selenium (mg/L)[1]: | 5 | | | | | 5 |
| | | | | | | |
| BOD (mg/L): | N/A | | | | | N/A |
| COD (mg/L): | N/A | | | | | N/A |
| | | | | | | |
| Gross Alpha, TSS filtrate (HISS, pCi/L): | 5.30 | 5.60 | 11.48 | 10.90 | | 7.97 |
| Total Suspended Solids (HISS, mg/L): | 15.20 | 9.60 | 11.33 | 21.00 | | 13.69 |

NOTES:

[1] = The chemical results were used for final discharge

[2] = Ra-228 assumed to be in equilibrium with Th-228

[3] = Highest MDA used for calculation

[4] = Volume weighted average was used to calculate the total activity.

[5] = Analysis for metals is not required per MSD Letter 05/24/12.

N/A=Not Applicable

MDA=Minimum Detectable Activity

pCi/L - picocuries per liter

mg/L - milligrams per liter

Ci - curies

## Attachment 3
## FUSRAP North St. Louis County Sites
## Batch 283 Discharge Table 04/25/13 - 04/29/13

| NCVP | | | | |
|---|---|---|---|---|
| **Date:** | 04/25/13 | 04/29/13 | Total | **Result[3,4]** |
| **Volume Discharged:** | 91,028 | 95,802 | 186,830 | |
| **Sample ID:** | SVP122422 | SVP122423 | | |
| Gross Alpha, raw water (HISS, pCi/L): | 6.48 | 3.83 | | 5.12 |
| Gross Beta, raw water (HISS, pCi/L): | 7.11 | 3.80 | | 5.41 |
| Total Uranium, KPA (filtered, HISS, pCi/L): | 4.95 | 5.24 | | 5.10 |
| Isotopics (HISS, pCi/L): | | | | |
| Th-228 | 0.45 | 0.22 | | 0.33 |
| Th-230 | 3.01 | 1.80 | | 2.39 |
| Ra-226 | 0.32 | 0.43 | | 0.38 |
| Ra-228[2] | 0.45 | 0.22 | | 0.33 |
| | | | | |
| Barium (mg/L)[1]: | [5] | | | [5] |
| Lead (mg/L)[1]: | [5] | | | [5] |
| Selenium (mg/L)[1]: | [5] | | | [5] |
| | | | | |
| BOD (mg/L): | N/A | | | N/A |
| COD (mg/L): | N/A | | | N/A |
| | | | | |
| Gross Alpha, TSS filtrate (HISS, pCi/L): | 0.59 | 0.29 | | 0.44 |
| Total Suspended Solids (HISS, mg/L): | 27.00 | 24.00 | | 25.46 |

NOTES:

[1] = The chemical results were used for final discharge

[2] = Ra-228 assumed to be in equilibrium with Th-228

[3] = Highest MDA used for calculation

[4] = Volume weighted average was used to calculate the total activity.

[5] = Analysis for metals is not required per MSD Letter 05/24/12.

N/A=Not Applicable

MDA=Minimum Detectable Activity

pCi/L - picocuries per liter

mg/L - milligrams per liter

Ci - curies

North St. Louis County Sites MSD 2nd Quarter Data

| Batch | Sample ID | Collection Date | Analyte | Units | Results | MDA | Lab ID | Location |
|---|---|---|---|---|---|---|---|---|
| 282(1) | SVP122418TW | 3/13/2013 | Gross Alpha | pCi/L | 2.94487001 | 9.35364874 | HISS | Ball Fields |
| 282(1) | SVP122418TW | 3/13/2013 | Gross Beta | pCi/L | -0.16538719 | 11.6252814 | HISS | Ball Fields |
| 282(1) | SVP122418TW | 3/13/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 5.300766018 | 9.35364874 | HISS | Ball Fields |
| 282(1) | SVP122418TW | 3/13/2013 | Gross Beta of TSS FILTRATE | pCi/L | 4.961615624 | 11.6252814 | HISS | Ball Fields |
| 282(1) | SVP122418TW | 3/13/2013 | TotalU | pCi/L | 8.384491 | 5.5 | HISS | Ball Fields |
| 282(1) | SVP122418TW | 3/13/2013 | pH | pH units | 8.49 | 0.1 | HISS | Ball Fields |
| 282(1) | SVP122418TW | 3/13/2013 | RA-226 | pCi/L | 0.2959 | 1.658 | HISS | Ball Fields |
| 282(1) | SVP122418TW | 3/13/2013 | TH-228 | pCi/L | 0.6263 | 0.8348 | HISS | Ball Fields |
| 282(1) | SVP122418TW | 3/13/2013 | TH-230 | pCi/L | 1.394 | 0.3776 | HISS | Ball Fields |
| 282(1) | SVP122418TW | 3/13/2013 | TH-232 | pCi/L | 0.5564 | 0.377 | HISS | Ball Fields |
| 282(1) | SVP122418TW | 3/13/2013 | Total Suspended Solids | mg/L | 15.2 | 2.38 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | Gross Alpha | pCi/L | 6.184227021 | 9.35364874 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | Gross Beta | pCi/L | 9.096295311 | 11.6252814 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 5.595253019 | 9.35364874 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | Gross Beta of TSS FILTRATE | pCi/L | 6.780874687 | 11.6252814 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | TotalU | pCi/L | 8.656943 | 2.5 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | pH | pH units | 8.63 | 0.1 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | RA-226 | pCi/L | 0.5367 | 1.317 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | TH-228 | pCi/L | 0.1803 | 0.7211 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | TH-230 | pCi/L | 0.6019 | 0.3262 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | TH-232 | pCi/L | 0 | 0.3256 | HISS | Ball Fields |
| 282(2) | SVP122419TW | 3/14/2013 | Total Suspended Solids | mg/L | 9.6 | 2.38 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | RA-226 | pCi/L | -0.3163 | 2.405 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | TH-228 | pCi/L | 0.3184 | 0.4314 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | TH-230 | pCi/L | 1.116 | 0.432 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | TH-232 | pCi/L | 0 | 0.4312 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | Total Suspended Solids | mg/L | 11.33333333 | 2.38 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | Gross Alpha | pCi/L | 12.66294104 | 8.54778705 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | Gross Beta | pCi/L | 3.30774375 | 12.4429739 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 11.48499304 | 8.54778705 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | Gross Beta of TSS FILTRATE | pCi/L | 3.638518125 | 12.4429739 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | TotalU | pCi/L | 16.67065 | 2.5 | HISS | Ball Fields |
| 282(3) | SVP122420TW | 3/27/2013 | pH | pH units | 8.25 | 0.1 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | RA-226 | pCi/L | 0.6548 | 2.027 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | TH-228 | pCi/L | 0.6127 | 0.8167 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | TH-230 | pCi/L | 1.295 | 0.8177 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | TH-232 | pCi/L | 0 | 0.3688 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | Total Suspended Solids | mg/L | 21 | 2.38 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | Gross Alpha | pCi/L | 14.42986305 | 8.54778705 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | Gross Beta | pCi/L | 9.261682499 | 12.4429739 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 10.89601904 | 8.54778705 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | Gross Beta of TSS FILTRATE | pCi/L | 2.150033437 | 12.4429739 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | TotalU | pCi/L | 17.11117 | 2.5 | HISS | Ball Fields |
| 282(4) | SVP122421TW | 3/28/2013 | pH | pH units | 7.96 | 0.1 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | RA-226 | pCi/L | 0.3169 | 1.267 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | TotalU | pCi/L | 4.952754 | 2.5 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | pH | pH units | 8.83 | 0.1 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | TH-230 | pCi/L | 3.013 | 0.4082 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | TH-232 | pCi/L | 0.4511 | 0.4075 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | TH-228 | pCi/L | 0.4513 | 1.107 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | Total Suspended Solids | mg/L | 27 | 2.38 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | Gross Alpha | pCi/L | 6.478714022 | 9.46265644 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | Gross Beta | pCi/L | 7.111649062 | 11.9387367 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 0.588974002 | 9.46265644 | HISS | Ball Fields |
| 283(1) | SVP122422TW | 4/25/2013 | Gross Beta of TSS FILTRATE | pCi/L | 5.127002812 | 11.9387367 | HISS | Ball Fields |
| 283(2) | SVP122423TW | 4/29/2013 | RA-226 | pCi/L | 0.4306 | 0.5835 | HISS | Ball Fields |
| 283(2) | SVP122423TW | 4/29/2013 | TotalU | pCi/L | 5.235912 | 2.5 | HISS | Ball Fields |
| 283(2) | SVP122423TW | 4/29/2013 | pH | pH units | 8.64 | 0.1 | HISS | Ball Fields |
| 283(2) | SVP122423TW | 4/29/2013 | TH-228 | pCi/L | 0.2161 | 0.8641 | HISS | Ball Fields |
| 283(2) | SVP122423TW | 4/29/2013 | TH-230 | pCi/L | 1.803 | 0.8652 | HISS | Ball Fields |

North St. Louis County Sites MSD 2nd Quarter Data

| Batch | Sample ID | Collection Date | Analyte | Units | Results | MDA | Lab ID | Location |
|---|---|---|---|---|---|---|---|---|
| 283(2) | SVP122423TW | 4/29/2013 | TH-232 | pCi/L | 0.144 | 0.3902 | HISS | Ball Fields |
| 283(2) | SVP122423TW | 4/29/2013 | Total Suspended Solids | mg/L | 24 | 2.38 | HISS | Ball Fields |
| 283(2) | SVP122423TW | 4/29/2013 | Gross Alpha | pCi/L | 3.828331013 | 9.46265644 | HISS | Ball Fields |
| 283(2) | SVP122423TW | 4/29/2013 | Gross Beta | pCi/L | 3.803905312 | 11.9387367 | HISS | Ball Fields |
| 283(2) | SVP122423TW | 4/29/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 0.294487001 | 9.46265644 | HISS | Ball Fields |
| 283(2) | SVP122423TW | 4/29/2013 | Gross Beta of TSS FILTRATE | pCi/L | 1.3230975 | 11.9387367 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | RA-226 | pCi/L | 1.65 | 1.319 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | Gross Beta | pCi/L | 4.300066875 | 11.9387367 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 3.239357011 | 9.46265644 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | Gross Beta of TSS FILTRATE | pCi/L | 6.119325937 | 11.9387367 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | TotalU | pCi/L | 5.947764 | 2.5 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | pH | pH units | 8.35 | 0.1 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | TH-228 | pCi/L | 0.04651 | 0.558 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | TH-230 | pCi/L | 1.583 | 0.2524 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | TH-232 | pCi/L | 0 | 0.2519 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | Total Suspended Solids | mg/L | 36.5 | 2.38 | HISS | Ball Fields |
| 284(1) | SVP122424TW | 5/1/2013 | Gross Alpha | pCi/L | 6.773201023 | 9.46265644 | HISS | Ball Fields |

# FUSRAP St. Louis Downtown Site
## Self Monitoring Report for 2nd Quarter 2013

| Parameter | Batch Number | Date of Discharge | Batch[1] Results | Amount Discharged (gallons) | Total Activity[3] per Discharge (Ci) | MSD Limits | 10CFR20 Limits | 10CFR20 Sum of Ratios |
|---|---|---|---|---|---|---|---|---|
| Gross Alpha (raw water) | SLDS-BK508[4,5] | 03/07/13 - 03/28/13 (6WH) | 32 pCi/L | 72,536 | 8.8E-06 | 3,000 pCi/L | 3,000 pCi/L | |
| Gross Beta | | | 23 pCi/L | | 6.4E-06 | N/A | N/A | |
| TH-228 | | | <0.7 pCi/L | | 9.2E-08 | 2,000 pCi/L | 2,000 pCi/L | |
| TH-230 | | | 3 pCi/L | | 9.3E-07 | 1,000 pCi/L | 1,000 pCi/L | |
| TH-232 | | | <0.5 pCi/L | | 6.6E-08 | 300 pCi/L | 300 pCi/L | |
| Uranium (KPA) | | | 30 pCi/L | | 8.1E-06 | 3,000 pCi/L | 3,000 pCi/L | |
| RA-226 | | | 2 pCi/L | | 4.7E-07 | 10 pCi/L | 600 pCi/L | |
| RA-228[2] | | | <0.7 pCi/L | | 9.2E-08 | 30 pCi/L | 600 pCi/L | 0.02 |
| Total Suspended Solids | | | 38 mg/L | | | | | |
| Gross Alpha (raw water) | SLDS-BK509[6] | 04/08/13 - 04/30/13 (6WH) | 170 pCi/L | 210,722 | 1.4E-04 | 3,000 pCi/L | 3,000 pCi/L | |
| Gross Beta | | | 92 pCi/L | | 7.4E-05 | N/A | N/A | |
| TH-228 | | | 1 pCi/L | | 1.1E-06 | 2,000 pCi/L | 2,000 pCi/L | |
| TH-230 | | | 19 pCi/L | | 1.5E-05 | 1,000 pCi/L | 1,000 pCi/L | |
| TH-232 | | | 1 pCi/L | | 1.1E-06 | 300 pCi/L | 300 pCi/L | |
| Uranium (KPA) | | | 229 pCi/L | | 1.8E-04 | 3,000 pCi/L | 3,000 pCi/L | |
| RA-226 | | | 3 pCi/L | | 2.2E-06 | 10 pCi/L | 600 pCi/L | |
| RA-228[2] | | | 1 pCi/L | | 1.1E-06 | 30 pCi/L | 600 pCi/L | 0.11 |
| Total Suspended Solids | | | 41 mg/L | | | | | |
| Gross Alpha (raw water) | SLDS-BK510[7,8] | 05/06/13 - 05/30/13 (6WH) | 346 pCi/L | 317,387 | 4.2E-04 | 3,000 pCi/L | 3,000 pCi/L | |
| Gross Beta | | | 174 pCi/L | | 2.1E-04 | N/A | N/A | |
| TH-228 | | | <0.7 pCi/L | | 4.1E-07 | 2,000 pCi/L | 2,000 pCi/L | |
| TH-230 | | | 10 pCi/L | | 1.2E-05 | 1,000 pCi/L | 1,000 pCi/L | |
| TH-232 | | | <0.8 pCi/L | | 3.4E-07 | 300 pCi/L | 300 pCi/L | |
| Uranium (KPA) | | | 448 pCi/L | | 5.4E-04 | 3,000 pCi/L | 3,000 pCi/L | |
| RA-226 | | | <3 pCi/L | | 2.0E-06 | 10 pCi/L | 600 pCi/L | |
| RA-228[2] | | | <0.7 pCi/L | | 4.1E-07 | 30 pCi/L | 600 pCi/L | 0.18 |
| Total Suspended Solids | | | 58 mg/L | | | | | |

NOTES:
[1] = Non-detect sample results are converted to half the detection limit.
[2] = Ra-228 assumed to be in equilibrium with Th-228
[3] = The weighted average was used to calculate the total activity.
[4] = Batch 508 occurred late in the First Quarter and is included in this Second Quarter Report.
[5] = See Attachment 1 - Batch 508 Discharge Table
[6] = See Attachment 2 - Batch 509 Discharge Table
[7] = See Attachment 3 - Batch 510 Discharge Table
[8] = Batch 511 occurred late in the Second Quarter and will be included in the Third Quarter Report.
N/A = Not applicable
pCi/L - picocuries per liter
mg/L - milligrams per liter
Ci - curies

**Total Activity Discharged in 2nd Quarter of CY13 (Ci)**

| | |
|---|---|
| TH-228 | 1.6E-06 |
| TH-230 | 2.8E-05 |
| TH-232 | 1.5E-06 |
| Uranium (KPA) | 7.3E-04 |
| RA-226 | 4.7E-06 |
| RA-228[2] | 1.6E-06 |

**Total Activity Discharged through 06/30/13 (Ci)**

| | |
|---|---|
| TH-228 | 1.7E-06 |
| TH-230 | 2.9E-05 |
| TH-232 | 1.6E-06 |
| Uranium (KPA) | 7.6E-04 |
| RA-226 | 5.3E-06 |
| RA-228[2] | 1.7E-06 |

**Total Volume Discharged in 2nd Quarter of CY13 (gal)**

| | |
|---|---|
| Gallons | 600,645 |

**Total Volume Discharged through 06/30/13 (gal)**

| | |
|---|---|
| Gallons | 716,689 |

## Attachment 1
## FUSRAP SLDS
## Batch 508 Discharge Table 03/07/13 - 03/28/13

| | | | | | | |
|---|---|---|---|---|---|---|
| **Date:** | 03/07/13 | 03/14/13 | 03/21/13 | 03/28/13 | Total | **Result[2,3]** |
| **Volume Discharged:** | 15,704 | 16,280 | 24,934 | 15,618 | 72,536 | |
| **Sample ID:** | SLD135454 | SLD135455 | SLD135456 | SLD135457 | | |
| **SLDS** | | | | | | |
| Gross Alpha, raw water, unfiltered (HISS, pCi/L): | 41.23 | 32.39 | 26.80 | 30.92 | | 32.07 |
| Gross Beta, raw water, unfiltered (HISS, pCi/L): | 23.82 | 24.15 | 22.49 | 23.15 | | 23.29 |
| Total Uranium, KPA (filtered, HISS, pCi/L): | 40.76 | 30.18 | 27.45 | 21.46 | | 29.65 |
| TSS (HISS, mg/L): | 15.20 | 32.40 | 36.00 | 59.00 | | 35.64 |
| Isotopics (HISS, pCi/L): | | | | | | |
| Th-228 | 0.52 | 0.06 | 0.34 | 0.39 | | 0.33 |
| Th-230 | 1.65 | 4.07 | 3.44 | 4.38 | | 3.40 |
| Th-232 | -0.04 | 0.19 | 0.13 | 0.07 | | 0.09 |
| Ra-226 | 0.81 | 1.16 | 2.07 | 2.57 | | 1.70 |
| Ra-228[1] | 0.52 | 0.06 | 0.34 | 0.39 | | 0.33 |

NOTES:

[1] = Ra-228 and Th-228 assumed to be in equilibrium

[2] = Volume weighted average was used to calculate the total activity.

[3] = Highest MDA used for calculation

N/A = Not applicable

MDA=Minimum Detectable Activity

pCi/L - picocuries per liter

mg/L - milligrams per liter

Ci - curies

## Attachment 2
## FUSRAP SLDS
## Batch 509 Discharge Table 04/08/13 - 04/30/13

| Date: | 04/08/13 | 04/11/13 | 04/17/13 | 04/22/13 | 04/23/13 | 04/24/13 | 04/25/13 | 04/29/13 | 04/30/13 | Total | Result[2,3] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Volume Discharged: | 24,268 | 23,226 | 21,108 | 35,621 | 30,400 | 22,340 | 17,066 | 19,500 | 17,193 | 210,722 | |
| Sample ID: | SLD135458 | SLD135459 | SLD135460 | SLD135461 | SLD135462 | SLD135463 | SLD154590 | SLD154591 | SLD154592 | | |
| **SLDS** | | | | | | | | | | | |
| Gross Alpha, raw water, unfiltered (HISS, pCi/L): | 49.77 | 44.47 | 68.91 | 35.04 | 271.52 | 108.96 | 367.52 | 66.26 | 732.98 | | 169.88 |
| Gross Beta, raw water, unfiltered (HISS, pCi/L): | 22.33 | 18.19 | 38.70 | 18.03 | 128.18 | 56.07 | 259.66 | 41.18 | 386.18 | | 92.29 |
| Total Uranium, KPA (filtered, HISS, pCi/L): | 29.03 | 20.66 | 23.31 | 24.37 | 337.64 | 131.38 | 640.03 | 68.02 | 1179.51 | | 229.08 |
| TSS (HISS, mg/L): | 32.00 | 14.00 | 65.50 | 19.50 | 33.00 | 55.50 | 78.50 | 43.50 | 54.00 | | 40.52 |
| Isotopics (HISS, pCi/L): | | | | | | | | | | | |
| Th-228 | 2.53 | 1.57 | 3.80 | 0.62 | 0.51 | 1.28 | 0.40 | 1.70 | 0.31 | | 1.37 |
| Th-230 | 3.49 | 7.13 | 22.15 | 14.16 | 20.77 | 29.11 | 25.92 | 22.72 | 31.12 | | 18.62 |
| Th-232 | 3.34 | 1.26 | 3.97 | 0.31 | 0.75 | 0.87 | 0.24 | 1.29 | 0.31 | | 1.34 |
| Ra-226 | 1.50 | 1.84 | 4.08 | 1.29 | 3.19 | 3.23 | 4.00 | 2.74 | 4.14 | | 2.72 |
| Ra-228[1] | 2.53 | 1.57 | 3.80 | 0.62 | 0.51 | 1.28 | 0.40 | 1.70 | 0.31 | | 1.37 |

NOTES:

[1] = Ra-228 and Th-228 assumed to be in equilibrium

[2] = Volume weighted average was used to calculate the total activity.

[3] = Highest MDA used for calculation

N/A = Not applicable

MDA=Minimum Detectable Activity

pCi/L - picocuries per liter

mg/L - milligrams per liter

Ci - curies

## Attachment 3
## FUSRAP SLDS
## Batch 510 Discharge Table 05/06/13 - 05/30/13

| SLDS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Date:** | 05/06/13 | 05/07/13 | 05/08/13 | 05/13/13 | 05/15/13 | 05/20/13 | 05/21/13 | 05/23/13 | 05/28/13 | 05/30/13 | Total | **Result[2,3]** |
| **Volume Discharged:** | 44,407 | 47,280 | 25,897 | 36,423 | 15,820 | 23,510 | 39,180 | 16,010 | 48,260 | 20,600 | 317,387 | |
| **Sample ID:** | SLD154593 | SLD154594 | SLD154595 | SLD154596 | SLD154597 | SLD154598 | SLD154599 | SLD154600 | SLD154601 | SLD154602 | | |
| Gross Alpha, raw water, unfiltered (HISS, pCi/L): | 45.65 | 467.94 | 628.14 | 633.15 | 627.55 | 597.81 | 136.35 | 396.97 | 46.53 | 410.51 | | 346.14 |
| Gross Beta, raw water, unfiltered (HISS, pCi/L): | 15.71 | 181.43 | 350.79 | 274.87 | 227.24 | 382.87 | 82.36 | 257.67 | 36.88 | 245.60 | | 173.79 |
| Total Uranium, KPA (filtered, HISS, pCi/L): | 31.02 | 565.86 | 978.04 | 882.13 | 823.19 | 744.03 | 167.60 | 498.69 | 33.61 | 481.75 | | 448.04 |
| TSS (HISS, mg/L): | 36.00 | 6.00 | 42.00 | 51.00 | 46.50 | 49.00 | 11.50 | 41.00 | 191.00 | 34.00 | | 55.89 |
| Isotopics (HISS, pCi/L): | | | | | | | | | | | | |
| Th-228 | 0.35 | 0.41 | 0.25 | 0.24 | 0.09 | 0.22 | 0.59 | 0.32 | 0.66 | 0.65 | | 0.41 |
| Th-230 | 10.66 | 1.13 | 2.57 | 18.85 | 3.21 | 3.53 | 2.04 | 5.45 | 30.54 | 2.95 | | 9.82 |
| Th-232 | 0.16 | 0.08 | 0.12 | 0.24 | -0.05 | 0.06 | 0.21 | 0.17 | 0.47 | 0.39 | | 0.20 |
| Ra-226 | 1.84 | 2.19 | 2.59 | 3.97 | 1.45 | 2.14 | 0.62 | 0.90 | 2.57 | 0.94 | | 2.06 |
| Ra-228[1] | 0.35 | 0.41 | 0.25 | 0.24 | 0.09 | 0.22 | 0.59 | 0.32 | 0.66 | 0.65 | | 0.41 |

NOTES:
[1] = Ra-228 and Th-228 assumed to be in equilibrium
[2] = Volume weighted average was used to calculate the total activity.
[3] = Highest MDA used for calculation
N/A = Not applicable
MDA=Minimum Detectable Activity
pCi/L - picocuries per liter
mg/L - milligrams per liter
Ci - curies

St. Louis Downtown Site MSD 2nd Quarter Data

| Batch | Sample ID | Collection Date | Analyte | Units | Results | MDA | Lab ID | Location |
|---|---|---|---|---|---|---|---|---|
| Batch 508 (01) | SLD135454TW | 3/7/2013 | TotalU | pCi/L | 40.75843 | 4.9999995 | HISS | 6WH LOADOUT |
| Batch 508 (01) | SLD135454TW | 3/7/2013 | pH | pH units | 8.15 | 0.1 | HISS | 6WH LOADOUT |
| Batch 508 (01) | SLD135454TW | 3/7/2013 | RA-226 | pCi/L | 0.8145 | 1.499 | HISS | 6WH LOADOUT |
| Batch 508 (01) | SLD135454TW | 3/7/2013 | Gross Alpha | pCi/L | 41.2281801 | 9.35364874 | HISS | 6WH LOADOUT |
| Batch 508 (01) | SLD135454TW | 3/7/2013 | Gross Beta | pCi/L | 23.815755 | 11.6252814 | HISS | 6WH LOADOUT |
| Batch 508 (01) | SLD135454TW | 3/7/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 43.5840761 | 9.35364874 | HISS | 6WH LOADOUT |
| Batch 508 (01) | SLD135454TW | 3/7/2013 | Gross Beta of TSS FILTRATE | pCi/L | 14.5540725 | 11.6252814 | HISS | 6WH LOADOUT |
| Batch 508 (01) | SLD135454TW | 3/7/2013 | TH-228 | pCi/L | 0.5215 | 0.6743 | HISS | 6WH LOADOUT |
| Batch 508 (01) | SLD135454TW | 3/7/2013 | TH-230 | pCi/L | 1.647 | 0.4818 | HISS | 6WH LOADOUT |
| Batch 508 (01) | SLD135454TW | 3/7/2013 | TH-232 | pCi/L | -0.04009 | 0.4809 | HISS | 6WH LOADOUT |
| Batch 508 (01) | SLD135454TW | 3/7/2013 | Total Suspended Solids | mg/L | 15.2 | 2.38 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | TotalU | pCi/L | 30.18319 | 2.5 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | pH | pH units | 8.21 | 0.1 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | RA-226 | pCi/L | 1.158 | 0.5228 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | Gross Alpha | pCi/L | 32.3935701 | 9.35364874 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | Gross Beta | pCi/L | 24.1465294 | 11.6252814 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 33.2770311 | 9.35364874 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | Gross Beta of TSS FILTRATE | pCi/L | 17.3656547 | 11.6252814 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | TH-228 | pCi/L | 0.06451 | 0.4749 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | TH-230 | pCi/L | 4.069 | 0.1751 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | TH-232 | pCi/L | 0.1934 | 0.1747 | HISS | 6WH LOADOUT |
| Batch 508 (02) | SLD135455TW | 3/14/2013 | Total Suspended Solids | mg/L | 32.4 | 2.38 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | Gross Alpha | pCi/L | 26.7983171 | 8.54778705 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | Gross Beta | pCi/L | 22.4926575 | 12.4429739 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 17.0802461 | 8.54778705 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | Gross Beta of TSS FILTRATE | pCi/L | 1.98464625 | 12.4429739 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | TH-228 | pCi/L | 0.3363 | 0.1823 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | TH-230 | pCi/L | 3.435 | 0.1825 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | TH-232 | pCi/L | 0.1345 | 0.1822 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | Total Suspended Solids | mg/L | 36 | 2.38 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | TotalU | pCi/L | 27.44578 | 2.5 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | pH | pH units | 8.05 | 0.1 | HISS | 6WH LOADOUT |
| Batch 508 (03) | SLD135456TW | 3/21/2013 | RA-226 | pCi/L | 2.069 | 1.306 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | Gross Alpha | pCi/L | 30.9211351 | 8.54778705 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | Gross Beta | pCi/L | 23.1542062 | 12.4429739 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | TH-228 | pCi/L | 0.3947 | 0.1783 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | TH-230 | pCi/L | 4.38 | 0.395 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | TH-232 | pCi/L | 0.06575 | 0.4838 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | Total Suspended Solids | mg/L | 59 | 2.38 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 20.6140901 | 8.54778705 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | Gross Beta of TSS FILTRATE | pCi/L | 5.95393875 | 12.4429739 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | TotalU | pCi/L | 21.46014 | 2.5 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | pH | pH units | 7.98 | 0.1 | HISS | 6WH LOADOUT |
| Batch 508 (04) | SLD135457TW | 3/28/2013 | RA-226 | pCi/L | 2.573 | 0.5364 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | RA-226 | pCi/L | 1.499 | 1.68 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | TH-228 | pCi/L | 2.525 | 0.4266 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | TH-230 | pCi/L | 3.489 | 0.193 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | TH-232 | pCi/L | 3.341 | 0.1926 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | Total Suspended Solids | mg/L | 32 | 2.38 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | Gross Alpha | pCi/L | 49.7683032 | 8.54778705 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | Gross Beta | pCi/L | 22.3272703 | 12.4429739 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 32.0990831 | 8.54778705 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | Gross Beta of TSS FILTRATE | pCi/L | 6.11932594 | 12.4429739 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | TotalU | pCi/L | 29.03326 | 2.5 | HISS | 6WH LOADOUT |
| Batch 509 (01) | SLD135458TW | 4/8/2013 | pH | pH units | 7.77 | 0.1 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | RA-226 | pCi/L | 1.839 | 0.5538 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | TH-228 | pCi/L | 1.566 | 0.3683 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | TH-230 | pCi/L | 7.131 | 0.1666 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | TH-232 | pCi/L | 1.258 | 0.368 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | Total Suspended Solids | mg/L | 14 | 2.38 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | Gross Alpha | pCi/L | 44.4675371 | 8.54778705 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | Gross Beta | pCi/L | 18.1925906 | 12.4429739 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 15.0188371 | 8.54778705 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | Gross Beta of TSS FILTRATE | pCi/L | 5.95393875 | 12.4429739 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | TotalU | pCi/L | 20.66361 | 2.5 | HISS | 6WH LOADOUT |
| Batch 509 (02) | SLD135459TW | 4/11/2013 | pH | pH units | 8.03 | 0.1 | HISS | 6WH LOADOUT |

| Batch | Sample ID | Collection Date | Analyte | Units | Results | MDA | Lab ID | Location |
|---|---|---|---|---|---|---|---|---|
| Batch 509 (03) | SLD135460TW | 4/17/2013 | Gross Alpha | pCi/L | 68.9099582 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (03) | SLD135460TW | 4/17/2013 | Gross Beta | pCi/L | 38.7006019 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (03) | SLD135460TW | 4/17/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 13.546402 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (03) | SLD135460TW | 4/17/2013 | Gross Beta of TSS FILTRATE | pCi/L | 8.76552094 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (03) | SLD135460TW | 4/17/2013 | RA-226 | pCi/L | 4.075 | 1.499 | HISS | 6WH LOADOUT |
| Batch 509 (03) | SLD135460TW | 4/17/2013 | TH-228 | pCi/L | 3.8 | 0.4034 | HISS | 6WH LOADOUT |
| Batch 509 (03) | SLD135460TW | 4/17/2013 | TH-230 | pCi/L | 22.15 | 0.1825 | HISS | 6WH LOADOUT |
| Batch 509 (03) | SLD135460TW | 4/17/2013 | TH-232 | pCi/L | 3.965 | 0.1821 | HISS | 6WH LOADOUT |
| Batch 509 (03) | SLD135460TW | 4/17/2013 | TotalU | pCi/L | 23.31093 | 2.5 | HISS | 6WH LOADOUT |
| Batch 509 (03) | SLD135460TW | 4/17/2013 | pH | pH units | 7.93 | 0.1 | HISS | 6WH LOADOUT |
| Batch 509 (03) | SLD135460TW | 4/17/2013 | Total Suspended Solids | mg/L | 65.5 | 2.38 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | Gross Alpha | pCi/L | 35.0439531 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | Gross Beta | pCi/L | 18.0272034 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | RA-226 | pCi/L | 1.292 | 1.586 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | TH-228 | pCi/L | 0.6164 | 0.2088 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | TH-230 | pCi/L | 14.16 | 0.4627 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | TH-232 | pCi/L | 0.308 | 0.2087 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | TotalU | pCi/L | 24.37178 | 2.5 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | pH | pH units | 7.85 | 0.1 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | Total Suspended Solids | mg/L | 19.5 | 2.38 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 20.3196031 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (04) | SLD135461TW | 4/22/2013 | Gross Beta of TSS FILTRATE | pCi/L | 8.26935937 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | RA-226 | pCi/L | 3.189 | 0.6172 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | TH-228 | pCi/L | 0.5139 | 0.7854 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | TH-230 | pCi/L | 20.77 | 0.2535 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | TH-232 | pCi/L | 0.7471 | 0.2531 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | TotalU | pCi/L | 337.6413 | 2.5 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | pH | pH units | 8.18 | 0.1 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | Gross Alpha | pCi/L | 271.517015 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | Gross Beta | pCi/L | 128.17507 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | Gross Beta of TSS FILTRATE | pCi/L | 55.570095 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 233.822679 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (05) | SLD135462TW | 4/23/2013 | Total Suspended Solids | mg/L | 33 | 2.38 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | RA-226 | pCi/L | 3.227 | 1.335 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | TH-228 | pCi/L | 1.275 | 0.7332 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | TotalU | pCi/L | 131.3752 | 2.5 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | pH | pH units | 7.92 | 0.1 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | Gross Alpha | pCi/L | 108.96019 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | Gross Beta | pCi/L | 56.0662566 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 64.1981662 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | Gross Beta of TSS FILTRATE | pCi/L | 24.1465294 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | TH-230 | pCi/L | 29.11 | 0.1977 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | TH-232 | pCi/L | 0.8738 | 0.1973 | HISS | 6WH LOADOUT |
| Batch 509 (06) | SLD135463TW | 4/24/2013 | Total Suspended Solids | mg/L | 55.5 | 2.38 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | RA-226 | pCi/L | 3.995 | 0.6368 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | TotalU | pCi/L | 640.0347 | 4.9999995 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | pH | pH units | 7.36 | 0.1 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | Gross Alpha | pCi/L | 367.519777 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | Gross Beta | pCi/L | 259.657884 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 470.295741 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | Gross Beta of TSS FILTRATE | pCi/L | 156.952441 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | TH-228 | pCi/L | 0.4032 | 0.5935 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | TH-230 | pCi/L | 25.92 | 0.2188 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | TH-232 | pCi/L | 0.2418 | 0.2184 | HISS | 6WH LOADOUT |
| Batch 509 (07) | SLD154590TW | 4/25/2013 | Total Suspended Solids | mg/L | 78.5 | 2.38 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | RA-226 | pCi/L | 2.742 | 1.844 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | TotalU | pCi/L | 68.01817 | 4.9999995 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | pH | pH units | 7.89 | 0.1 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | Gross Alpha | pCi/L | 66.2595752 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | Gross Beta | pCi/L | 41.1814097 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 48.0013812 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | Gross Beta of TSS FILTRATE | pCi/L | 11.4117159 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | TH-228 | pCi/L | 1.696 | 0.2189 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | TH-230 | pCi/L | 22.72 | 0.2191 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | TH-232 | pCi/L | 1.291 | 0.2187 | HISS | 6WH LOADOUT |
| Batch 509 (08) | SLD154591TW | 4/29/2013 | Total Suspended Solids | mg/L | 43.5 | 2.38 | HISS | 6WH LOADOUT |

| Batch | Sample ID | Collection Date | Analyte | Units | Results | MDA | Lab ID | Location |
|---|---|---|---|---|---|---|---|---|
| Batch 509 (09) | SLD154592TW | 4/30/2013 | RA-226 | pCi/L | 4.142 | 1.343 | HISS | 6WH LOADOUT |
| Batch 509 (09) | SLD154592TW | 4/30/2013 | TotalU | pCi/L | 1179.511 | 4.9999995 | HISS | 6WH LOADOUT |
| Batch 509 (09) | SLD154592TW | 4/30/2013 | pH | pH units | 7.3 | 0.1 | HISS | 6WH LOADOUT |
| Batch 509 (09) | SLD154592TW | 4/30/2013 | Gross Alpha | pCi/L | 732.978145 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (09) | SLD154592TW | 4/30/2013 | Gross Beta | pCi/L | 386.179083 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 509 (09) | SLD154592TW | 4/30/2013 | TH-228 | pCi/L | 0.3093 | 0.2095 | HISS | 6WH LOADOUT |
| Batch 509 (09) | SLD154592TW | 4/30/2013 | TH-230 | pCi/L | 31.12 | 0.5698 | HISS | 6WH LOADOUT |
| Batch 509 (09) | SLD154592TW | 4/30/2013 | TH-232 | pCi/L | 0.3091 | 0.2094 | HISS | 6WH LOADOUT |
| Batch 509 (09) | SLD154592TW | 4/30/2013 | Total Suspended Solids | mg/L | 54 | 2.38 | HISS | 6WH LOADOUT |
| Batch 509 (09) | SLD154592TW | 4/30/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 771.261456 | 9.46265644 | HISS | 6WH LOADOUT |
| Batch 509 (09) | SLD154592TW | 4/30/2013 | Gross Beta of TSS FILTRATE | pCi/L | 313.904882 | 11.9387367 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | Gross Alpha | pCi/L | 45.6454852 | 8.9029722 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | Gross Beta | pCi/L | 15.7117828 | 11.86118 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 25.0313951 | 8.9029722 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | Gross Beta of TSS FILTRATE | pCi/L | 8.93090812 | 11.86118 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | TotalU | pCi/L | 31.01738 | 2.5 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | pH | pH units | 7.57 | 0.1 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | RA-226 | pCi/L | 1.835 | 3.357 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | TH-228 | pCi/L | 0.3485 | 0.3801 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | TH-230 | pCi/L | 10.66 | 0.1719 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | TH-232 | pCi/L | 0.1583 | 0.3798 | HISS | 6WH LOADOUT |
| Batch 510 (01) | SLD154593TW | 5/6/2013 | Total Suspended Solids | mg/L | 36 | 2.38 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | Gross Alpha | pCi/L | 467.939845 | 8.9029722 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | Gross Beta | pCi/L | 181.429745 | 11.86118 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 480.013812 | 8.9029722 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | Gross Beta of TSS FILTRATE | pCi/L | 136.940591 | 11.86118 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | TotalU | pCi/L | 565.8608 | 2.5 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | pH | pH units | 7.58 | 0.1 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | RA-226 | pCi/L | 2.19 | 2.389 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | TH-228 | pCi/L | 0.4145 | 0.452 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | TH-230 | pCi/L | 1.132 | 0.2045 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | TH-232 | pCi/L | 0.07531 | 0.2041 | HISS | 6WH LOADOUT |
| Batch 510 (02) | SLD154594TW | 5/7/2013 | Total Suspended Solids | mg/L | 6 | 2.38 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | Gross Alpha | pCi/L | 628.140773 | 8.9029722 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | Gross Beta | pCi/L | 350.786225 | 11.86118 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 818.96835 | 8.9029722 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | Gross Beta of TSS FILTRATE | pCi/L | 319.362659 | 11.86118 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | TotalU | pCi/L | 978.0379 | 2.5 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | pH | pH units | 7.47 | 0.1 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | RA-226 | pCi/L | 2.587 | 2.116 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | TH-228 | pCi/L | 0.2476 | 0.4557 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | TH-230 | pCi/L | 2.573 | 0.3718 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | TH-232 | pCi/L | 0.1238 | 0.1677 | HISS | 6WH LOADOUT |
| Batch 510 (03) | SLD154595TW | 5/8/2013 | Total Suspended Solids | mg/L | 42 | 2.38 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | Gross Alpha | pCi/L | 633.147052 | 8.9029722 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | Gross Beta | pCi/L | 274.873506 | 11.86118 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 487.964961 | 8.9029722 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | Gross Beta of TSS FILTRATE | pCi/L | 181.09897 | 11.86118 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | TotalU | pCi/L | 882.1332 | 2.5 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | pH | pH units | 7.7 | 0.1 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | RA-226 | pCi/L | 3.965 | 0.9768 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | TH-228 | pCi/L | 0.2354 | 0.2126 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | TH-230 | pCi/L | 18.85 | 0.2129 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | TH-232 | pCi/L | 0.2352 | 0.2125 | HISS | 6WH LOADOUT |
| Batch 510 (04) | SLD154596TW | 5/13/2013 | Total Suspended Solids | mg/L | 51 | 2.38 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | Gross Alpha | pCi/L | 627.551799 | 8.9029722 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | Gross Beta | pCi/L | 227.241996 | 11.86118 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 689.099582 | 8.9029722 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | Gross Beta of TSS FILTRATE | pCi/L | 168.19877 | 11.86118 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | TotalU | pCi/L | 823.1943 | 4 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | pH | pH units | 7.52 | 0.1 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | RA-226 | pCi/L | 1.448 | 2.482 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | TH-228 | pCi/L | 0.09418 | 0.6933 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | TH-230 | pCi/L | 3.206 | 0.8758 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | TH-232 | pCi/L | -0.04707 | 0.5646 | HISS | 6WH LOADOUT |
| Batch 510 (05) | SLD154597TW | 5/15/2013 | Total Suspended Solids | mg/L | 46.5 | 2.38 | HISS | 6WH LOADOUT |

| Batch | Sample ID | Collection Date | Analyte | Units | Results | MDA | Lab ID | Location |
|---|---|---|---|---|---|---|---|---|
| Batch 510 (06) | SLD154598TW | 5/20/2013 | Gross Alpha | pCi/L | 597.808612 | 12.423236 | HISS | 6WH LOADOUT |
| Batch 510 (06) | SLD154598TW | 5/20/2013 | Gross Beta | pCi/L | 382.871339 | 12.0157735 | HISS | 6WH LOADOUT |
| Batch 510 (06) | SLD154598TW | 5/20/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 585.734645 | 12.423236 | HISS | 6WH LOADOUT |
| Batch 510 (06) | SLD154598TW | 5/20/2013 | Gross Beta of TSS FILTRATE | pCi/L | 114.447934 | 12.0157735 | HISS | 6WH LOADOUT |
| Batch 510 (06) | SLD154598TW | 5/20/2013 | TotalU | pCi/L | 744.0298 | 4 | HISS | 6WH LOADOUT |
| Batch 510 (06) | SLD154598TW | 5/20/2013 | pH | pH units | 7.63 | 0.1 | HISS | 6WH LOADOUT |
| Batch 510 (06) | SLD154598TW | 5/20/2013 | RA-226 | pCi/L | 2.142 | 1.97 | HISS | 6WH LOADOUT |
| Batch 510 (06) | SLD154598TW | 5/20/2013 | TH-228 | pCi/L | 0.2221 | 0.5333 | HISS | 6WH LOADOUT |
| Batch 510 (06) | SLD154598TW | 5/20/2013 | TH-230 | pCi/L | 3.526 | 0.5339 | HISS | 6WH LOADOUT |
| Batch 510 (06) | SLD154598TW | 5/20/2013 | TH-232 | pCi/L | 0.06341 | 0.1718 | HISS | 6WH LOADOUT |
| Batch 510 (06) | SLD154598TW | 5/20/2013 | Total Suspended Solids | mg/L | 49 | 2.38 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | Gross Alpha | pCi/L | 136.347481 | 12.423236 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | TotalU | pCi/L | 167.5998 | 2.5 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | pH | pH units | 7.69 | 0.1 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | RA-226 | pCi/L | 0.6194 | 1.519 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | TH-228 | pCi/L | 0.5876 | 0.4147 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | TH-230 | pCi/L | 2.042 | 0.4152 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | TH-232 | pCi/L | 0.2073 | 0.1872 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | Total Suspended Solids | mg/L | 11.5 | 2.38 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | Gross Beta | pCi/L | 82.3628194 | 12.0157735 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 127.807358 | 12.423236 | HISS | 6WH LOADOUT |
| Batch 510 (07) | SLD154599TW | 5/21/2013 | Gross Beta of TSS FILTRATE | pCi/L | 34.5659222 | 12.0157735 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | TotalU | pCi/L | 498.6877 | 2.5 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | pH | pH units | 7.73 | 0.1 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | RA-226 | pCi/L | 0.8969 | 0.6076 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | TH-228 | pCi/L | 0.3184 | 0.3473 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | TH-230 | pCi/L | 5.449 | 0.1571 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | TH-232 | pCi/L | 0.1736 | 0.1568 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | Total Suspended Solids | mg/L | 41 | 2.38 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | Gross Alpha | pCi/L | 396.968477 | 12.423236 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | Gross Beta | pCi/L | 257.673238 | 12.0157735 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 364.574907 | 12.423236 | HISS | 6WH LOADOUT |
| Batch 510 (08) | SLD154600TW | 5/23/2013 | Gross Beta of TSS FILTRATE | pCi/L | 68.80107 | 12.0157735 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | TotalU | pCi/L | 33.60855 | 2.5 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | pH | pH units | 8.16 | 0.1 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | RA-226 | pCi/L | 2.574 | 0.5366 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | TH-228 | pCi/L | 0.655 | 0.5243 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | TH-230 | pCi/L | 30.54 | 0.1693 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | TH-232 | pCi/L | 0.4676 | 0.3739 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | Total Suspended Solids | mg/L | 191 | 2.38 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | Gross Alpha | pCi/L | 46.5289462 | 12.423236 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | Gross Beta | pCi/L | 36.8813428 | 12.0157735 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 9.71807103 | 12.423236 | HISS | 6WH LOADOUT |
| Batch 510 (09) | SLD154601TW | 5/28/2013 | Gross Beta of TSS FILTRATE | pCi/L | 12.0732647 | 12.0157735 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | Gross Alpha | pCi/L | 410.514879 | 12.423236 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | Gross Beta | pCi/L | 245.599973 | 12.0157735 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | Gross Alpha of TSS FILTRATE | pCi/L | 394.612581 | 12.423236 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | Gross Beta of TSS FILTRATE | pCi/L | 98.7361509 | 12.0157735 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | TotalU | pCi/L | 481.7522 | 2.5 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | pH | pH units | 7.84 | 0.1 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | RA-226 | pCi/L | 0.94 | 1.253 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | TH-228 | pCi/L | 0.6537 | 0.4811 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | TH-230 | pCi/L | 2.945 | 0.1774 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | TH-232 | pCi/L | 0.392 | 0.177 | HISS | 6WH LOADOUT |
| Batch 510 (10) | SLD154602TW | 5/30/2013 | Total Suspended Solids | mg/L | 34 | 2.38 | HISS | 6WH LOADOUT |

SR 8/15

Mallinckrodt Pharmaceuticals

1011-7281-00

July 26, 2013

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

Re: 2013 2nd Quarter Self-Monitoring Report for Permit No. 21120596 – 3.1

Dear Mr. Mendoza,

Please find enclosed the 2013 2nd Quarter Self-Monitoring report for Mallinckrodt.

The following sample points received no pharmaceutical process water flow during the second quarter: SP008, SP011, SP080, SP933 and SP935.

If you have any questions or require more detailed information, please contact me at 314-654-0127.

Sincerely,

Amber Crouch

Amber Crouch
Sr. Environmental Specialist

ENCLOSURES

RECEIVED
JUL 29 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

COVIDIEN/MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

## 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.**

| | |
|---|---|
| A | NO CHANGE IN WASTEWATER DISCHARGE AT SAMPLE POINTS WITH NO MONITORING REQUIRED |
| | For permit special conditions that waive monitoring at any sample point(s) specified in your permit, you are required to make the following certification for each report in which monitoring is waived:<br>____ I certify, since the last discharge monitoring report, there has been no change in the character of the wastes discharged at sample points 001 and 002.<br>____ I certify, since the last discharge monitoring report, there has been no discharge from sample points 008 and 011. |
| B | NO CHANGE IN WASTEWATER DISCHARGE AT ACTIVE CONNECTIONS WITHOUT SAMPLE POINTS |
| | For permit special conditions that waive monitoring at active connection points which are not specified as sample points in your permit, you are required to make the following certification:<br>____ I certify, since the last discharge monitoring report, there has been no change in the character of wastes discharged at those active connection points which are not specified in my permit. |
| E | NO DISCHARGE OF CATEGORICAL WASTE |
| | For permit special conditions that prohibit discharge of wastes which are subject to certain categorical pretreatment standards, you are required to make the following certification:<br>____ I certify, since the last discharge monitoring report, there has been no discharge of wastes which are subject to pretreatment standards in 40 CFR 414 (except for those wastes conveyed by SP 905). |
| F | CYANIDE NOT USED OR GENERATED IN 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from limitations and monitoring for Total Cyanide at the Pharmaceutical sample points 080, 915, 920, 935, 936, and 937, subject to the following certification:<br>____ I certify, since the last discharge monitoring report, cyanide has not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. |
| H | PHARMACEUTICAL POLLUTANTS NOT USED OR GENERATED IN 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants at the Pharmaceutical sample points 915, 935, and 936, subject to the following certification:<br>____ I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, have not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. In addition, the above-referenced report remains valid. |
| I | SURROGATE MONITORING ALLOWED FOR 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants, and replaced by monitoring for surrogate pollutant(s), at the Pharmaceutical sample points 920 and 937 subject to the following certification:<br>____ I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, continue to receive the same degree of treatment as the surrogate pollutant(s). In addition, the above-referenced report remains valid. |

## PART IV: GENERAL CERTIFICATION STATEMENTS

| | |
|---|---|
| B | DISCHARGE MONITORING REPORT CERTIFICATION |
| | **All permittees must sign and complete the information below:**<br>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.<br>Print or type name of signing official: James A. Walter<br>Title: Senior Director of Manufacturing Telephone: 314-654-1300<br>Signature: ____ Date: 7/26/13 |



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JUL 29 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) _X___(APR-JUNE) ____(JULY-SEPT) _____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **001** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | | UNITS |
| FLOW | | E | 1,000 | | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2032 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

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Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

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Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **002** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | | UNITS |
| FLOW | | E | 2,200 | | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | | |

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Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | **003** | | **009** | | **099** | | |
|---|---|---|---|---|---|---|---|---|
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | 5/1/2013 | | 5/1/2013 | | calculated | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | 0700, 0800, 0900, 1005 | | 0720, 0820, 0920, 1020 | | n/a | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | M | 13,651 | M | 10,109 | E | 3,542 | gal/day |
| Oil & Grease | 200 | G | 11 | G | 13 | E | 5 | mg/l |
| Biochemical Oxygen Demand | **** | C | 47 | C | 31 | E | 93 | mg/l |
| Chemical Oxygen Demand | **** | C | 186 | C | 152 | E | 283 | mg/l |
| Total Suspended Solids | **** | C | 59 | C | 25 | E | 156 | mg/l |
| Temperature | **** | G | 20 | G | 17.8 | E | 19 | deg C |
| pH | **** | G | 7.0 | G | 7.0 | E | 7.0 | S.U. |
| **** No limits for SP003 or SP009; | | | | | | | | |
| monitoring requirement only for calculation at SP099 | | | | | | | | |
| * Calculated value was less than zero. | | | | | | | | |
| Lab Dilution Factor | | | 1,1.54 | | 1 | | | |

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Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----> | | **005** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----> | | 5/1/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----> | | 0705, 0805, 0905, 1010 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | gal/day |
| Oil & Grease | 200 | G | 4 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 70 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 222 | | | | | mg/l |
| Total Suspended Solids | **** | C | 17 | | | | | mg/l |
| Temperature | 60 | G | 18.3 | | | | | deg C |
| pH | 5.5 - 11.5 | G | 6.5 | | | | | S.U. |
| **** No limits for SP005 | | | | | | | | |
| Lab Dilution Factor | | | 1 | | | | | |

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Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **008** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | | | | | | gal/day |
| Oil & Grease | 200 | G | * | | | | | mg/l |
| Biochemical Oxygen Demand | **** | G | * | | | | | mg/l |
| Chemical Oxygen Demand | **** | G | * | | | | | mg/l |
| Temperature | 60 | G | * | | | | | deg C |
| Total Suspended Solids | **** | G | * | | | | | mg/L |
| pH | 5.5 - 11.5 | G | * | | | | | S.U. |
| * No Flow this Quarter | | | | | | | | |
| Lab Dilution Factor | | | NA | | | | | |

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Monitoring Period: ____(JAN-MAR) _X___(APR-JUNE) ____(JULY-SEPT) _____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **010** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 5/1/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0730, 0830, 930, 1040 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 1,142,913 | | | | | gal/day |
| Oil & Grease | 200 | G | 19 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 525 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 1330 | | | | | mg/l |
| Total Suspended Solids | **** | C | 22 | | | | | mg/l |
| Temperature | 60 | G | 30 | | | | | deg C |
| pH | 5.5 - 11.5 | G | see attached | | | | | S.U. |
| Chromium | 5.0 | C | 0.004 | | | | | mg/l |
| Copper | 2.7 | C | 0.014 | | | | | mg/l |
| Nickel | 2.3 | C | 0.008 | | | | | mg/l |
| Zinc | 3.0 | C | 0.002 | | | | | mg/l |
| Lab Dilution Factor | | | 1, 5 | | | | | |

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Mallinckrodt pH Monitoring for SP010: April 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 4/1/13 0940 | 4.0 | 5 |
| 4/22/13 1045 | 4.2 | 5 |
| 4/29/13 1035 | 4.2 | 5 |
| | **April Total:** | **15** |

Mallinckrodt pH Monitoring for SP010: May 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 5/6/13 1020 | 4.5 | 5 |
| 5/13/13 1040 | 4.4 | 5 |
| 5/20/13 1040 | 4.4 | 5 |
| | **May Total:** | **15** |

Mallinckrodt pH Monitoring for SP010: June 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 6/6/13 1350 | 5.2 | 15 |
| 6/8/13 0305 | 11.6 | 5 |
| | **June Total:** | **20** |

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Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | | | | | | gal/day |
| Oil & Grease | 200 | G | * | | | | | mg/l |
| Biochemical Oxygen Demand | **** | G | * | | | | | mg/l |
| Chemical Oxygen Demand | **** | G | * | | | | | mg/l |
| Total Suspended Solids | **** | G | * | | | | | mg/l |
| Temperature | 60 | G | * | | | | | deg C |
| pH | 5.5 - 11.5 | G | * | | | | | S.U. |
| * No Flow this Quarter | | | | | | | | |
| Lab Dilution Factor | | | NA | | | | | |

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Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **080** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Amyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | * | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Diethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | * | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | * | | | | | | mg/L |
| Triethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| | | | | | | | | | | | |
| Oil & Grease | 1664 | 200 | | G | * | | | | | | mg/L |
| Biochemical Oxygen Demand | | **** | | C | * | | | | | | mg/L |
| Chemical Oxygen Demand | | **** | | C | * | | | | | | mg/L |
| Total Suspended Solids | | **** | | C | * | | | | | | mg/L |
| Temperature | | 60 | | G | * | | | | | | deg C |
| pH | | 5.5 - 11.5 | | G | * | | | | | | S.U. |

*** No flow from SP080 in 2nd QTR 2013**

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Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | ----> | | **905** | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | ----> | | 6/3/2013 | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | ----> | | 0900 | | | |
| | MONTHLY LIMIT (ave) | DAILY MAX LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | |
| PARAMETER | (gm/day) | (gm/day) | | | Lab results mg/L | | UNITS |
| FLOW | | | M | 44031 | | | gal/day |
| 1,2,4-Trichlorobenzene | 74 | 301 | G | 1.33 | 0.008 | | gm/day |
| 1,2-Dichlorobenzene | 74 | 301 | G | 0.83 | 0.005 | | gm/day |
| 1,3-Dichlorobenzene | 54 | 144 | G | 0.83 | 0.005 | | gm/day |
| 1,4-Dichlorobenzene | 54 | 144 | G | 0.83 | 0.005 | | gm/day |
| 2-Nitrophenol | 25 | 87 | G | 2.83 | 0.017 | | gm/day |
| 2-Methyl-4,6-dinitrophenol | 30 | 105 | G | 2.83 | 0.017 | | gm/day |
| 4-Nitrophenol | 61 | 218 | G | 2.83 | 0.017 | | gm/day |
| Acenapthene | 7 | 18 | G | 1.33 | 0.008 | | gm/day |
| Anthracene | 7 | 18 | G | 1.33 | 0.008 | | gm/day |
| Bis(2-ethylhexyl)phthalate | 36 | 98 | G | 0.83 | 0.005 | | gm/day |
| Diethyl phthalate | 17 | 43 | G | 1.33 | 0.008 | | gm/day |
| Dimethyl phthalate | 7 | 18 | G | 1.33 | 0.008 | | gm/day |
| Di-n-butyl phthalate | 8 | 16 | G | 1.33 | 0.008 | | gm/day |
| Fluoranthene | 8 | 20 | G | 1.33 | 0.008 | | gm/day |
| Fluorene | 7 | 18 | G | 1.33 | 0.008 | | gm/day |
| Hexachlorobenzene | 74 | 301 | G | 1.33 | 0.008 | | gm/day |
| Hexachlorobutadiene | 54 | 144 | G | 1.33 | 0.008 | | gm/day |
| Hexachloroethane | 74 | 301 | G | 1.33 | 0.008 | | gm/day |
| Naphthalene | 7 | 18 | G | 1.33 | 0.008 | | gm/day |
| Phenanthrene | 7 | 18 | G | 1.33 | 0.008 | | gm/day |
| Pyrene | 8 | 18 | G | 1.33 | 0.008 | | gm/day |
| 1,1,1-Trichloroethane | 8 | 22 | G | 0.83 | 0.005 | | gm/day |
| 1,1,2-Trichloroethane | 12 | 48 | G | 0.83 | 0.005 | | gm/day |
| 1,1-Dichloroethane | 8 | 22 | G | 0.83 | 0.005 | | gm/day |
| 1,1-Dichloroethene | 8 | 23 | G | 0.83 | 0.005 | | gm/day |
| 1,2-Dichloroethane | 74 | 301 | G | 0.83 | 0.005 | | gm/day |
| 1,2-Dichloropropane | 74 | 301 | G | 0.83 | 0.005 | | gm/day |
| Benzene | 22 | 51 | G | 0.33 | 0.002 | | gm/day |
| Carbon Tetrachloride | 54 | 144 | G | 0.83 | 0.005 | | gm/day |
| Chlorobenzene | 54 | 144 | G | 0.83 | 0.005 | | gm/day |
| Chloroethane | 42 | 112 | G | 1.67 | 0.010 | | gm/day |
| Chloroform | 42 | 123 | G | 0.83 | 0.005 | | gm/day |
| Chloromethane | 42 | 112 | G | 1.67 | 0.010 | | gm/day |
| cis-1,3-Dichloropropene | 74 | 301 | G | 0.83 | 0.005 | | gm/day |
| Ethylbenzene | 54 | 144 | G | 0.83 | 0.005 | | gm/day |
| Methylene Chloride | 14 | 64 | G | 0.83 | 0.005 | | gm/day |
| Nitrobenzene | 847 | 2423 | G | 1.33 | 0.008 | | gm/day |
| Tetrachloroethene | 20 | 62 | G | 0.83 | 0.005 | | gm/day |
| Toluene | 11 | 28 | G | 0.83 | 0.005 | | gm/day |
| trans-1,2-Dichloroethene | 9 | 25 | G | 0.83 | 0.005 | | gm/day |
| trans-1,3-Dichloropropene | 74 | 301 | G | 0.83 | 0.005 | | gm/day |
| Trichloroethene | 10 | 26 | G | 0.83 | 0.005 | | gm/day |
| Vinyl Chloride | 37 | 65 | G | 0.33 | 0.002 | | gm/day |
| | | | | | | | |
| | | | | | | | |
| Shaded values represent detection limits | | | | | | | |
| | | | | | | | |
| Lab Dilution Factor | | | | 1 | | | |

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Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS -----> | | | 912 | | 912 | | 912 | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED -----> | | | 4/22/2013 | | 5/1/2013 | | 6/3/2013 | |
| TIMES AT WHICH SAMPLES WERE COLLECTED -----> | | | 945 | | 900 | | 900 | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | M | 52338 | M | 56475 | M | 55776 | gal/day |
| | | | | | | | | |
| DMAC (daily max) | 7091 | C | 198 | C | 11 | C | 2 | lb/day |
| DMAC (monthly average) | 5459 | C | 198 | C | 11 | C | 2 | lb/day |
| | | | 454 | | 23.4 | | 4.3 | ppm |
| Convert to mg/L: | | | | | | | | |
| $2\frac{lb}{day} \times \frac{day}{55,776\ gal} \times \frac{1\ gal}{3.785L}$ | $\frac{1kg}{2.2lb}$ | | $\frac{1000g}{1kg}$ | | $\frac{1000mg}{1g}$ | | | |
| Lab Dilution Factor | | | 2 | | 1 | | 1 | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ___(JAN-MAR) X____(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 915 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 5/3/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0800 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | 0.117 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Chloroform | 524.2 | 0.10 | 0.03 | G | <0.02 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Diethyl amine* | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Triethyl amine* | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.26 | | | | | | mg/L |
| *** Annual monitoring requirement done in 1st qtr 2013* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _____(JAN-MAR) _X___(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 920 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 4/17/2013 | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0830 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 13,000 | E | | | | | | gal/day |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.400 | G | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.100 | G | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) _X___(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 927 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 5/7/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1401 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) _X___(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 930 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 4/15/2013 | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0800 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 650 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _____(JAN-MAR) _X___(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | | | 933 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | | | NA | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | | | NA | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| ** No flow this quarter* | | | | | | | | | | | | |
| Dilution by lab | | | | | NA | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) __X__(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By:

**Part II: ANALYTICAL RESULTS OF SELF MONITORING** → SP closed on 12/18/2012.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | | | 935 | | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | | | NA | | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | | | NA | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | | mg/L |
| Chloroform | 524.2 | 0.10 | 0.03 | G | * | | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | * | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | * | | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | * | | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | * | | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | * | | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | * | | | | | | | mg/L |
| Diethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | | mg/L |
| Triethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | | mg/L |
| ** No PEG flow this quarter* | | | | | | | | | | | | |
| Dilution by lab | | | | | NA | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ___(JAN-MAR) __X___(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS ----->** | | | | | **936** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED ----->** | | | | | 5/1/2013 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED ----->** | | | | | 0900 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 16,500 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | 0.008 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Diethyl amine** | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Triethyl amine** | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.26 | | | | | | mg/L |
| | | | | | | | | | | | |
| *** Chloroform Results** | **Raw Water** | **SP936** | **SP936- Raw Water** | | | | | | | | |
| **5/1/2013** | **0.0118** | **0.020 mg/l** | **0.008** | | | | | | | | |
| | | | | | | | | | | | |
| ***Results above reported as the difference between SP936 and Raw Water*** | | | | | | | | | | | |
| *** Annual monitoring requirement taken in 1st qtr 2013* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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2013 2Q SP9XX PEG.xlsx

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) _X___(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | | | 937 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | | | 4/17/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | | | 0840 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 23,000 | | | | | | gal/day |
| Tetrahydrofuran | 524.2 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _____(JAN-MAR) _X___(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 938 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 5/7/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1300 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 71 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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METROPOLITAN ST LOUIS SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

**PART I: IDENTIFYING INFORMATION** 1011-7281-00

Company Name: **MALLINCKRODT LLC**

Permit No: 21120596-3.1

Premise Address: 3600 North Second Street, St. Louis, MO 63147

Reporting Period: ☐ JAN-MAR ☒ APR-JUN ☐ JUL-SEP ☐ OCT-DEC

**PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER SYSTEM**

| RADIONUCLIDE | ACTIVITY DISCHARGED (millicuries) |
|---|---|
| | |
| | |
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| TOTAL ACTIVITY DISCHARGED: | **No activity recorded this period.** |

**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 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.

RECEIVED
AUG 12 2013
DIVISION OF ENVIRONMENTAL COMPLIANCE

Print/type name of signing official: James A. Walter

Title: Sr. Director of Manufacturing

Telephone: 314-654-1300

Signature:

Date: 8/12/13

## Scott Rehmer

SR ✓

**From:** Crouch, Amber <Amber.Crouch@mallinckrodt.com>
**Sent:** Thursday, July 18, 2013 2:02 PM
**To:** Scott Rehmer
**Subject:** RE: Follow up from Mallinckrodt release on 7/9/13

1011-7281-00

Update to letter sent of July 12, 2013 regarding Magnesium Stearate release.

As mentioned before, it was determined that the water valve was left open, causing tank 2 to overflow. The water filled up the tank and pushed the stearates out the top. The tank has a lid but is not tightly closed. The water valve was left on by the 2nd shift operator and there is no 3rd shift operator. That is why it wasn't discovered until the 1st shift operator came in. After meeting with building personnel and management this week we have come up with the following corrective actions.

1. The city water valves to tank 2 in the building will be locked out by the first shift supervisor at the end of the first shift. This will prevent 2nd or 3rd shift operators from being able to open the water valve to tank 2.

2. The building will be developing a startup, shutdown plan and training operators over the next several weeks as this incident occurred during a startup.

Please let me know if you need any additional information.

Thanks,

Amber Crouch, CHMM I Senior Environmental Specialist Mallinckrodt Pharmaceuticals
3600 N. 2nd Street I St. Louis, MO 63147 I USA
T: 314.654.0127
amber.crouch@mallinckrodt.com I www.mallinckrodt.com This information may be confidential and/or privileged. Use of this information by anyone other than the intended recipient is prohibited. If you receive this in error, please inform the sender and remove any record of this message.

COVIDIEN

July 12, 2013

Mr. Doug Mendoza
Manager, Environmental Compliance
St. Louis Metropolitan Sewer District
10 East Grand Ave
St. Louis, MO 63147

Mr. Scott M. Rehmer
Assistant Engineer, Env. Compliance
St. Louis Metropolitan Sewer District
10 East Grand Ave
St. Louis, MO 63147

**RE: Follow-up to the Magnesium Stearate Release from Building X at the St. Louis Plant**
PERMIT NO. 1011728100-1.1

This letter is a follow-up to an unplanned release of approximately 2000 lbs of magnesium stearate from Building X at the Mallinckrodt St. Louis Plant as reported via phone call to Scott Rehmer on July 9, 2013.

At approximately 0605 on 7/9/2013 it was discovered that Tank 2 in Building X was overflowing. Upon further investigation it was determined that the cause of the release was that the manual water valve was left open, causing the tank to overflow. It is estimated that approximately 2000 lbs. of magnesium stearate went to a plant sewer inside Building X, then through SP010.

Although still under investigation, the likely root cause of the release is operator error. The current corrective action is training. The building is already working on retraining for all of the operators.

Please call me at 314-654-0127 if you have any questions or need additional information.

Sincerely,

Amber Crouch

Amber Crouch
Sr. EHS Specialist

MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO
63147

314-654-2000 [T]
314-654-1251 [F]

**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 9, 2013

Amber Crouch
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Ms. Crouch:

We have reviewed your application dated July 3, 2013 requesting approval to discharge 5,000 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is a calcium acetate solution at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. Information provided in conjunction with the application indicates this waste stream was generated from an acetic anhydride spill that was neutralized with lime. The resulting wash water created a solution of calcium acetate. You also indicated this wastewater will be discharged through sampling point 010.

Based on the information provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary or combined 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 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, Mallinckrodt 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, MALLINCKRODT INC [1011728100]

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt Inc. Evaluated by: SMG

Premise Address: 3600 N. 2nd St. Date: 7/9/13

Send approval letter to applicant

Application Dated: 7/3/13 Received: 7/3/13 All Requested Info. Received: 7/9/13

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: 10117281-00

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 855 Description: calcium acetate sol'n. generated from an acetic anhydride spill neutralized w/ lime

Normal WW flow from premise? N/A _____ ccf/month, 1,118,137 GPD, _____ GPH. @ SP010

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

## Steve Grace

**From:** Crouch, Amber <Amber.Crouch@mallinckrodt.com>
**Sent:** Tuesday, July 09, 2013 1:08 PM
**To:** Steve Grace
**Subject:** RE: emergency discharge permit ?

Acetic anhydride was spilled and neutralized with lime (then washed with water) creating a solution of calcium acetate (salt) and water.

---

**From:** Steve Grace [mailto:sgrace@stlmsd.com]
**Sent:** Tuesday, July 09, 2013 10:59 AM
**To:** Crouch, Amber
**Subject:** RE: emergency discharge permit ?

Hello Amber,

Sorry for the delay. I have a few quick questions...

Was calcium acetate the material that was spilled...or was it used to neutralize another spilled material? If so, what was the other material?

Thanks,
Steve Grace

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**From:** Crouch, Amber [mailto:Amber.Crouch@mallinckrodt.com]
**Sent:** Wednesday, July 03, 2013 2:52 PM
**To:** Steve Grace
**Subject:** RE: emergency discharge permit ?

Okay sounds good. Let me know if you need any additional info.

Have a good weekend,
Amber

---

**From:** Steve Grace [mailto:sgrace@stlmsd.com]
**Sent:** Wednesday, July 03, 2013 2:51 PM
**To:** Crouch, Amber
**Subject:** RE: emergency discharge permit ?

Amber,

Tuesday is definitely possible...maybe even Monday. I'm still hoping to at least begin the review process this afternoon, lol.

Steve

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**From:** Crouch, Amber [mailto:Amber.Crouch@mallinckrodt.com]
**Sent:** Wednesday, July 03, 2013 2:49 PM
**To:** Steve Grace
**Subject:** RE: emergency discharge permit ?

Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

# APPLICATION FOR SPECIAL DISCHARGE APPROVAL

**I. WASTEWATER SOURCE IDENTIFICATION:**

Site Name: Mallinckrodt
Premise Address: 3600 N. 2nd street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt
Contact Person: Amber Crouch
Title: Sr. Env. Specialist
Phone: 314-654-0127 Fax: 314-654-1251

**II. APPLICANT (mailing information):**

Applicant Name: Amber Crouch
Title: EHS department
Company Name: Mallinckrodt
Mailing Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314-654-0127 Fax: 314-654-1251

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Calcium Acetate / Water
2. Process/activity generating wastewater: Spill neutralization
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 |
|---|---|---|
| Calcium acetate | 0.5 | % |
| Water | 95-100 | % |
| | | |
| | | |

| 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: 5000 Gallons
   b. Proposed discharge volume: 5000 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: plant sewer to neutralization at SP01D
   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): _____

   Bldg 200W plant sewer to SP010 _____ 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):** Amber Crouch

**Signature:** Amber Crouch **Date:** 7/3/13

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 10117281-00 Sample Point No. 855

**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

MSD

June 19, 2013

Amber Crouch
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Ms. Crouch:

We have reviewed your application dated June 18, 2013 requesting approval to discharge 8,500 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is approximately 15% DMAc solution from Building 504 at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. Information provided previously indicated this wastewater will be generated during planned maintenance activity at the above building and will result in a bypass of the DMAC recovery system for the wastewater in question. You also indicated this wastewater will be discharged through sampling point 010.

Based on the information provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary or combined sewer on site. Due to the percentage of DMAc in the wastewater, the discharge is limited to 2,700 gallons per day. 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, Mallinckrodt 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, MALLINCKRODT INC [1011728100]

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt  Evaluated by: SMG

Premise Address: 3600 N. 2nd St.  Date: 6/20/13

Send approval letter to applicant

Application Dated: 6/18/13 Received: 6/18/13 All Requested Info. Received: 6/19/13

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.

* o:\costrecovery\cross reference xls file
** o:\costrecovery\sourlist xls file

SOURCE TYPE (circle): (IU) / Dead IU / SD

INDUSTRY ID: 10117281-00

Sample Point: No. Assigned: 822 Description: 10-15% DMAc solution (condensate WW from imaging agent production operation from SPAIZ outside of Bldg. 504

Normal WW flow from premise? N/A _____ ccf/month, 150,000 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

*- exceeds permit daily & monthly mass limits; discharge rate of 2,700 gpd applies

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) % of DMAc in WW exceeds calculated FT for DMAc; as a result
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 = 113 gal/hour (see comments above)
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

DISCHARGE LIMITATIONS

SAMPLING POINT REFERENCE NUMBER: 912

SAMPLING POINT LOCATION: Valve on discharge line from outdoor Tank #450 on SE corner of Building 504

AVERAGE WASTEWATER FLOW (GPD): 150,000

WASTEWATER SOURCE AND CATEGORY: Non-Categorical Process (ASI process waste from bldgs 504/505)

DISCHARGE LIMITATIONS AND SELF-MONITORING REQUIREMENTS

| Parameter | Limit * | Limit Type ** | Sampling Frequency |
|---|---|---|---|
| Flow [GPD] | *** | Daily Avg | Once/month |
| N,N-Dimethyl Acetamide [LB / DAY] | 7,091 | Daily Avg | Once/month |
| N,N-Dimethyl Acetamide [LB / DAY] | 5,459 | Monthly Avg | Once/month |

* Limits are based on MSD Ordinance 12559 and applicable federal categorical standards. See Section II of the permit conditions for explanation of any adjustments to the published limits made pursuant to Article V, Section 2.B of the Ordinance.

** See Section I.A.2 of the permit conditions.

*** If additional flow measurements or estimates are made, all must be reported.

**** See Section I.A.11 of the permit conditions.

# Mallinckrodt DMAc

8,500 gal. total
85% water = 7225 gal
15% DMAc = 1275 gal = 10,634 lbs.

DMAc permit limits: 7,091 lbs/day (daily avg.)
5,459 lbs/day (monthly avg.)

85% water = 850,000 mg/L
15% DMAc = 150,000 mg/L ; FT is 18,667 mg/L - need to calc. a discharge rate

per A. Crouch, typical avg. DMAc discharge is still 2,000 lbs/day; so that will also limit discharge - only 3,459 lbs/day can be discharged

# On-Site Special Discharge Flow Rate Calculator

**This calculator does not consider attributable concentrations from normal flow**

**1 GENERAL INFORMATION:**

| | |
|---|---|
| Date: | 06/18/13 |
| Calculated by: | Steve Grace |
| Source name: | MALLINCKRODT LLC [1011728100] |
| Waste material: | SP822 |
| Discharge volume: | 8,500 gallons |

**2 PLANT DATA (as needed):** FY07

Treatment area: Bissell

| | Flow (MGD) |
|---|---|
| Bissell | 119 |
| Coldwater | 23 |
| Fenton | 5 |
| Grand Glaize | 16 |
| Lemay | 122 |
| Lower Meramec | 10 |
| Missouri River | 28 |

**3 MINIMUM REQUIRED FLOW RATE:**

| | | | |
|---|---|---|---|
| SD Concentration = | 150,000 | mg/L | |
| SD Limit = | 18,667 | mg/L | Define the SD limit here = Ord Prohibition - Fume Tox (DMAc) |
| Normal Flow Rate = | 6,250 | GPH | Use normal flow, RF, upstream flow and plant flow, as applicable |
| Safety Factor = | 10% | default is 10%, apply more as neccessary | |
| **SD Flow Rate =** | **800** | **GPH** | |
| **SD Flow Rate =** | **13** | **GPM** | |
| **Total discharge time =** | **11** | **Hours** | |

**Comments:**

**6,250 gph at SP912 outside Building 504. Smg**

Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

# APPLICATION FOR SPECIAL DISCHARGE APPROVAL

**I. WASTEWATER SOURCE IDENTIFICATION:**

Site Name: Mallinckrodt
Premise Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt
Contact Person: Amber Crouch
Title: Sr. Env. Specialist
Phone: 314-654-0127 Fax: 314-654-1251

**II. APPLICANT (mailing information):**

Applicant Name: Amber Crouch
Title: EHS department
Company Name: Mallinckrodt
Mailing Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314-654-0127 Fax: 314-654-1251

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: ~~EE~~ DMAC/water
2. Process/activity generating wastewater: ~~off~~ process cleanout
3. Physical and chemical composition: List all constituents, and known or poteptially 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 | 85-90 | % |
| dmac | 10-15 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 8500 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: pH adjust at SP010
   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): plant sewer to main outfall SP010 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): ~~Amber Crouch~~

   Signature: ~~Amber Crouch~~ 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): Amber Crouch

Signature: Amber Crouch Date: 6/18/13

**FOR MSD USE ONLY:**

File Name: Mallinckrodt Inc. ID No. 10117281-00 Sample Point No. 822

Not scanned

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7289CR — Dimethylacetamide
Revised 14-DEC-2007

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Substance ID :130000000030

---

## CHEMICAL PRODUCT/COMPANY IDENTIFICATION

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### Material Identification

| | |
|---|---|
| Corporate MSDS Number | : DU000262 |
| CAS Number | : 127-19-5 |
| Formula | : CH3CON(CH3)2 |
| Molecular Weight | : 87.12 |
| CAS Name | : ACETAMIDE, N,N-DIMETHYL |
| Grade | : TECHNICAL |

### Tradenames and Synonyms

DMAC
N,N-DIMETHYLACETAMIDE

### Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont Chemical Solutions Enterprise
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

| | |
|---|---|
| Product Information | : 1-800-441-7515 (outside the U.S. 302-774-1000) |
| Transport Emergency | : CHEMTREC 1-800-424-9300(outside U.S. 703-527-3887) |
| Medical Emergency | : 1-800-441-3637 (outside the U.S. 302-774-1000) |

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## COMPOSITION/INFORMATION ON INGREDIENTS

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### Components

| Material | CAS Number | % |
|---|---|---|
| DIMETHYLACETAMIDE | 127-19-5 | 100 |

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## HAZARDS IDENTIFICATION

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### Potential Health Effects

Human experience or case reports have identified the following potential effects from overexposure by skin contact with Dimethylacetamide; slight irritation with itching, redness or swelling. There are no reports of human

skin sensitization. Skin permeation may occur in amounts capable of producing the effects of systemic toxicity.

Eye contact with Dimethylacetamide may cause eye irritation with tearing, pain or blurred vision.

Short-term overexposure to Dimethylacetamide by inhalation, ingestion, or skin contact may cause non-specific effects such as headache, nausea and weakness, dizziness, or drowsiness. Repeated or excessive over-exposure may cause altered liver function or abdominal pain, vomiting or jaundice. Animal data suggests that abnormal kidney function with altered results on blood tests may occur from excessive exposures. Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of the liver, or kidneys.

If there is significant potential for skin contact with Dimethylacetamide (DMAC), biological monitoring should be done to measure the level of DMAC metabolites in urine specimens collected at the end of the shift. It is a DuPont practice to limit an individual's end-of-shift DMAC metabolites to levels at or below 30 ppm expressed as N-methylacetamide (MMAC).

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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FIRST AID MEASURES

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First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

Notes to Physicians

Activated charcoal mixture may be beneficial. Suspend 50 g activated charcoal in 400 mL water and mix well. Administer 5 mL/kg, or 350 mL for an average adult.

For significant ingestion, gastric lavage may be advisable.

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FIRE FIGHTING MEASURES

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Flammable Properties

| | |
|---|---|
| Flash Point | : 63 C (145 F) |
| Method | : TCC |
| Flammable limits in Air, % by Volume | |
| LEL | : 1.8 at 100 C (212 F) |
| UEL | : 11.5 at 160 C (320 F) |
| Autodecomposition | : >350 C (>662 F) |
| Autoignition | : 335 C (635 F) |

Actual Autoignition Temperature (AIT) can be affected by the concentration of vapors and oxygen, vapor/air contact time, pressure, volume, catalytic impurities, etc. Process conditions should be analyzed to determine if the AIT's may be higher or lower.

Combustible liquid. Follow appropriate National Fire Protection Association (NFPA) codes.

Extinguishing Media

Alcohol Resistant Foam, Dry Chemical, $CO_2$.

Fire Fighting Instructions

Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus (SCBA) and full protective equipment. Cool tank/container with water spray. Water sprays may be used to flush spills away from exposures. If leak has not been ignited, use water spray to disperse vapors and protect personnel attempting to stop leak.

Firefighters' protective clothing may not supply chemical resistance to this product. Chemical-resistant suit with hood and self-contained breathing apparatus should be worn where liquid contact with this product could occur. Decontaminate all equipment used in firefighting efforts before returning to service.

## ACCIDENTAL RELEASE MEASURES

### Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

### Initial Containment

Dike spill with earth or sand. Follow applicable Federal, State/Provincial and Local laws/ regulations.

### Spill Clean Up

Transfer spilled material and absorbent to metal drums for disposal. Flush away traces with water.

Soak up with sand, dirt, or other noncombustible absorbent materials.

## HANDLING AND STORAGE

### Handling (Personnel)

Do not get on skin. Do not get on clothing. Avoid breathing vapors or mist. Avoid contact with eyes. Wash thoroughly after handling. Discard shoes or other leather clothing if contaminated.

### Handling (Physical Aspects)

Keep away from heat, sparks and flames. Keep container tightly closed. Do not use pressure to unload drums or containers.

### Storage

Store in a well ventilated area away from heat and sunlight.

Keep container tightly closed. Keep closure (bung) up to prevent leakage.

## EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Controls

Use sufficient ventilation to keep employee exposure below recommended limits. Maintain walking and working surfaces free of liquid product.

### Personal Protective Equipment

EYE/FACE PROTECTION

Wear safety glasses (side shields preferred). Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact due to splashing or spraying materials.

RESPIRATOR

A NIOSH approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a NIOSH approved positive pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

PROTECTIVE CLOTHING

Wear impervious clothing, such as gloves, apron, boots, or whole bodysuit as appropriate.

Recommended glove and clothing material: Butyl Rubber.

Neoprene gloves are acceptable for short duration tasks such as turning valves and product transfer operations where more durable abrasion-resistant gloves are needed.

Gloves should be inspected before each use and discarded if they show tears, pinholes, or signs of wear.

If handling material above its flash point, wear flame resistant clothing.

Exposure Guidelines

Exposure Limits

Dimethylacetamide

| | | |
|---|---|---|
| PEL | (OSHA) | : 10 ppm, 35 mg/m3, 8 Hr. TWA, Skin |
| TLV | (ACGIH) | : 10 ppm, 36 mg/m3, 8 Hr. TWA, Skin, A4 |
| AEL * | (DuPont) | : 10 ppm, 8 & 12 Hr. TWA, Skin |
| BEI | | : |

| Determinant | Sampling Time | BEI | Notation |
|---|---|---|---|
| N-Methylacetamide in Urine | End of Shift at end of workweek | 30 mg/g creatinine | |
| N-Methylacetamide in Urine | End of Shift (Applies to 8 and 12 hour workday) | 30 ppm of MMAC | |

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

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## PHYSICAL AND CHEMICAL PROPERTIES

### Physical Data

| | |
|---|---|
| Boiling Point | : 166 C (331 F) @ 760 mm Hg |
| Vapor Pressure | : 2 mm Hg @ 25 C (77 F)<br>4 mm Hg @ 38 C (100 F) |
| Vapor Density | : 3 (Air=1.0) |
| Freezing Point | : -20 C (-4 F) |
| Evaporation Rate | : <1 |
| Solubility in Water | : 100 WT% |
| pH | : Slightly acidic in aqueous solution |
| Odor | : Faint, ammoniacal odor |
| Odor Threshold | : 47 ppm |
| Form | : Clear liquid |
| Color | : Colorless |
| Specific Gravity | : 0.945 @ 16 C (61 F) |

## STABILITY AND REACTIVITY

### Chemical Stability

Stable at normal temperatures and storage conditions.

### Incompatibility with Other Materials

Strongly exothermic reactions with highly halogenated compounds such as carbon tetrachloride or benzene hexachloride may occur in the presence of iron, or with strong oxidizing agents.

### Decomposition

Decomposition temperature: >350 C (>662 F)

Thermal decomposition may produce Dimethylamine, Acetic Acid.

### Polymerization

Polymerization will not occur.

## TOXICOLOGICAL INFORMATION

### Animal Data

Dimethylacetamide:

Dermal LD50, rabbit: 2,240 mg/kg
Oral LD50, female rat: 4,930 mg/kg
Inhalation 1 hour, LC50, female rat: 8.81 mg/L

Animal testing indicates Dimethylacetamide is a slight to mild skin irritant, and a mild eye irritant, but is not a

skin sensitizer.

Repeated exposure by skin contact caused weakness, degeneration of the liver, central nervous system depression, incoordination, inflammation of the skin, and dry skin..

Repeated exposure to high doses by ingestion caused pathological changes of the stomach, and lungs. Repeated exposure to lower concentrations caused reduced weight gain, diarrhea, anemia, histopathological changes of the liver, kidneys, stomach, and testes. Long-term exposure by ingestion caused increased liver, kidney, and adrenals weight, and altered clinical chemistry.

A near lethal exposure by inhalation produced degeneration of the liver, and kidneys. Repeated exposure caused liver injury, upper respiratory tract irritation, degeneration of the testes, and pathological changes of the bone marrow. Long-term exposure by inhalation caused degeneration of the liver, and increased liver and kidney weights. Long-term exposure by inhalation at even higher concentrations caused degeneration of the kidneys and retinal atrophy in female mice.

In animal testing Dimethylacetamide has not caused carcinogenicity. Most animal data show developmental effects only at exposure levels producing other toxic effects in the adult animal. Dimethylacetamide is not considered a unique developmental hazard to the conceptus. Some tests in adult animals have shown that Dimethylacetamide may cause changes to the testes only at levels which produce other toxic effects in the adult animal. Reproductive data on adult animals show no change in reproductive performance. Dimethylacetamide is not considered a unique reproductive hazard. Dimethylacetamide has not produced genetic damage in bacterial cultures. It has not produced genetic damage in tests on animals. In animal testing, Dimethylacetamide has not caused permanent genetic damage in reproductive cells of mammals (has not produced heritable genetic damage).

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## ECOLOGICAL INFORMATION

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Ecotoxicological Information

AQUATIC TOXICITY:

48 hour TLm - Himedaka: 1,000 mg/L
96 hour LC50 - Fathead minnows: 1500 mg/L

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## DISPOSAL CONSIDERATIONS

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Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Incinerate material in accordance with Federal, State/Provincial and Local requirements. If approved, may be disposed of by incineration, bio-oxidation, removal to a licensed hazardous material landfill. Bio-oxidation feasibility may have to be first confirmed in tests using simulated stream and bio-organism conditions, particularly if the product is a new nutrient or is increased to substantial concentrations in a waste stream. Bacteria must be kept acclimated to this product.

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TRANSPORTATION INFORMATION

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Shipping Information

DOT

| | |
|---|---|
| Proper Shipping Name | : COMBUSTIBLE LIQUID, N.O.S. (DIMETHYLACETAMIDE) |
| Hazard Class | : COMBUSTIBLE LIQUID |
| I.D. No. (UN/NA) | : NA 1993 |
| DOT Label(s) | : NONE |
| Packing Group | : III |
| Special Information | : NOT REGULATED BY DOT IN CONTAINERS LESS THAN 119 GALLONS. |

DOT/IMO

| | |
|---|---|
| Special Information | : NOT REGULATED AS A HAZARDOUS MATERIAL BY IMO. |

Shipping Containers

Tank Cars.
Tank Trucks.
Steel Drums : 55-gallon

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REGULATORY INFORMATION

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U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

| | |
|---|---|
| Acute | : Yes |
| Chronic | : Yes |
| Fire | : Yes |
| Reactivity | : No |
| Pressure | : No |

HAZARDOUS CHEMICAL LISTS

SARA Extremely Hazardous Substance: No
CERCLA Hazardous Substance : No

Canadian Regulations

CLASS B Division 3 - Combustible Liquid.

CLASS D Division 2 Subdivision B - Toxic Material. Chronic Toxic Effects.

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OTHER INFORMATION

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NFPA, NPCA-HMIS

NFPA Rating
Health : 2
Flammability : 2
Reactivity : 0

NPCA-HMIS Rating
Health : 1 (Chronic Health Effects)
Flammability : 2
Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

Additional Information

For further information, see DuPont DMAC "Properties, Uses, Storage, and Handling Bulletin".

The "Skin" notation in the Exposure Limits Section indicates that liquid or vapor may penetrate the skin. Control of vapor and mist inhalation alone may not be sufficient to prevent an excessive dose.

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsible for MSDS : MSDS Coordinator
> : DuPont Chemical Solutions Enterprise
Address : Wilmington, DE 19898
Telephone : (800) 441-7515

**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

**MSD**

June 10, 2013

Amber Crouch
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

**Re: Wastewater User Charge Billing for Special Discharge**

Dear Ms. Crouch:

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 18, 2013. That charge was determined using the ethylene glycol concentration in your application for special discharge. The discharge dates and quantities are from information submitted by you in an email dated June 10, 2013.

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 13402. 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:** May 9, 2013

**SOURCE OF WASTE:** 40% ethylene glycol solution from Building 250 at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri.

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| May 9, 2013 | Extra-Strength Surcharge | 220 | Gal | $0.52 | $114.40 |
| **Total:** | ------ | **220** | Gal | ----- | **$114.40** |

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 - Finance Dept.
Becky Bartholomew – Finance Dept.
Mary Wimsatt – Finance Dept.
Laura Joiner – Finance Dept.
Doug Mendoza
Brian Gibson

File: IU; MALLINCKRODT LLC [101172810O]; 3600 N. 2nd Street, St. Louis.

## Steve Grace

**From:** Crouch, Amber <Amber.Crouch@Covidien.com>
**Sent:** Monday, June 10, 2013 10:23 AM
**To:** Steve Grace
**Subject:** Mallinckrodt Permits dated April 18th, 2013

Steve,

The following discharge for Ioversol took place on 5/2/2013
Start time: 1:00 pm
End time: 2:00 pm
Volume: 100 gallons

The following discharge for Glycol took place on 5/9/2013
Start time: 11:00 am
End time: 12:00 pm
Volume: 220 gallons

Please let me know if you need any additional information.

Thanks,

Amber Crouch
Senior HSE Engineer
Covidien
3600 North Second Street
St. Louis, MO 63147
USA

(314) 654-0127 office
(314) 253-2213 pager
(314) 654-1251 fax

www.covidien.com

This information may be confidential and/or privileged. Use of this information by anyone other than the intended recipient is prohibited. If you receive this in error, please inform the sender and remove any record of this message.

SR

**MSD**

# INDUSTRY REPORT OF FLOW MEASUREMENT AT TIME OF MSD SAMPLING FOR DISCHARGE POINTS HAVING MASS LIMITATIONS

COMPANY NAME: Mallinckrodt LLC PERMIT NO: 1011728100

Presented to company representative (Name) Amber Crouch by:

MSD Ind. Waste Technician Dave Schepers Date 5/23/13 Time 10:00 A.M.

Certain wastewater discharges from your facility are subject to mass limitations as specified in your Industrial Wastewater Discharge Permit. MSD technicians collected samples from these locations on the date and times indicated below.

In order for MSD to fully evaluate the results of this sampling, you must, for each point, provide MSD with a measured flow for a 24-hour period. The 24 hour period must include the hours between the sample collection Start and End Times shown.

If you have any questions, you may contact Doug Mendoza at (314) 436-8717.

**Industry Representative: Please fill in the information on the right side of this table and sign below:**

| Samp Pt # | Sample Collection by MSD | | | | | 24-hour Flow Measurement by Company | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Sample Match # | Start Date | End Date | Start Time | End Time | Start Time | End Time | Total Flow | Units |
| 905 | 1397795 | 5/23/13 | 5/24/13 | 10:00 A.M. | 9:48 A.M. | 0952 5/23/13 | 0803 5/24/13 | 10,691 | gal |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

I certify under penalty of Law that the flow information in this document was 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.

Signature: Amber Crouch Date: 5/27/13

**As soon as possible, and no later than 14 days after the Sample End date, send the completed form:**

Via US Mail: Attn: Doug Mendoza
Metropolitan St. Louis Sewer District
Office of Environmental Compliance
10 E. Grand Avenue
St. Louis, MO 63147

or, via fax: Attn: Doug Mendoza
(314) 436-8753

MSD-OEC 01/02

SR

MSD

INDUSTRY REPORT OF FLOW MEASUREMENT
AT TIME OF MSD SAMPLING
FOR DISCHARGE POINTS HAVING MASS LIMITATIONS

COMPANY NAME: Mallinckrodt LLC PERMIT NO: 1011728100

Presented to company representative (Name) Amber Crouch by:

MSD Ind. Waste Technician Dave Schepers Date 5/23/13 Time 10:00 A.M.

Certain wastewater discharges from your facility are subject to mass limitations as specified in your Industrial Wastewater Discharge Permit. MSD technicians collected samples from these locations on the date and times indicated below.

In order for MSD to fully evaluate the results of this sampling, you must, for each point, provide MSD with a measured flow for a 24-hour period. The 24 hour period must include the hours between the sample collection Start and End Times shown.

If you have any questions, you may contact Doug Mendoza at (314) 436-8717.

**Industry Representative: Please fill in the information on the right side of this table and sign below:**

| Samp Pt # | Sample Collection by MSD | | | | | 24-hour Flow Measurement by Company | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Sample Match # | Start Date | End Date | Start Time | End Time | Start Time | End Time | Total Flow | Units |
| 905 | 1397795 | 5/23/13 | 5/24/13 | 10:00 A.M | 9:48 A.M | | | | |
| | | / / | / / | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

I certify under penalty of Law that the flow information in this document was 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.

Signature: _____ Date: _____

**As soon as possible, and no later than 14 days after the Sample End date, send the completed form:**

Via US Mail: Attn: Doug Mendoza
Metropolitan St. Louis Sewer District
Office of Environmental Compliance
10 E. Grand Avenue
St. Louis, MO 63147

or, via fax: Attn: Doug Mendoza
(314) 436-8753

MSD-OEC 01/02

MSD

**MALLINCKRODT LLC [1011728100]**
**Premise Address – 3600 N Second Street, 63147**

From: Crouch, Amber Amber.Crouch@Covidien.com Sent: Thu 5/23/2013 7:38 AM
To: Scott Rehmer srehmer@stlmsd.com SR
Cc:
Subject: RE: buprenorphine process

Late summer/ early fall we are going to run the Buprenorphine process at the St. Louis Plant. We did run this process back in 2009. This process uses cyanogen bromide. The wastewater generated would be from the cleanouts of the process tank. The wastewater generated would be discharged to one of the plant's PEG steam strippers for treatment, **SP920** or **SP937**, then to the plant's pH neutralization system and then discharged to MSD via the plant's main outfall **SP010**.

In 2009 we received a special discharge permit for the wastewater because it was a trial batch. We did a lot of sampling because we had no prior analytical.

I wanted to meet with you and go over the process in more detail then determine the best way to permit the wastewater generated going forward. We plan on beginning around Sept. 2013, and the volume will be approximately two 50 gallon rinse waste drums, which will be analyzed and disposed of by Teklab. After receiving analytical results, the wastewater will be discharged through the PEG steam strippers, as already mentioned.

We can talk in detail tomorrow and look at a process flow diagram.

Thanks,
Amber

03

MSD

## Sample Point Closure Memo

**MEMO TO:** **MALLINCKRODT LLC [1011728100]**

**FROM:** Jason Gill JAG

**DATE:** 5/21/13

**SUBJECT:** **CLOSURE OF SAMPLE POINT**

This action began as a request from Mallinckrodt to close out Sample Point 935

12/18/12 was used as the closed/end/discontinue dates for the following:

| SIU ☒ | Non-SIU☐ | Screen Tab | Screen Sub Tab | | | | |
|---|---|---|---|---|---|---|---|
| **General Information Screen** | | | | | | | **Explain if "No"** |
| **Perm** | Insp | General | | Yes ☐ | No Data ☐ | No ☐ | |
| Insp | Insp | Waste | | Yes ☐ | No Data ☐ | No ☐ | |
| Insp | Insp | Ext Ref | | Yes ☐ | No Data ☐ | No ☐ | |
| | | Class | | | | | |
| Insp | Insp | | SIU Status | Yes ☐ | No Data ☐ | No ☐ | |
| Insp | Insp | | Classifications | Yes ☐ | No Data ☐ | No ☐ | |
| Insp | Insp | | Processes | Yes ☐ | No Data ☐ | No ☐ | |
| Insp | Insp | | Programs | Yes ☐ | No Data ☐ | No ☐ | |
| Insp | Insp | | SIC Codes | Yes ☐ | No Data ☐ | No ☐ | |
| Insp | Insp | Materials/Products | | Yes ☐ | No Data ☐ | No ☐ | |
| **Perm** | Insp | Outlets/Discharges | | Yes ☐ | No Data ☐ | No ☐ | |
| **Sample Point Screen** | | | | | | | |
| **Perm** | Insp | Definition (Do NOT close 8xx's) | | Yes ☒ | No Data ☐ | No ☐ | |
| Insp | Insp | Pretreatment | | Yes ☒ | No Data ☐ | No ☐ | |
| Insp | Insp | Discharge | | Yes ☒ | No Data ☐ | No ☐ | |
| **Perm** | Insp | Limits (set date) | | Yes ☒ | No Data ☐ | No ☐ | |
| **Monitoring Screen** | | | | | | | |
| Insp | Insp | Events-**Sampling Events Only!** | | Yes ☐ | No Data ☐ | No ☐ | |
| **Perm** | **Perm** | Events-**Inspection Events!** | | Yes ☐ | No Data ☐ | No ☐ | |
| [redacted] | | was used by the Permit Engineer as the expire/discontinue dates for the following: (To be completed by the Permit Engineer) _____ [initials] | | | | | |
| **Perm** | **Perm** | Self-Monitoring Reports | | Yes ☐ | No Data ☐ | No ☐ | |
| **Perm** | **Perm** | General Reports | | Yes ☐ | No Data ☐ | No ☐ | |
| **Permits Screen** | | | | | | | |
| **Perm** | **Perm** | Permit | | Yes ☐ | No Data ☐ | No ☐ | |

- The Yes box is checked where the above-mentioned date was entered on the corresponding screens for end/deactivation/discontinue dates.
- The No Data box is checked for screens where there was no data populating the screens, so nothing was entered in the fields for end/deactivation/discontinue dates.

| **Sample Point Map** | | | | | **Explain if "No"** |
|---|---|---|---|---|---|
| Insp | Insp | Was "-closed" added to the end of the MXD file name? | Yes☐ | No☐ | |
| Insp | Insp | Was "-closed" added to the end of all the facility's PDF file names? | Yes☐ | No☐ | |

Explanation for a check in a No box (if not explained in box to right of "No") :

07/2012

**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

MSD

**TO:** Chris Verplancke - Finance Department

**FROM:** Steven M. Grace – DEC SMG

**DATE:** May 9, 2013

**RE:** **Wastewater User Charge Billing for Special Discharge**

Please bill, by invoice, the following charges applicable to an on-site special discharge approved in our letter dated October 30, 1998, as modified in letters dated November 20, 1998, July 19, 1999, March 28, 2001, October 13, 2004, June 19, 2006, May 22, 2008, May 10, 2010, and May 24, 2012. The discharge dates and quantity are from information submitted by Sharon Cotner, Corps of Engineers, in a letter dated April 30, 2013.

This charge is based on the rates in MSD Wastewater User Charge Ordinance 13042.

**PARTY TO BILL:** **Larry Joellenbeck**
**The Shaw Group Inc.**
**1 Angelrodt Street**
**St. Louis, MO 63147**

**BILLING IS FOR:** **On-Site Special Discharge**

**DISCHARGE PERIOD:** **January through March 2013**

**SOURCE OF WASTE:** **Treated construction water from the St. Louis Downtown FUSRAP Site located at Mallinckrodt, Inc., 3600 N. Second Street, St. Louis, Missouri.**

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| 1/1/13 - 3/31/13 | Volume | 155 | CcF | $2.28 | $353.40 |
| Totals: | --- | 155 | CcF | --- | $353.40 |

If you have any questions, please call me on extension 8755.

bv

pc: Becky Bartholomew – Finance Dept.
Mary Wimsatt – Finance Dept.
Laura Joiner – Finance Dept.
Brian Gibson
Doug Mendoza
Larry Joellenbeck, The Shaw Group Inc., 1 Angelrodt St., St. Louis, MO 63147

File: IU, MALLINCKRODT INC [illegible]
101-7281-00

MSD

SR 4/30

COVIDIEN

April 23, 2013

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

Re: 2013 1st Quarter Self-Monitoring Report for Permit No. 21120596 – 3.1

Dear Mr. Mendoza,

1011-7281-00

Please find enclosed the 2013 1st Quarter Self-Monitoring report for Mallinckrodt Inc.

The following sample points received no pharmaceutical process water flow during the second quarter: SP008, SP080, SPP935.

CT Excavation activities continued during the first quarter 2013 and there were multiple discharges under the Special Discharge Permit issued for wastewater generated from CT remediation activities. A summary of the discharges is provided in the Industrial User Radioactive Discharge Report included in this submittal.

On 3/25/2013 the lift station outfall SP011 overflowed directly to MSD for approximately 90 minutes. This was due to a pump failure. The pump was quickly repaired. Samples were taken and analyzed and are included in this report. During this overflow event we did not lose power and the pH probes were recording.

If you have any questions or require more detailed information, please contact me at 314-654-0127.

Sincerely,

Amber Crouch

Amber Crouch
Sr. Environmental Specialist

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COVIDIEN/MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

## 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.**

| | |
|---|---|
| A | NO CHANGE IN WASTEWATER DISCHARGE AT SAMPLE POINTS WITH NO MONITORING REQUIRED |
| | For permit special conditions that waive monitoring at any sample point(s) specified in your permit, you are required to make the following certification for each report in which monitoring is waived:<br>____ I certify, since the last discharge monitoring report, there has been no change in the character of the wastes discharged at sample points 001 and 002.<br>____ I certify, since the last discharge monitoring report, there has been no discharge from sample points 008 and 011. |
| B | NO CHANGE IN WASTEWATER DISCHARGE AT ACTIVE CONNECTIONS WITHOUT SAMPLE POINTS |
| | For permit special conditions that waive monitoring at active connection points which are not specified as sample points in your permit, you are required to make the following certification:<br>____ I certify, since the last discharge monitoring report, there has been no change in the character of wastes discharged at those active connection points which are not specified in my permit. |
| E | NO DISCHARGE OF CATEGORICAL WASTE |
| | For permit special conditions that prohibit discharge of wastes which are subject to certain categorical pretreatment standards, you are required to make the following certification:<br>____ I certify, since the last discharge monitoring report, there has been no discharge of wastes which are subject to pretreatment standards in 40 CFR 414 (except for those wastes conveyed by SP 905). |
| F | CYANIDE NOT USED OR GENERATED IN 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from limitations and monitoring for Total Cyanide at the Pharmaceutical sample points 080, 915, 920, 935, 936, and 937, subject to the following certification:<br>____ I certify, since the last discharge monitoring report, cyanide has not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. |
| H | PHARMACEUTICAL POLLUTANTS NOT USED OR GENERATED IN 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants at the Pharmaceutical sample points 915, 935, and 936, subject to the following certification:<br>____ I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, have not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. In addition, the above-referenced report remains valid. |
| I | SURROGATE MONITORING ALLOWED FOR 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants, and replaced by monitoring for surrogate pollutant(s), at the Pharmaceutical sample points 920 and 937 subject to the following certification:<br>____ I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, continue to receive the same degree of treatment as the surrogate pollutant(s). In addition, the above-referenced report remains valid. |

## PART IV: GENERAL CERTIFICATION STATEMENTS

| | |
|---|---|
| B | DISCHARGE MONITORING REPORT CERTIFICATION |
| | **All permittees must sign and complete the information below:**<br>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.<br>Print or type name of signing official: James A. Walter<br>Title: Senior Director of Manufacturing Telephone: 314-654-1300<br>Signature: ____ Date: 4/25/13 RECEIVED |



APR 26 2013

DIVISION OF ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Mallinckrodt -

Permit No: 2112059600-3

Premise Address: 3600 N Second St. St. Louis, MO 63147

Reporting Period: ☒(JAN-MAR) ☐(APR-JUNE) ☐(JULY-SEPT) ☐(OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER SYSTEM

| RADIONUCLIDE | ACTIVITY DISCHARGED (millicuries) |
|---|---|
| Ur-234 | $1.45 \times 10^{-3}$ |
| Ur-235 | $7.98 \times 10^{-5}$ |
| Ur-238 | $1.36 \times 10^{-3}$ |
| Ra-226 | $1.98 \times 10^{-3}$ |
| Ra-228 | $3.84 \times 10^{-4}$ |
| Th-228 | $7.61 \times 10^{-5}$ |
| Th-230 | $1.92 \times 10^{-4}$ |
| Th-232 | $3.06 \times 10^{-5}$ |
| | |
| | |
| | |
| | |
| | |
| | |
| TOTAL ACTIVITY DISCHARGED: | $5.55 \times 10^{-3}$ |

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 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.

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Print/type name of signing official: James A. Walter

Title: Senior Director of Manufacturing Telephone: 314-654-1300

Signature: Date: 4/25/13

radrpt.doc 2/00

MSD 013687

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _X____(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) _____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **001** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | | UNITS |
| FLOW | | E | 1,000 | | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: __X___(JAN-MAR) _____(APR-JUNE) _____(JULY-SEPT) __(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **002** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated fld | | | | | | UNITS |
| FLOW | | E | 2,200 | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _X___(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **003** | | **009** | | **099** | |
|---|---|---|---|---|---|---|---|---|
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/8/2013 | | 1/8/2013 | | calculated | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0740, 0840, 0940, 1040 | | 0810, 0910, 1010, 1110 | | n/a | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | M | 13,651 | M | 10,109 | E | 3,542 | gal/day |
| Oil & Grease | 200 | G | 8 | G | 21 | E | 0* | mg/l |
| Biochemical Oxygen Demand | **** | C | 158 | C | 270 | E | 0* | mg/l |
| Chemical Oxygen Demand | **** | C | 393 | C | 608 | E | 0* | mg/l |
| Total Suspended Solids | **** | C | 65 | C | 60 | E | 79 | mg/l |
| Temperature | **** | G | 22 | G | 11.1 | E | 22 | deg C |
| pH | **** | G | 7.0 | G | 7.0 | E | 6.7 | S.U. |
| **** No limits for SP003 or SP009; monitoring requirement only for calculation at SP099 | | | | | | | | |
| * Calculated value was less than zero. | | | | | | | | |
| Lab Dilution Factor | | | 1,1.67 | | 1,5 | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _X____(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ___(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | | -----> | | 003 | | 009 | | 099 | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | | -----> | | 1/8/2013 | | 1/8/2013 | | calculated | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | | -----> | | 0740, 0840, 0940, 1040 | | 0810, 0910, 1010, 1110 | | | |
| PARAMETER | | | | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | | | **** | M | ~~77,587~~ | M | ~~48,816~~ | | ~~28,771~~ | gal/day |
| | | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| 1,1,2,2-Tetrachloroethane | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| 1,1,2-Trichloroethane | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| 1,1-Dichloroethane | | | | **** | G | 0.0028 | G | <0.125 | | 0* | mg/l |
| 1,1-Dichloroethene | | | | **** | G | 0.0016 | G | <0.125 | | 0* | mg/l |
| 1,2-Dichlorobenzene | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| 1,2-Dichloroethane | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| 1,2-Dichloropropane | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| 1,3-Dichlorobenzene | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| 1,4-Dichlorobenzene | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| 2-Chloroethylvinylether | | | | **** | G | <0.020 | G | <0.5 | | 0* | mg/l |
| Acrolein | | | | **** | G | <0.1 | G | <2.5 | | 0* | mg/l |
| Acrylonitrile | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Benzene | | | | **** | G | <0.002 | G | <0.05 | | 0* | mg/l |
| Bromodichloromethane | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Bromoform | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Bromomethane | | | | **** | G | <0.010 | G | <0.25 | | 0* | mg/l |
| Carbon Tetrachloride | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Chlorobenzene | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Chloroethane | | | | **** | G | <0.010 | G | <0.25 | | 0* | mg/l |
| Chloroform | | | | **** | G | 0.0014 | G | <0.125 | | 0* | mg/l |
| Chloromethane | | | | **** | G | <0.010 | G | <0.25 | | 0* | mg/l |
| cis-1,3-Dicholropropene | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Dibromochloromethane | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Ethylbenzene | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Methylene Chloride | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Tetrachloroethene | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Toluene | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| 1,2-Dichloroethene | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| trans-1,3-Dichloropropene | | | | **** | G | <0.005 | G | <0.125 | | 0* | mg/l |
| Trichloroethene | | | | **** | G | 0.006 | G | <0.125 | | 0* | mg/l |
| Vinyl Chloride | | | | **** | G | 0.0035 | G | <0.05 | | 0* | mg/l |
| 1,2,4-Trichlorobenzene | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 2,4,6-Trichlorophenol | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 2,4-Dichlorophenol | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 2,4-Dimethylphenol | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 2,4-Dinitrophenol | | | | **** | G | <0.078 | G | <0.388 | | 0* | mg/l |
| 2,4-Dinitrotoluene | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 2,6-Dinitrotoluene | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 2-Chloronapthalene | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 2-Chlorophenol | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 2-Nitrophenol | | | | **** | G | <0.078 | G | <0.388 | | 0* | mg/l |
| 3,3-Dichlorobenzidine | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 2-Methyl-4,6-dinitrophenol | | | | **** | G | <0.078 | G | <0.388 | | 0* | mg/l |
| 4-Bromophenyl-phenylether | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 4-Chloro-3-methylphenol | | | | **** | G | <0.078 | G | <0.388 | | 0* | mg/l |
| 4-Chlorophenyl-phenylether | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| 4-Nitrophenol | | | | **** | G | <0.078 | G | <0.388 | | 0* | mg/l |
| Acenapthene | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| Acenaphthylene | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| Anthracene | | | | **** | G | <0.039 | G | <0.194 | | 0* | mg/l |
| Benzidine | | | | **** | G | <0.156 | G | <0.775 | | 0* | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _X____(JAN-MAR) _____(APR-JUNE) _____(JULY-SEPT) ___(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | | | 003 | | 009 | | 099 | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | | | 1/8/2013 | | 1/8/2013 | | calculated | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | | | 0740, 0840, 0940, 1040 | | 0810, 0910, 1010, 1110 | | | |
| PARAMETER | | | | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | UNITS |
| FLOW | | | | **** | M | ~~77,587~~ | M | ~~48,816~~ | ~~28,771~~ | gal/day |
| Benzo(a)anthracene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Benzo(a)pyrene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Benzo(b)fluoranthene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Benzo(g,h,i)perylene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Benzo(k)fluoranthene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Bis(2-chloroethoxy)methane | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Bis(2-chloroethyl)ether | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Bis(2-chloroisopropyl)ether | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Bis(2-ethylhexyl)phthalate | | | | **** | G | <0.023 | G | <0.116 | 0* | mg/l |
| Butyl benzyl phthalate | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Chrysene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Dibenzo(a,h)anthracene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Diethyl phthalate | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Dimethyl phthalate | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Di-n-butyl phthalate | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Di-n-octyl-phthalate | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Fluorene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Fluoranthene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Hexachlorobenzene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Hexachlorobutadiene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Hexachlorocyclopentadiene | | | | **** | G | <0.078 | G | <0.388 | 0* | mg/l |
| Hexachloroethane | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Ideno(1,2,3-cd)pyrene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Isophorone | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Naphthalene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Nitrobenzene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| N-nitrosodimethylamine | | | | **** | G | <0.078 | G | <0.388 | 0* | mg/l |
| N-nitrosodi-n-propylamine | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| N-nitrosodiphenylamine | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Pentachlorophenol | | | | **** | G | <0.078 | G | <0.388 | 0* | mg/l |
| Phenanthrene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| Phenol | | | | **** | G | <0.020 | G | <0.097 | 0* | mg/l |
| Pyrene | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| 1,2-Diphenylhydrazine | | | | **** | G | <0.039 | G | <0.194 | 0* | mg/l |
| * If calculated number was negative, it was reported as 0. | | | | | | | | | | |
| **Total Toxic Organics** | | | | **** | -- | 2.770 | -- | 19.409 | -- 0.000 | mg/l |
| **** No limits for SP003 or SP009; monitoring requirement only for calculation at SP099 | | | | | | | | | | |
| Lab Dilution Factor | | | | | | 1,5 | | 5, 25 | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: __X___(JAN-MAR) _____(APR-JUNE) _____(JULY-SEPT) _____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **005** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/8/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0750, 0850, 0950, 1050 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | gal/day |
| Oil & Grease | 200 | G | 4 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 40 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 60 | | | | | mg/l |
| Total Suspended Solids | **** | C | <6 | | | | | mg/l |
| Temperature | 60 | G | 11 | | | | | deg C |
| pH | 5.5 - 11.5 | G | 6.0 | | | | | S.U. |
| **** No limits for SP005 | | | | | | | | |
| Lab Dilution Factor | | | 1 | | | | | |

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Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | 005 | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/8/2013 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0750, 0850, 0950, 1050 | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | | gal/day |
| | | | | | | | | | |
| 1,1,1-Trichloroethane | | G | <0.005 | | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | | G | <0.005 | | | | | | mg/l |
| 1,1,2-Trichloroethane | | G | <0.005 | | | | | | mg/l |
| 1,1-Dichloroethane | | G | <0.005 | | | | | | mg/l |
| 1,1-Dichloroethene | | G | <0.005 | | | | | | mg/l |
| 1,2-Dichlorobenzene | | G | <0.005 | | | | | | mg/l |
| 1,2-Dichloroethane | | G | <0.005 | | | | | | mg/l |
| 1,2-Dichloropropane | | G | <0.005 | | | | | | mg/l |
| 1,3-Dichlorobenzene | | G | <0.005 | | | | | | mg/l |
| 1,4-Dichlorobenzene | | G | <0.005 | | | | | | mg/l |
| 2-Chloroethylvinylether | | G | <0.020 | | | | | | mg/l |
| Acrolein | | G | <0.100 | | | | | | mg/l |
| Acrylonitrile | | G | <0.005 | | | | | | mg/l |
| Benzene | | G | <0.002 | | | | | | mg/l |
| Bromodichloromethane | | G | <0.005 | | | | | | mg/l |
| Bromoform | | G | <0.005 | | | | | | mg/l |
| Bromomethane | | G | <0.010 | | | | | | mg/l |
| Carbon Tetrachloride | | G | <0.005 | | | | | | mg/l |
| Chlorobenzene | | G | <0.005 | | | | | | mg/l |
| Chloroethane | | G | <0.010 | | | | | | mg/l |
| Chloroform | | G | 0.0012 | | | | | | mg/l |
| Chloromethane | | G | <0.010 | | | | | | mg/l |
| cis-1,3-Dicholropropene | | G | <0.005 | | | | | | mg/l |
| Dibromochloromethane | | G | <0.005 | | | | | | mg/l |
| Ethylbenzene | | G | <0.005 | | | | | | mg/l |
| Methylene Chloride | | G | <0.005 | | | | | | mg/l |
| Tetrachloroethene | | G | <0.005 | | | | | | mg/l |
| Toluene | | G | <0.005 | | | | | | mg/l |
| trans-1,2-Dichloroethene | | G | <0.005 | | | | | | mg/l |
| trans-1,3-Dichloropropene | | G | <0.005 | | | | | | mg/l |
| Trichloroethene | | G | <0.005 | | | | | | mg/l |
| Vinyl Chloride | | G | <0.002 | | | | | | mg/l |
| 1,2,4-Trichlorobenzene | | G | <0.038 | | | | | | mg/l |
| 2,4,6-Trichlorophenol | | G | <0.038 | | | | | | mg/l |
| 2,4-Dichlorophenol | | G | <0.038 | | | | | | mg/l |
| 2,4-Dimethylphenol | | G | <0.038 | | | | | | mg/l |
| 2,4-Dinitrophenol | | G | <0.077 | | | | | | mg/l |
| 2,4-Dinitrotoluene | | G | <0.038 | | | | | | mg/l |
| 2,6-Dinitrotoluene | | G | <0.038 | | | | | | mg/l |
| 2-Chloronapthalene | | G | <0.038 | | | | | | mg/l |
| 2-Chlorophenol | | G | <0.038 | | | | | | mg/l |
| 2-Nitrophenol | | G | <0.077 | | | | | | mg/l |
| 3,3-Dichlorobenzidine | | G | <0.038 | | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | | G | <0.077 | | | | | | mg/l |
| 4-Bromophenyl-phenylether | | G | <0.038 | | | | | | mg/l |
| 4-Chloro-3-methylphenol | | G | <0.077 | | | | | | mg/l |
| 4-Chlorophenyl-phenylether | | G | <0.038 | | | | | | mg/l |
| 4-Nitrophenol | | G | <0.077 | | | | | | mg/l |
| Acenapthene | | G | <0.038 | | | | | | mg/l |
| Acenaphthylene | | G | <0.038 | | | | | | mg/l |
| Anthracene | | G | <0.038 | | | | | | mg/l |
| Benzidine | | G | <0.154 | | | | | | mg/l |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
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Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: __X__(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | 005 | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/8/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0750, 0850, 0950, 1050 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | gal/day |
| Benzo(a)anthracene | | G | <0.038 | | | | | mg/l |
| Benzo(a)pyrene | | G | <0.038 | | | | | mg/l |
| Benzo(b)fluoranthene | | G | <0.038 | | | | | mg/l |
| Benzo(g,h,i)perylene | | G | <0.038 | | | | | mg/l |
| Benzo(k)fluoranthene | | G | <0.038 | | | | | mg/l |
| Bis(2-chloroethoxy)methane | | G | <0.038 | | | | | mg/l |
| Bis(2-chloroethyl)ether | | G | <0.038 | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | | G | <0.038 | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | | G | <0.023 | | | | | mg/l |
| Butyl benzyl phthalate | | G | <0.038 | | | | | mg/l |
| Chrysene | | G | <0.038 | | | | | mg/l |
| Dibenzo(a,h)anthracene | | G | <0.038 | | | | | mg/l |
| Diethyl phthalate | | G | <0.038 | | | | | mg/l |
| Dimethyl phthalate | | G | <0.038 | | | | | mg/l |
| Di-n-butyl phthalate | | G | <0.038 | | | | | mg/l |
| Di-n-octyl-phthalate | | G | <0.038 | | | | | mg/l |
| Fluoranthene | | G | <0.038 | | | | | mg/l |
| Fluorene | | G | <0.038 | | | | | mg/l |
| Hexachlorobenzene | | G | <0.038 | | | | | mg/l |
| Hexachlorobutadiene | | G | <0.038 | | | | | mg/l |
| Hexachlorocyclopentadiene | | G | <0.077 | | | | | mg/l |
| Hexachloroethane | | G | <0.038 | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | | G | <0.038 | | | | | mg/l |
| Isophorone | | G | <0.038 | | | | | mg/l |
| Naphthalene | | G | <0.038 | | | | | mg/l |
| Nitrobenzene | | G | <0.038 | | | | | mg/l |
| N-nitrosodimethylamine | | G | <0.077 | | | | | mg/l |
| N-nitrosodi-n-propylamine | | G | <0.038 | | | | | mg/l |
| N-nitrosodiphenylamine | | G | <0.038 | | | | | mg/l |
| Pentachlorophenol | | G | <0.077 | | | | | mg/l |
| Phenanthrene | | G | <0.038 | | | | | mg/l |
| Phenol | | G | <0.019 | | | | | mg/l |
| Pyrene | | G | <0.038 | | | | | mg/l |
| 1,2-Diphenylhydrazine | | G | <0.038 | | | | | mg/l |
| | | | | | | | | |
| | | | | | | | | |
| **Total Toxic Organics** | 5.844 | -- | 2.721 | | | | | mg/l |
| | | | | | | | | |
| | | | | | | | | |
| Lab Dilution Factor | | | 1,5 | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _X___(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **008** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | | | | | | gal/day |
| Oil & Grease | 200 | G | * | | | | | mg/l |
| Biochemical Oxygen Demand | **** | G | * | | | | | mg/l |
| Chemical Oxygen Demand | **** | G | * | | | | | mg/l |
| Temperature | 60 | G | * | | | | | deg C |
| Total Suspended Solids | **** | G | * | | | | | mg/L |
| pH | 5.5 - 11.5 | G | * | | | | | S.U. |
| * No Flow this Quarter | | | | | | | | |
| Lab Dilution Factor | | | NA | | | | | |

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Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----> | | **010** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----> | | 1/8/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----> | | 0830, 0930, 1030, 1130 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 1,142,913 | | | | | gal/day |
| Oil & Grease | 200 | G | 5 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 230 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 605 | | | | | mg/l |
| Total Suspended Solids | **** | C | 39 | | | | | mg/l |
| Temperature | 60 | G | 23.8 | | | | | deg C |
| pH | 5.5 - 11.5 | G | see attached | | | | | S.U. |
| Chromium | 5.0 | C | 0.007 | | | | | mg/l |
| Copper | 2.7 | C | 0.027 | | | | | mg/l |
| Nickel | 2.3 | C | 0.010 | | | | | mg/l |
| Zinc | 3.0 | C | 0.080 | | | | | mg/l |
| Lab Dilution Factor | | | 1, 2,5 | | | | | |

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Mallinckrodt pH Monitoring for SP010: January 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 1/14/2013 0455 | 11.6 | 10 |
| 1/22/2013 2040 | 11.6 | 15 |
| 1/28/2013 1340 | 4.5 | 5 |
| | **January Total:** | **30** |

Mallinckrodt pH Monitoring for SP010: February 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 2/11/2013 0835 | 4.2 | 5 |
| 2/23/13 2225 | 11.6 | 10 |
| | **February Total:** | **15** |

Mallinckrodt pH Monitoring for SP010: March 2013

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 3/28/2013 1015 | 12.2 | 25 |
| | **March Total:** | **25** |

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Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | 010 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | 1/8/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | 0830, 0930, 1030, 1130 | | | | | | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 1,142,913 | E | | E | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | | G | <0.005 | G | | G | | mg/l |
| 1,1,2,2-Tetrachloroethane | | G | <0.005 | G | | G | | mg/l |
| 1,1,2-Trichloroethane | | G | <0.005 | G | | G | | mg/l |
| 1,1-Dichloroethane | | G | <0.005 | G | | G | | mg/l |
| 1,1-Dichloroethene | | G | <0.005 | G | | G | | mg/l |
| 1,2-Dichlorobenzene | | G | <0.005 | G | | G | | mg/l |
| 1,2-Dichloroethane | | G | <0.005 | G | | G | | mg/l |
| 1,2-Dichloropropane | | G | <0.005 | G | | G | | mg/l |
| 1,3-Dichlorobenzene | | G | <0.005 | G | | G | | mg/l |
| 1,4-Dichlorobenzene | | G | <0.005 | G | | G | | mg/l |
| 2-Chloroethylvinylether | | G | <0.020 | G | | G | | mg/l |
| Acrolein | | G | <0.100 | G | | G | | mg/l |
| Acrylonitrile | | G | <0.005 | G | | G | | mg/l |
| Benzene | | G | <0.002 | G | | G | | mg/l |
| Bromodichloromethane | | G | 0.0012 | G | | G | | mg/l |
| Bromoform | | G | <0.005 | G | | G | | mg/l |
| Bromomethane | | G | <0.010 | G | | G | | mg/l |
| Carbon Tetrachloride | | G | <0.005 | G | | G | | mg/l |
| Chlorobenzene | | G | <0.005 | G | | G | | mg/l |
| Chloroethane | | G | <0.010 | G | | G | | mg/l |
| Chloroform | | G | 0.004 | G | | G | | mg/l |
| Chloromethane | | G | <0.010 | G | | G | | mg/l |
| cis-1,3-Dicholropropene | | G | <0.005 | G | | G | | mg/l |
| Dibromochloromethane | | G | <0.005 | G | | G | | mg/l |
| Ethylbenzene | | G | <0.005 | G | | G | | mg/l |
| Methylene Chloride | | G | <0.005 | G | | G | | mg/l |
| Tetrachloroethene | | G | <0.005 | G | | G | | mg/l |
| Toluene | | G | <0.005 | G | | G | | mg/l |
| trans-1,2-Dichloroethene | | G | <0.005 | G | | G | | mg/l |
| trans-1,3-Dichloropropene | | G | <0.005 | G | | G | | mg/l |
| Trichloroethene | | G | <0.005 | G | | G | | mg/l |
| Vinyl Chloride | | G | <0.002 | G | | G | | mg/l |
| 1,2,4-Trichlorobenzene | | G | <0.038 | G | | G | | mg/l |
| 2,4,6-Trichlorophenol | | G | <0.038 | G | | G | | mg/l |
| 2,4-Dichlorophenol | | G | <0.038 | G | | G | | mg/l |
| 2,4-Dimethylphenol | | G | <0.038 | G | | G | | mg/l |
| 2,4-Dinitrophenol | | G | <0.077 | G | | G | | mg/l |
| 2,4-Dinitrotoluene | | G | <0.038 | G | | G | | mg/l |
| 2,6-Dinitrotoluene | | G | <0.038 | G | | G | | mg/l |
| 2-Chloronapthalene | | G | <0.038 | G | | G | | mg/l |
| 2-Chlorophenol | | G | <0.038 | G | | G | | mg/l |
| 2-Nitrophenol | | G | <0.077 | G | | G | | mg/l |
| 3,3-Dichlorobenzidine | | G | <0.038 | G | | G | | mg/l |
| 2-Methyl-4,6-dinitrophenol | | G | <0.077 | G | | G | | mg/l |
| 4-Bromophenyl-phenylether | | G | <0.038 | G | | G | | mg/l |
| 4-Chloro-3-methylphenol | | G | <0.077 | G | | G | | mg/l |
| 4-Chlorophenyl-phenylether | | G | <0.038 | G | | G | | mg/l |
| 4-Nitrophenol | | G | <0.077 | G | | G | | mg/l |
| Acenapthene | | G | <0.038 | G | | G | | mg/l |
| Acenaphthylene | | G | <0.038 | G | | G | | mg/l |
| Anthracene | | G | <0.038 | G | | G | | mg/l |
| Benzidine | | G | <0.154 | G | | G | | mg/l |

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**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: __X__(JAN-MAR) ____(APR-JUNE) ___(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | 010 | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 1/8/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0830, 0930, 1030, 1130 | | | | | |
| | | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** | | | | | | |
| PARAMETER | LIMIT | G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 1,142,913 | E | | E | | gal/day |
| Benzo(a)anthracene | | G | <0.038 | G | | G | | mg/l |
| Benzo(a)pyrene | | G | <0.038 | G | | G | | mg/l |
| Benzo(b)fluoranthene | | G | <0.038 | G | | G | | mg/l |
| Benzo(g,h,i)perylene | | G | <0.038 | G | | G | | mg/l |
| Benzo(k)fluoranthene | | G | <0.038 | G | | G | | mg/l |
| Bis(2-chloroethoxy)methane | | G | <0.038 | G | | G | | mg/l |
| Bis(2-chloroethyl)ether | | G | <0.038 | G | | G | | mg/l |
| Bis(2-chloroisopropyl)ether | | G | <0.038 | G | | G | | mg/l |
| Bis(2-ethylhexyl)phthalate | | G | <0.023 | G | | G | | mg/l |
| Butyl benzyl phthalate | | G | <0.038 | G | | G | | mg/l |
| Chrysene | | G | <0.038 | G | | G | | mg/l |
| Dibenzo(a,h)anthracene | | G | <0.038 | G | | G | | mg/l |
| Diethyl phthalate | | G | <0.038 | G | | G | | mg/l |
| Dimethyl phthalate | | G | <0.038 | G | | G | | mg/l |
| Di-n-butyl phthalate | | G | <0.038 | G | | G | | mg/l |
| Di-n-octyl-phthalate | | G | <0.038 | G | | G | | mg/l |
| Fluoranthene | | G | <0.038 | G | | G | | mg/l |
| Fluorene | | G | <0.038 | G | | G | | mg/l |
| Hexachlorobenzene | | G | <0.038 | G | | G | | mg/l |
| Hexachlorobutadiene | | G | <0.038 | G | | G | | mg/l |
| Hexachlorocyclopentadiene | | G | <0.077 | G | | G | | mg/l |
| Hexachloroethane | | G | <0.038 | G | | G | | mg/l |
| Ideno(1,2,3-cd)pyrene | | G | <0.038 | G | | G | | mg/l |
| Isophorone | | G | <0.038 | G | | G | | mg/l |
| Naphthalene | | G | <0.038 | G | | G | | mg/l |
| Nitrobenzene | | G | <0.038 | G | | G | | mg/l |
| N-nitrosodimethylamine | | G | <0.077 | G | | G | | mg/l |
| N-nitrosodi-n-propylamine | | G | <0.038 | G | | G | | mg/l |
| N-nitrosodiphenylamine | | G | <0.038 | G | | G | | mg/l |
| Pentachlorophenol | | G | <0.077 | G | | G | | mg/l |
| Phenanthrene | | G | <0.038 | G | | G | | mg/l |
| Phenol | | G | <0.019 | G | | G | | mg/l |
| Pyrene | | G | <0.038 | G | | G | | mg/l |
| 1,2-Diphenylhydrazine | | G | <0.038 | G | | G | | mg/l |
| | | | | | | | | |
| | | | | | | | | |
| **Total Toxic Organics** | 5.844 | -- | 2.715 | | | | | mg/l |
| | | | | | | | | |
| | | | | | | | | |
| Lab Dilution Factor | | | 1,5 | | | | | |

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DIVISION OF
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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _X__(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 3/25/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 11:00 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | 14,000 | | | | | gal/day |
| Oil & Grease | 200 | G | <6 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | G | 21 | | | | | mg/l |
| Chemical Oxygen Demand | **** | G | 41 | | | | | mg/l |
| Total Suspended Solids | **** | G | 6 | | | | | mg/l |
| Temperature | 60 | G | 16.5 | | | | | deg C |
| pH | 5.5 - 11.5 | G | 8.7 | | | | | S.U. |
| Lab Dilution Factor | | | 1 | | | | | |

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Samples Collected By: Mallinckrodt

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 3/25/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 11:00 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 14,000 | | | | | gal/day |
| | | | | | | | | |
| 1,1,1-Trichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1,2,2-Tetrachloroethane | | G | <0.005 | | | | | mg/l |
| 1,1,2-Trichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethane | | G | <0.005 | | | | | mg/l |
| 1,1-Dichloroethene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloroethane | | G | <0.005 | | | | | mg/l |
| 1,2-Dichloropropane | | G | <0.005 | | | | | mg/l |
| 1,3-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 1,4-Dichlorobenzene | | G | <0.005 | | | | | mg/l |
| 2-Chloroethylvinylether | | G | <0.020 | | | | | mg/l |
| Acrolein | | G | <0.100 | | | | | mg/l |
| Acrylonitrile | | G | <0.005 | | | | | mg/l |
| Benzene | | G | <0.002 | | | | | mg/l |
| Bromodichloromethane | | G | 0.0013 | | | | | mg/l |
| Bromoform | | G | <0.005 | | | | | mg/l |
| Bromomethane | | G | <0.010 | | | | | mg/l |
| Carbon Tetrachloride | | G | <0.005 | | | | | mg/l |
| Chlorobenzene | | G | <0.005 | | | | | mg/l |
| Chloroethane | | G | <0.010 | | | | | mg/l |
| Chloroform | | G | 0.015 | | | | | mg/l |
| Chloromethane | | G | <0.010 | | | | | mg/l |
| cis-1,3-Dicholropropene | | G | <0.005 | | | | | mg/l |
| Dibromochloromethane | | G | <0.005 | | | | | mg/l |
| Ethylbenzene | | G | <0.005 | | | | | mg/l |
| Methylene Chloride | | G | 0.0031 | | | | | mg/l |
| Tetrachloroethene | | G | <0.005 | | | | | mg/l |
| Toluene | | G | <0.005 | | | | | mg/l |
| trans-1,2-Dichloroethene | | G | <0.005 | | | | | mg/l |
| trans-1,3-Dichloropropene | | G | <0.005 | | | | | mg/l |
| Trichloroethene | | G | <0.005 | | | | | mg/l |
| Vinyl Chloride | | G | <0.002 | | | | | mg/l |
| 1,2,4-Trichlorobenzene | | G | <0.008 | | | | | mg/l |
| 2,4,6-Trichlorophenol | | G | <0.008 | | | | | mg/l |
| 2,4-Dichlorophenol | | G | <0.008 | | | | | mg/l |
| 2,4-Dimethylphenol | | G | <0.008 | | | | | mg/l |
| 2,4-Dinitrophenol | | G | <0.016 | | | | | mg/l |
| 2,4-Dinitrotoluene | | G | <0.008 | | | | | mg/l |
| 2,6-Dinitrotoluene | | G | <0.008 | | | | | mg/l |
| 2-Chloronapthalene | | G | <0.008 | | | | | mg/l |
| 2-Chlorophenol | | G | <0.008 | | | | | mg/l |
| 2-Nitrophenol | | G | <0.016 | | | | | mg/l |
| 3,3-Dichlorobenzidine | | G | <0.008 | | | | | mg/l |
| 2-Methyl-4,6-dinitrophenol | | G | <0.016 | | | | | mg/l |
| 4-Bromophenyl-phenylether | | G | <0.008 | | | | | mg/l |
| 4-Chloro-3-methylphenol | | G | <0.016 | | | | | mg/l |
| 4-Chlorophenyl-phenylether | | G | <0.008 | | | | | mg/l |
| 4-Nitrophenol | | G | <0.016 | | | | | mg/l |
| Acenapthene | | G | <0.008 | | | | | mg/l |
| Acenaphthylene | | G | <0.008 | | | | | mg/l |
| Anthracene | | G | <0.008 | | | | | mg/l |
| Benzidine | | G | <0.031 | | | | | mg/l |
| Benzo(a)anthracene | | G | <0.008 | | | | | mg/l |

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Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _X___(JAN-MAR) _____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 3/25/2013 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 11:00 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 14,000 | | | | | gal/day |
| Benzo(a)pyrene | | G | <0.008 | | | | | mg/l |
| Benzo(b)fluoranthene | | G | <0.008 | | | | | mg/l |
| Benzo(g,h,i)perylene | | G | <0.008 | | | | | mg/l |
| Benzo(k)fluoranthene | | G | <0.008 | | | | | mg/l |
| Bis(2-chloroethoxy)methane | | G | <0.008 | | | | | mg/l |
| Bis(2-chloroethyl)ether | | G | <0.008 | | | | | mg/l |
| Bis(2-chloroisopropyl)ether | | G | <0.008 | | | | | mg/l |
| Bis(2-ethylhexyl)phthalate | | G | <0.005 | | | | | mg/l |
| Butyl benzyl phthalate | | G | <0.008 | | | | | mg/l |
| Chrysene | | G | <0.008 | | | | | mg/l |
| Dibenzo(a,h)anthracene | | G | <0.008 | | | | | mg/l |
| Diethyl phthalate | | G | <0.008 | | | | | mg/l |
| Dimethyl phthalate | | G | <0.008 | | | | | mg/l |
| Di-n-butyl phthalate | | G | <0.008 | | | | | mg/l |
| Di-n-octyl-phthalate | | G | <0.008 | | | | | mg/l |
| Fluoranthene | | G | <0.008 | | | | | mg/l |
| Fluorene | | G | <0.008 | | | | | mg/l |
| Hexachlorobenzene | | G | <0.008 | | | | | mg/l |
| Hexachlorobutadiene | | G | <0.008 | | | | | mg/l |
| Hexachlorocyclopentadiene | | G | <0.016 | | | | | mg/l |
| Hexachloroethane | | G | <0.008 | | | | | mg/l |
| Ideno(1,2,3-cd)pyrene | | G | <0.008 | | | | | mg/l |
| Isophorone | | G | <0.008 | | | | | mg/l |
| Naphthalene | | G | <0.008 | | | | | mg/l |
| Nitrobenzene | | G | <0.008 | | | | | mg/l |
| N-nitrosodimethylamine | | G | <0.016 | | | | | mg/l |
| N-nitrosodi-n-propylamine | | G | <0.008 | | | | | mg/l |
| N-nitrosodiphenylamine | | G | <0.008 | | | | | mg/l |
| Pentachlorophenol | | G | <0.016 | | | | | mg/l |
| Phenanthrene | | G | <0.008 | | | | | mg/l |
| Phenol | | G | <0.004 | | | | | mg/l |
| Pyrene | | G | <0.008 | | | | | mg/l |
| 1,2-Diphenylhydrazine | | G | <0.008 | | | | | mg/l |
| **Total Toxic Organics** | 5.844 | -- | 0.795 | | | | | mg/l |
| | | | | | | | | |
| Lab Dilution Factor | | | 1 | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3.1 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: __X___(JAN-MAR) ___(APR-JUN) ____(JULY-SEP) _____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **080** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Amyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | * | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Diethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | * | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | * | | | | | | mg/L |
| Triethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| | | | | | | | | | | | |
| Oil & Grease | 1664 | 200 | | G | * | | | | | | mg/L |
| Biochemical Oxygen Demand | | **** | | C | * | | | | | | mg/L |
| Chemical Oxygen Demand | | **** | | C | * | | | | | | mg/L |
| Total Suspended Solids | | **** | | C | * | | | | | | mg/L |
| Temperature | | 60 | | G | * | | | | | | deg C |
| pH | | 5.5 - 11.5 | | G | * | | | | | | S.U. |

*** No flow from SP080 in 1st QTR 2013**

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147 _____

Monitoring Period: __X__(JAN-MAI _____ (APR-JUNE) _____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | -----> | | **905** | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | -----> | | 3/6/2013 | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | -----> | | 11:00 | | | |
| | MONTHLY LIMIT (ave) | DAILY MAX LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | |
| PARAMETER | (gm/day) | (gm/day) | | | Lab results mg/L | | UNITS |
| FLOW | | | M | 90164 | | | gal/day |
| 1,2,4-Trichlorobenzene | 74 | 301 | G | 6.83 | 0.020 | | gm/day |
| 1,2-Dichlorobenzene | 74 | 301 | G | 1.71 | 0.005 | | gm/day |
| 1,3-Dichlorobenzene | 54 | 144 | G | 1.71 | 0.005 | | gm/day |
| 1,4-Dichlorobenzene | 54 | 144 | G | 1.71 | 0.005 | | gm/day |
| 2-Nitrophenol | 25 | 87 | G | 13.65 | 0.040 | | gm/day |
| 2-Methyl-4,6-dinitrophenol | 30 | 105 | G | 13.65 | 0.040 | | gm/day |
| 4-Nitrophenol | 61 | 218 | G | 13.65 | 0.040 | | gm/day |
| Acenapthene | 7 | 18 | G | 6.83 | 0.020 | | gm/day |
| Anthracene | 7 | 18 | G | 6.83 | 0.020 | | gm/day |
| Bis(2-ethylhexyl)phthalate | 36 | 98 | G | 4.10 | 0.012 | | gm/day |
| Diethyl phthalate | 17 | 43 | G | 6.83 | 0.020 | | gm/day |
| Dimethyl phthalate | 7 | 18 | G | 6.83 | 0.020 | | gm/day |
| Di-n-butyl phthalate | 8 | 16 | G | 6.83 | 0.020 | | gm/day |
| Fluoranthene | 8 | 20 | G | 6.83 | 0.020 | | gm/day |
| Fluorene | 7 | 18 | G | 6.83 | 0.020 | | gm/day |
| Hexachlorobenzene | 74 | 301 | G | 6.83 | 0.020 | | gm/day |
| Hexachlorobutadiene | 54 | 144 | G | 6.83 | 0.020 | | gm/day |
| Hexachloroethane | 74 | 301 | G | 6.83 | 0.020 | | gm/day |
| Naphthalene | 7 | 18 | G | 6.83 | 0.020 | | gm/day |
| Phenanthrene | 7 | 18 | G | 6.83 | 0.020 | | gm/day |
| Pyrene | 8 | 18 | G | 6.83 | 0.020 | | gm/day |
| 1,1,1-Trichloroethane | 8 | 22 | G | 1.71 | 0.005 | | gm/day |
| 1,1,2-Trichloroethane | 12 | 48 | G | 1.71 | 0.005 | | gm/day |
| 1,1-Dichloroethane | 8 | 22 | G | 1.71 | 0.005 | | gm/day |
| 1,1-Dichloroethene | 8 | 23 | G | 1.71 | 0.005 | | gm/day |
| 1,2-Dichloroethane | 74 | 301 | G | 1.71 | 0.005 | | gm/day |
| 1,2-Dichloropropane | 74 | 301 | G | 1.71 | 0.005 | | gm/day |
| Benzene | 22 | 51 | G | 0.68 | 0.002 | | gm/day |
| Carbon Tetrachloride | 54 | 144 | G | 1.71 | 0.005 | | gm/day |
| Chlorobenzene | 54 | 144 | G | 1.71 | 0.005 | | gm/day |
| Chloroethane | 42 | 112 | G | 3.41 | 0.010 | | gm/day |
| Chloroform | 42 | 123 | G | 5.02 | 0.015 | | gm/day |
| Chloromethane | 42 | 112 | G | 3.41 | 0.010 | | gm/day |
| cis-1,3-Dichloropropene | 74 | 301 | G | 1.71 | 0.005 | | gm/day |
| Ethylbenzene | 54 | 144 | G | 1.71 | 0.005 | | gm/day |
| Methylene Chloride | 14 | 64 | G | 1.71 | 0.005 | | gm/day |
| Nitrobenzene | 847 | 2423 | G | 6.83 | 0.020 | | gm/day |
| Tetrachloroethene | 20 | 62 | G | 1.71 | 0.005 | | gm/day |
| Toluene | 11 | 28 | G | 1.71 | 0.005 | | gm/day |
| trans-1,2-Dichloroethene | 9 | 25 | G | 1.71 | 0.005 | | gm/day |
| trans-1,3-Dichloropropene | 74 | 301 | G | 1.71 | 0.005 | | gm/day |
| Trichloroethene | 10 | 26 | G | 1.71 | 0.005 | | gm/day |
| Vinyl Chloride | 37 | 65 | G | 0.68 | 0.002 | | gm/day |
| | | | | | | | |
| | | | | | | | |
| Shaded values represent detection limits | | | | | | | |
| | | | | | | | |
| Lab Dilution Factor | | | | 1 | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: __x___(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) ____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | | 912 | | 912 | | 912 | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | | 1/7/2013 | | 2/8/2013 | | 3/4/2013 | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | | 0930 | | 1100 | | 1430 | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | M | 52338 | M | 56475 | M | 55776 | gal/day |
| | | | | | | | | |
| DMAC (daily max) | 7091 | C | 1111 | C | 1439 | C | 995 | lb/day |
| DMAC (monthly average) | 5459 | C | 1111 | C | 1439 | C | 995 | lb/day |
| | | | | | | | | |
| | | | 2549 | | 3060 | | 2142 | ppm |
| Lab Dilution Factor | | | 2 | | 2 | | 2 | |

$X \frac{day}{gal} \; Y \frac{lb}{day} \quad \frac{1\ kg}{2.2\ lb} \quad \frac{10^6\ mg}{1\ kg} \quad \frac{1\ gal}{3.785\ L}$

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: X___(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **915** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 3/4/2013 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1315 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <2.5 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.25 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.25 | | | | | | mg/L |
| Chloroform | 524.2 | 0.10 | 0.03 | G | <0.03 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Diethyl amine* | 1671 | 255.00 | 100.00 | G | <100 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.5 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.25 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.25 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <2.5 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.5 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <1.0 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.2 | | | | | | mg/L |
| Triethyl amine* | 1671 | 255.00 | 100.00 | G | <100 | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.65 | | | | | | mg/L |
| ** Annual monitoring requirement* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 10, 50 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: __X___(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **920** | | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1/8/2013 | | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1315 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 13,000 | E | | | | | | gal/day |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.400 | G | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.100 | G | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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2013 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _X___(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 927 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 2/12/2013 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 1345 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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2013 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _X___(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **930** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1/7/2013 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 2359 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 650 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _X____(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **933** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1/5/2013 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1200 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 100 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _X___(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By:

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **935** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Chloroform | 524.2 | 0.10 | 0.03 | G | * | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | * | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | * | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Diethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| Triethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| | | | | | | | | | | | |
| **** No PEG flow this quarter*** | | | | | | | | | | | |
| Dilution by lab | | | | | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: X___(JAN-MAR) _____(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** -----> | | | | | **936** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** -----> | | | | | 3/6/2013 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** -----> | | | | | 1100 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 16,500 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | <0.02 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Diethyl amine** | 1671 | 255.00 | 100.00 | G | <50 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Triethyl amine** | 1671 | 255.00 | 100.00 | G | <20 | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.26 | | | | | | mg/L |
| *** Chloroform Results** | **Raw Water** | **SP936** | **SP936- Raw Water** | | | | | | | | |
| **3/6/2013** | **<0.02 mg/l** | **0.020 mg/l** | **0.02** | | | | | | | | |
| ***Results above reported as the difference between SP936 and Raw Water.*** | | | | | | | | | | | |
| *** Annual monitoring requirement* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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2013 1Q SP9XX PEG.xlsx

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: __X__(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | 937 | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1/8/2013 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1315 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 23,000 | | | | | | gal/day |
| Tetrahydrofuran | 524.2 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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APR 26 2013

DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2013 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: __X__(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) ____(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **938** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 2/13/2013 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1100 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 71 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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APR 26 2013
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ENVIRONMENTAL COMPLIANCE

MSD

COVIDIEN

April 19, 2013

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

Re: Notice of Violation Dated March 19th, 2013
Mallinckrodt, St. Louis Plant

Dear Mr. Gill,

Following is a summary of Mallinckrodt's responses to the action items outlined in the NOV issued on March 19th, 2013.

**Investigation**
An internal investigation was conducted to determine potential sources of the high pH (11.61) discharge at Sample Point 005 (SP005). SP005 handles non-contact cooling water and laboratory wastewater from Building 96.

The investigation has identified a likely cause of the high pH as being the detergent used in a dishwasher for cleaning glassware in the Peptides Development Center. A review of the MSDS for the detergent, indicates a high pH and it was determined that the dishwasher was in use the morning of March 19th and was discharging to SP005 at 0935 when the sample was taken.

**Corrective Actions**
Upon identification of the dishwasher as being the likely source of the high pH, the discharges from the dishwasher are now collected in a catch pot and pH is checked. If the pH is within MSD permit limits, the catch pot is discharged through SP005. If the discharge is not within pH limits, it will be pH adjusted to meet the MSD limits prior to discharge to SP005. This process of capturing and testing the pH of the discharges will continue until an alternate detergent is identified or modifications are made to the dishwasher to ensure pH control of the discharge.

**Additional Sampling** –An additional pH sample from SP005 was taken on 3/18/2013 at approximately 10:00 am and the result was a pH of 8.5. A previous sample was taken on 1/8/2013 and reported in the quarterly self-monitoring report and the result was a pH

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ENVIRONMENTAL COMPLIANCE

COVIDIEN/MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147
TELEPHONE: 314-654-2000
FAX: 314-654-1251

Mallinckrodt LLC 0117281-00

COVIDIEN

of 6.0. Both of these pH results were obtained through the use of an in-house YSI Professional Series Plus (ProComm 60560409G, Serial # JC02180) pH meter. Per the manufacturer's recommendations the meter was calibrated with buffer solution (pH 4, 8 and 10) prior to collection of the samples.

Based on the results of these two samples, the Mallinckrodt St. Louis plant is in compliance with pH limits at SP005.

If you have any questions or require more information, please contact me at 314-654-0127.

Sincerely,

Amber Crouch

Amber Crouch
Sr. Environmental Specialist

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APR 2 2 2013

DIVISION OF
ENVIRONMENTAL COMPLIANCE

COVIDIEN/MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

**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

MSD

April 18, 2013

Amber Crouch
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Ms. Crouch:

We have reviewed your application dated April 17, 2013 requesting approval to discharge 1,400 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is 40% ethylene glycol solution from Building 250 at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. We understand that the wastewater will be discharged through sampling point 010.

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. Due to the high ethylene glycol concentration, the discharge is limited to 420 gallons per hour. **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 13042, you will be billed by invoice at the billing rate in effect at the time of discharge. The current rate contained in MSD Ordinance 13042 is $310.07 per ton for COD over 600 mg/L. Using the assumed COD concentration based on the percent of ethylene glycol contained in the wastewater in question, and the proposed discharge volume provided in your application, it is estimated that you will be discharging just under two and a half tons of COD over 600 mg/L. (Our quantitative estimate is 2.33 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, Mallinckrodt 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, MALLINCKRODT INC [1011728100]

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt LLC  Evaluated by: SMG

Premise Address: 3600 N. 2nd St.  Date: 4/18/13

Send approval letter to applicant

Application Dated: 4/17/13 Received: 4/17/13 All Requested Info. Received: 4/17/13

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: 10117281-00

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 815 Description: 40% ethylene glycol soln. from Bldg. 250

Normal WW flow from premise? N/A _____ ccf/month, 2,992,101 GPD, _____ GPH. @ SP010

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 = 420 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: 04/18/13
Calculated by: Steve Grace
Source name: MALLINCKRODT LLC [1011728100]
Waste material: Used ethylene glycol solution from building 250 chiller system
Discharge volume: 1,400 gallons

**2 STRENGTH INFORMATION:**

| | | | | |
|---|---|---|---|---|
| Sample BOD = | 0 | mg/l = | 0 | lbs BOD to be discharged |
| Sample COD = | 400,000 | mg/l = | 4670 | lbs COD to be discharged |
| Sample TSS = | 0 | mg/l = | for surcharge calculation only | |

**3 PLANT DATA:** 2010

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** | **140** | **146** | **292** | **7,113** | **14,227** | **711** | **1,423** |
| Coldwater | 26 | 188 | 377 | 1,704 | 3,408 | 170 | 341 |
| Fenton | 5 | 388 | 776 | 679 | 1,357 | 68 | 136 |
| Grand Glaize | 16 | 129 | 405 | 708 | 2,218 | 71 | 222 |
| Lemay | 131 | 78 | 210 | 3,531 | 9,584 | 353 | 958 |
| Lower Meramec | 13 | 124 | 409 | 543 | 1,785 | 54 | 179 |
| Missouri River | 27 | 280 | 559 | 2,671 | 5,341 | 267 | 534 |

**4 MINIMUM REQUIRED FLOW RATE:**

| | BOD (hours) | BOD (gpm) | COD (hours) | COD (gpm) |
|---|---|---|---|---|
| **Bissell** | **0.00** | **0** | **3.28** | **7** |
| Coldwater | 0.00 | 0 | 13.70 | 2 |
| Fenton | 0.00 | 0 | 34.41 | 1 |
| Grand Glaize | 0.00 | 0 | 21.06 | 1 |
| Lemay | 0.00 | 0 | 4.87 | 5 |
| Lower Meramec | 0.00 | 0 | 26.16 | 1 |
| Missouri River | 0.00 | 0 | 8.74 | 3 |

**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 = 399400 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: 13402

| | | |
|---|---|---|
| Volume = | $ 2.28 | /CcF |
| BOD = | $ 620.14 | /ton |
| COD = | $ 310.07 | /ton |
| TSS = | $ 231.35 | /ton |

Flow charge = $ - based on volume = 1.9 CcF
BOD surcharge = $ -
COD surcharge = $ 723.18
TSS surcharge = $ -
Total discharge charge = $ 723.18
**Customer charge = $ 723.18** DEC charges special discharge customers for total charges > $20.00
Approximate charge/gallon = $ 0.52

**Comments**

require volume report for billing purposes. Smg

Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

# APPLICATION FOR SPECIAL DISCHARGE APPROVAL

**I. WASTEWATER SOURCE IDENTIFICATION:**

Site Name: Mallinckrodt
Premise Address: 3600 N. 2nd street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt
Contact Person: Amber Crouch
Title: Sr. Env. Specialist
Phone: 314-654-0127 Fax: 314-654-1251

**II. APPLICANT (mailing information):**

Applicant Name: Amber Crouch
Title: EHS department
Company Name: Mallinckrodt
Mailing Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314-654-0127 Fax: 314-654-1251

**III. A. MATERIAL TO BE DISCHARGED** (check all applicable boxes):

1. Wastewater description/location: 40% Glycol Bldg. 250
2. Process/activity generating wastewater: ~~extra raw~~ unused glycol solution.
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 |
|---|---|---|
| glycol | 40 | % |
| Water | 60 | % |
| | | |
| | | |

| 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: 1400 Gallons
   b. Proposed discharge volume: 1400 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: pH adjust at main outfall S0102
   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): Bldg 250 plant sewer to SP010 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):** Amber Crouch

**Signature:** Amber Crouch **Date:** 4/17/13

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 10117281-00 Sample Point No. 815

**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

**MSD**

April 18, 2013

Amber Crouch
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Ms. Crouch:

We have reviewed your application dated April 17, 2013 requesting approval to discharge 100 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater consists of damaged containers of Ioversol from Building 504 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. Information provided previously indicates Ioversol is a contrast imaging media, and that the wastewater in question will be discharged through sampling point 010.

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, Mallinckrodt 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, MALLINCKRODT INC [1011728100]

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt, LLC  Evaluated by: SMG

Premise Address: 3600 N. 2nd St.  Date: 4/18/13

Send approval letter to applicant

Application Dated: 4/17/13 Received: 4/17/13 All Requested Info. Received: 4/17/13

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.

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

SOURCE TYPE (circle): (IU) / Dead IU / SD

INDUSTRY ID: 10117281-00

Sample Point: No. Assigned: 845 Description: damaged containers of Iversol from Bldg. 504

Normal WW flow from premise? N/A _____ ccf/month, 2,992,101 GPD, _____ GPH. @ SP010

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: Mallinckrodt
Premise Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt
Contact Person: Amber Crouch
Title: Sr. Env. Specialist
Phone: 314-654-0127 Fax: 314-654-1251

**II. APPLICANT (mailing information):**

Applicant Name: Amber Crouch
Title: EHS department
Company Name: Mallinckrodt
Mailing Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314-654-0127 Fax: 314-654-1251

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Iorversol solution
2. Process/activity generating wastewater: Damaged containers of raw material Bldg. 504
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 |
|---|---|---|
| Iover Sol | 100 | % |
| | | |
| | | |
| | | |

| 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: 100 Gallons
   b. Proposed discharge volume: 100 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: pH adjust at SP010 main outfall
   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): Bldg. 504 Plant Sewer to SP010 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):** Amber Crouch

**Signature:** Amber Crouch **Date:** 4/17/13

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 10117281-00 Sample Point No. 845

**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

MSD

April 18, 2013

Julie Summers
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

**Re: Wastewater User Charge Billing for Special Discharge**

Dear Ms. Summers:

This is to advise you of the wastewater user charges applicable to an on-site special discharge approved in our original letter to you dated January 21, 2011, and extensions dated January 13, 2012, July 16, 2012, and December 3, 2012. The discharge dates and quantities are from information submitted by you in an email dated April 18, 2013.

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 13402.

**PARTY TO BILL:** Addressee

**BILLING IS FOR:** On-Site Special Discharge

**DISCHARGE PERIOD:** January 2013

**SOURCE OF WASTE:** Three batches of treated rainwater and groundwater from the remediation of the Columbium-Tantalum (CT) decommissioning project at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri.

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| January 2013 | Volume | 321 | CcF | $2.28 | $731.88 |
| **Totals:** | ------ | 321 | CcF | ----- | $731.88 |

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 - Finance Dept.
Becky Bartholomew – Finance Dept.
Laura Joiner – Finance Dept.
Doug Mendoza
Brian Gibson

File: IU, MALLINCKRODT INC [1011728100], 3600 North Second Street, St. Louis, Missouri

**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

**MSD**

April 9, 2013

Amber Crouch
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

**Re: Wastewater User Charge Billing for Special Discharge**

Dear Ms. Crouch:

This is to advise you of the wastewater user charges applicable to an on-site special discharge approved in our letter to you dated March 25, 2013. That charge was determined using the ethylene glycol concentration in your application for special discharge. The discharge dates and quantities are from information submitted by you in an email dated April 8, 2013.

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 13402. 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 5, 2013

**SOURCE OF WASTE:** 50% ethylene glycol solution from Building 97 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri.

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| April 5, 2013 | Extra-Strength Surcharge | 685 | Gal | $0.65 | $445.25 |
| **Total:** | ------ | **685** | Gal | ----- | **$445.25** |

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 - Finance Dept.
Becky Bartholomew – Finance Dept.
Mary Wimsatt – Finance Dept.
Laura Joiner – Finance Dept.
Doug Mendoza
Brian Gibson

File: IU, MALLINCKRODT LLC [1011728100], 3600 N. 2nd Street, St. Louis

## Steve Grace

**From:** Crouch, Amber <Amber.Crouch@Covidien.com>
**Sent:** Monday, April 08, 2013 9:32 AM
**To:** Steve Grace
**Subject:** Mallinckrodt Permit dated March 25th, 2013

Steve,

The following discharge for glycol in Building 97 took place on 4/5/2013.
Start time: 0735
End time: 1105
Volume: 685 gallons

Please let me know if you need any additional information.

Thanks,

Amber Crouch
Senior HSE Engineer
Covidien
3600 North Second Street
St. Louis, MO 63147
USA

(314) 654-0127 office
(314) 253-2213 pager
(314) 654-1251 fax

www.covidien.com

This information may be confidential and/or privileged. Use of this information by anyone other than the intended recipient is prohibited. If you receive this in error, please inform the sender and remove any record of this message.

MSD

**Mallinckrodt** COVIDIEN

IU FILE
1007-7845-00
1048-5688-00
1007-6416-00
~~1011-7281-00~~

March 28, 2013

Mr. Douglas Mendoza
Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, Missouri 63147

**Re:** Corporate Reorganization Notification—Mallinckrodt plc Spin Off from Covidien plc
**Mallinckrodt LLC, MSD Industrial Wastewater Discharge Permits**

Dear Mr. Mendoza:

I am sending this letter to formally notify you that Mallinckrodt plc will be a new public company effective after receipt of government approvals anticipated in June 2013. Mallinckrodt LLC will continue to conduct its US operations and is the current legal entity holding all existing environmental permits, general permits, licenses and registrations applicable to our facilities located at:

675 McDonnell Blvd.
Hazelwood, MO 63042

2703 Wagner Place
Maryland Heights, MO 63043

3600 North Second Street
Webster Grove, MO 63119

385 Marshall Road
St. Louis, MO 63147

The direct parent company of Mallinckrodt LLC is Mallinckrodt Enterprises LLC, a Delaware limited liability corporation. Both companies are ultimately owned by Mallinckrodt plc. For your reference, I have included a list of these permits, general permits, licenses and registrations in Attachment A.

Mallinckrodt plc will formally become a publicly traded entity upon approval of the Form 10 Registration statement filed with the US Securities and Exchange Commission (SEC) on February 1, 2013. The anticipated date for the completion of this process is **June 28, 2013.** This notification is to inform you of the new independent status of Mallinckrodt LLC's ultimate parent company. This action does not involve any transfer of property or change to the corporate structure of Mallinckrodt LLC and all permits and licenses will

RECEIVED
APR 04 2013
DIVISION OF ENVIRONMENTAL COMPLIANCE

MALLINCKRODT LLC
675 MCDONNELL BLVD.
HAZELWOOD, MO 63042

**Mallinckrodt** COVIDIEN

remain in the name of Mallinckrodt LLC. Please note that the ownership of the property remains the same.

If you have any further questions or require any additional information please contact me at 314/654-2131 or by email at laura.andrew@covidien.com.

Sincerely,

Laura Andrew

Laura Andrew
Principal EHS Engineer

Cc: Eric Berry, Mallinckrodt
Shannon Brown, Mallinckrodt
Tim Dowell, Mallinckrodt
Alan Faust, Mallinckrodt
Bob Schaefer, Mallinckrodt

MALLINCKRODT LLC
675 MCDONNELL BLVD.
HAZELWOOD, MO 63042

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ENVIRONMENTAL COMPLIANCE

Mallinckrodt

COVIDIEN

**Attachment A**
**Environmental Permit List**

**Current Licensee: Mallinckrodt LLC**

| Facility Location | License Type | License Number |
|---|---|---|
| Hazelwood, MO | Industrial Wastewater Discharge Permit | 0710100200-2 |
| Maryland Heights, MO | Industrial Wastewater Discharge Permit | 1007641600-1 |
| St. Louis, MO | Industrial Wastewater Discharge Permit | 2112059600-3 |
| Webster Groves, MO | Industrial Wastewater Discharge Permit | 1048568800-2 |

MALLINCKRODT LLC
675 MCDONNELL BLVD.
HAZELWOOD, MO 63042

RECEIVED
APR 04 2013
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

**MSD**

March 25, 2013

Amber Crouch
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Ms. Crouch:

We have reviewed your application dated March 25, 2013 requesting approval to discharge 700 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is 50% ethylene glycol solution at the Building 97 Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. We understand that the wastewater will be discharged through sampling point 010.

Based on the information you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a combined sewer on site. Due to the high ethylene glycol concentration, the discharge is limited to 360 gallons per hour. **This approval is valid for 30 days from the date of this letter.**

You must be certain the waste is discharged into a 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 13042, you will be billed by invoice at the billing rate in effect at the time of discharge. The current rate contained in MSD Ordinance 13042 is $310.07 per ton for COD over 600 mg/L. Using the assumed COD concentration based on the percent of ethylene glycol contained in the wastewater in question, and the proposed discharge volume provided in your application, it is estimated that you will be discharging approximately one and a half two tons of COD over 600 mg/L. (Our quantitative estimate is 1.46 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, Mallinckrodt 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

pc: Brian Gibson
Doug Mendoza

File: IU, MALLINCKRODT INC [1011728100], 3600 N. 2nd St., St. Louis, Missouri

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt, LLC  Evaluated by: SMG

Premise Address: 3600 N. 2nd St., STL  Date: 3/25/13

Send approval letter to applicant

Application Dated: 3/25/13 Received: 3/25/13 All Requested Info. Received: 3/25/13

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: 10117281-00

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 814 Description: 50% ethylene glycol soln. @ Bldg. 97

Normal WW flow from premise? N/A _____ ccf/month, 8,992,101 GPD, _____ GPH. from SP010

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 = 360 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: 03/25/13
Calculated by: Steve Grace
Source name: MALLINCKRODT LLC [1011728100]
Waste material: Used ethylene glycol coolant solution from building 97
Discharge volume: 700 gallons

**2 STRENGTH INFORMATION:**

| | | | | |
|---|---|---|---|---|
| Sample BOD = | 0 | mg/l = | 0 | lbs BOD to be discharged |
| Sample COD = | 500,000 | mg/l = | 2919 | lbs COD to be discharged |
| Sample TSS = | 0 | 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** | **2.04** | **6** |
| Coldwater | 0.00 | 0 | 8.26 | 1 |
| Fenton | 0.00 | 0 | 30.27 | 0 |
| Grand Glaize | 0.00 | 0 | 13.37 | 1 |
| Lemay | 0.00 | 0 | 3.04 | 4 |
| Lower Meramec | 0.00 | 0 | 22.01 | 1 |
| Missouri River | 0.00 | 0 | 5.34 | 2 |

**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 = 499400 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: 13402

| | | | |
|---|---|---|---|
| Volume = | $ 2.28 | /CcF | |
| BOD = | $ 620.14 | /ton | |
| COD = | $ 310.07 | /ton | |
| TSS = | $ 231.35 | /ton | |
| Flow charge = | $ - | based on volume = | 0.9 CcF |
| BOD surcharge = | $ - | | |
| COD surcharge = | $ 452.13 | | |
| TSS surcharge = | $ - | | |
| Total discharge charge = | $ 452.13 | | |
| **Customer charge =** | **$ 452.13** | DEC charges special discharge customers for total charges > $20.00 | |
| Approximate charge/gallon = | $ 0.65 | | |

**Comments**

require volume report for billing purposes. Smg

Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

# APPLICATION FOR SPECIAL DISCHARGE APPROVAL

**I. WASTEWATER SOURCE IDENTIFICATION:**

Site Name: Mallinckrodt
Premise Address: 3600 N. 2nd street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt
Contact Person: Amber Crouch
Title: Sr. Env. Specialist
Phone: 314-654-0127 Fax: 314-654-1251

**II. APPLICANT (mailing information):**

Applicant Name: Amber Crouch
Title: EHS department
Company Name: Mallinckrodt
Mailing Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314-654-0127 Fax: 314-654-1251

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: 50% Glycol Bldg. 97
2. Process/activity generating wastewater: draining of Chiller
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 |
|---|---|---|
| glycol | 50 | % |
| water | 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: 700 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: pH adjust at main outfall SP010
   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): _____
Bldg. 97 plant sewer to SP010 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):** Amber Crouch

**Signature:** Amber Crouch **Date:** 3/25/13

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 1011-7281-00 Sample Point No. 814

**MSDS** *Material Safety Data Sheet*

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

# ETHYLENE GLYCOL

## 1. Product Identification

**Synonyms:** 1,2-Ethanediol; glycol; 1,2-Dihydroxyethane; Ethylene Alcohol; Ethulene Dihydrate
**CAS No.:** 107-21-1
**Molecular Weight:** 62.07
**Chemical Formula:** CH2OHCH2OH
**Product Codes:**
J.T. Baker: 5387, 5845, 9140, 9298, 9300, 9346, 9356, L715
Mallinckrodt: 5001, 5037

## 2. Composition/Information on Ingredients

| Ingredient | CAS No | Percent | Hazardous |
|---|---|---|---|
| Ethylene Glycol | 107-21-1 | 99 - 100% | Yes |

## 3. Hazards Identification

**Emergency Overview**

**WARNING! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.**

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate (Life)
Flammability Rating: 1 - Slight
Reactivity Rating: 1 - Slight
Contact Rating: 3 - Severe (Life)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: Green (General Storage)

**Potential Health Effects**

---

**Inhalation:**
Vapor inhalation is generally not a problem unless heated or misted. Exposure to vapors over an extended time period has caused throat irritation and headache. May cause nausea, vomiting, dizziness and drowsiness. Pulmonary edema and central nervous system depression may also develop. When heated or misted, has produced rapid, involuntary eye movement and coma.
**Ingestion:**
Initial symptoms in massive dosage parallel alcohol intoxication, progressing to CNS depression, vomiting, headache, rapid respiratory and heart rate, lowered blood pressure, stupor, collapse, and unconsciousness with convulsions. Death from respiratory arrest or cardiovascular collapse may follow. Lethal dose in humans: 100 ml (3-4 ounces).
**Skin Contact:**
Minor skin irritation and penetration may occur.
**Eye Contact:**
Splashes may cause irritation, pain, eye damage.
**Chronic Exposure:**
Repeated small exposures by any route can cause severe kidney problems. Brain damage may also occur. Skin allergy can develop. May damage the developing fetus.
**Aggravation of Pre-existing Conditions:**
Persons with pre-existing skin disorders, eye problems, or impaired liver, kidney, or respiratory function may be more susceptible to the effects of this substance.

## 4. First Aid Measures

**Inhalation:**
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
**Ingestion:**
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
**Skin Contact:**
Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
**Eye Contact:**
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**Note to Physician:**
Give sodium bicarbonate intravenously to treat acidosis. Urinalysis may show low specific gravity, proteinuria, pyuria, cylindruria, hematuria, calcium oxide, and hippuric acid crystals. Ethanol can be used in antidotal treatment but monitor blood glucose when administering ethanol because it can cause hypoglycemia. Consider infusion of a diuretic such as mannitol to help prevent or control brain edema and hemodialysis to remove ethylene glycol from circulation.

## 5. Fire Fighting Measures

**Fire:**
Flash point: 111C (232F) CC
Autoignition temperature: 398C (748F)
Flammable limits in air % by volume:
lel: 3.2; uel: 15.3
Slight to moderate fire hazard when exposed to heat or flame.

**Explosion:**
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Containers may explode when involved in a fire.
**Fire Extinguishing Media:**
Dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.
**Special Information:**
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Toxic gases and vapors may be released if involved in a fire.

## 6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from acids and oxidizing materials. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**
Ethylene Glycol [107-21-1]:

-ACGIH Short-Term Exposure Limit (STEL):
100 mg/m3 Ceiling (aerosol only)
**Ventilation System:**
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
**Personal Respirators (NIOSH Approved):**
If the exposure limit is exceeded, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type P95 or R95 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH P100 or R100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. Please note that N series filters are not recommended for this material. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
**Skin Protection:**
Wear protective gloves and clean body-covering clothing.
**Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

## 9. Physical and Chemical Properties

**Appearance:**
Clear oily liquid.
**Odor:**
Odorless.
**Solubility:**
Miscible in water.
**Specific Gravity:**
1.1 @20C/4C
**pH:**
No information found.
**% Volatiles by volume @ 21C (70F):**
100
**Boiling Point:**
197.6C (388F)
**Melting Point:**
-13C (9F)
**Vapor Density (Air=1):**
2.14
**Vapor Pressure (mm Hg):**
0.06 @ 20C (68F)
**Evaporation Rate (BuAc=1):**
No information found.

## 10. Stability and Reactivity

**Stability:**
Stable under ordinary conditions of use and storage.
**Hazardous Decomposition Products:**
Carbon dioxide and carbon monoxide may form when heated to decomposition. May produce acrid smoke and irritating fumes when heated to decomposition.
**Hazardous Polymerization:**
Will not occur.
**Incompatibilities:**
Strong oxidizing agents. Reacts violently with chlorosulfonic acid, oleum, sulfuric acid, perchloric acid. Causes ignition at room temperature with chromium trioxide, potassium permanganate and sodium peroxide; causes ignition at 212F(100C) with ammonium dichromate, silver chlorate, sodium chloride and uranyl nitrate.
**Conditions to Avoid:**
Heat, flames, ignition sources, water (absorbs readily) and incompatibles.

## 11. Toxicological Information

**Toxicological Data:**
Oral rat LD50: 4700 mg/kg; skin rabbit LD50: 9530 mg/kg.
Irritation - skin rabbit: 555 mg(open), mild; eye rabbit: 500mg/24H, mild.
Investigated as a tumorigen, mutagen, reproductive effector.
**Reproductive Toxicity:**
Has shown teratogenic effects in laboratory animals.

```
--------\Cancer Lists\-----------------------------------------------------
                                        ---NTP Carcinogen---
```

| Ingredient | Known | Anticipated | IARC Category |
|---|---|---|---|
| Ethylene Glycol (107-21-1) | No | No | None |

## 12. Ecological Information

**Environmental Fate:**
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly. When released into water, this material is expected to readily biodegrade. When released into the water, this material is expected to have a half-life between 1 and 10 days. This material is not expected to significantly bioaccumulate. This material has a log octanol-water partition coefficient of less than 3.0. When released into water, this material is not expected to evaporate significantly. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life between 1 and 10 days.
**Environmental Toxicity:**
The LC50/96-hour values for fish are over 100 mg/l.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

Not regulated.

## 15. Regulatory Information

--------\Chemical Inventory Status - Part 1\--------

| Ingredient | TSCA | EC | Japan | Australia |
|---|---|---|---|---|
| Ethylene Glycol (107-21-1) | Yes | Yes | Yes | Yes |

--------\Chemical Inventory Status - Part 2\--------

| Ingredient | Korea | --Canada-- DSL | NDSL | Phil. |
|---|---|---|---|---|
| Ethylene Glycol (107-21-1) | Yes | Yes | No | Yes |

--------\Federal, State & International Regulations - Part 1\--------

| Ingredient | -SARA 302- RQ | TPQ | ------SARA 313------ List | Chemical Catg. |
|---|---|---|---|---|
| Ethylene Glycol (107-21-1) | No | No | Yes | No |

--------\Federal, State & International Regulations - Part 2\--------

| Ingredient | CERCLA | -RCRA- 261.33 | -TSCA- 8(d) |
|---|---|---|---|
| Ethylene Glycol (107-21-1) | 5000 | No | No |

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Pure / Liquid)

**Australian Hazchem Code:** None allocated.
**Poison Schedule:** None allocated.
**WHMIS:**
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: 1 Flammability: 1 Reactivity: 0
**Label Hazard Warning:**
WARNING! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.
**Label Precautions:**
Do not breathe vapor or mist.
Use only with adequate ventilation.
Keep container closed.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
**Label First Aid:**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. Call a physician if irritation develops or persists. If swallowed, give water or milk to drink and induce vomiting. Never give anything by mouth to an unconscious person. In all cases call a physician.
**Product Use:**
Laboratory Reagent.
**Revision Information:**
No Changes.
**Disclaimer:**
**********
**Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.**
**********
**Prepared by:** Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

**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

**MSD**

**CORRECTED LETTER (03-28-13)**

March 19, 2013

Amber Crouch
**MALLINCKRODT, LLC**
3600 N. 2nd St.
St. Louis, MO 63147

**RE: NOTICE OF VIOLATION – WASTEWATER DISCHARGE PERMIT NO. 10117281-00**
**For premise at: 3600 N. 2nd St.**

Dear Ms. Crouch:

As our field personnel notified you on March 19, 2013, 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 |
|---|---|---|---|---|---|---|---|
| 3-19-13 | 0950 | 005 | Grab | pH | 5.5-11.5 SU | IN | 11.61 SU |

**005 = MH 5' S of building #96, 30' E of SP 003 (Center pipe, 8" dia., 3' down)**
**SU = Standard pH Units**
**IN = Instantaneous**

Our field personnel also provided you with a Field Notice of Discharge Violation, copy enclosed, for the above pH violations. Please be aware that laboratory analyses of the samples collected may potentially result in other discharge violations. Should there be any, we will notify you of them upon completion of the analyses.

**REQUIRED ACTION/RESPONSE:**

1. Submit a report of corrective actions, to ensure compliance with MSD limitations for pH. 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 pH
   c. Take samples at times representative of normal operations
   d. pH and temperature readings must be taken immediately when the sample is collected, and not after transporting to a laboratory for analysis
   e. pH readings must be measured using a pH probe, rather than with pH paper strips
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 **April 22, 2013**.

Thank you for 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

Enclosures: SNC enclosure, SP map, Field Notice

cc: Doug Mendoza
Chris Bulmahn

File: Mallinckrodt, LLC (10117281-00)

**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

**MSD**

March 19, 2013

Amber Crouch
**MALLINCKRODT, LLC**
3600 N. 2nd St.
St. Louis, MO 63147

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Sincerely,
**METROPOLITAN ST. LOUIS SEWER DISTRICT**

Jason Gill
Environmental Engineering Associate

Enclosures: SNC enclosure, SP map, Field Notice

cc: Doug Mendoza
Chris Bulmahn

File: Mallinckrodt, LLC (10117281-00)

MSD

# FIELD NOTICE OF DISCHARGE VIOLATION

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
10 EAST GRAND AVENUE
ST. LOUIS, MO 63147

COMPANY NAME Mallinckrodt LLC PRETREATMENT ACCOUNT NO. 1017281 00

MSD Industrial Waste Technicians conducted sampling of the wastewater discharge from your facility today. This sampling involved up to four separate visits to each sampling point (SP). The samples collected will be analyzed by the Division of Environmental Compliance laboratory and the results will become a part of the District's records for your facility.

**Conditions, which we wish to bring to your attention at the earliest possible time, were noted during the sampling visits.** These conditions may include pH and/or temperature readings which fell outside the limits allowed under MSD Sewer Use Ordinance 12559 or other conditions which may indicate a potential problem with the discharge from your facility.

| SP NO. | TIME | pH | TEMP | OTHER CONDITIONS |
|---|---|---|---|---|
| 005 | 9:50 | 11.61 | 9.7 | |
| | | | | |
| | | | | |
| | | | | |

| SP NO. | TIME | pH | TEMP | OTHER CONDITIONS |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

pH must be within the range of 5.5 to 11.5 at all times and the temperature may not exceed 60 degrees Celsius (140 degrees Fahrenheit) at any time.

Your company will receive a formal notice of the above violations as well as notice of any violations of other parameter limits which are detected during analysis by the MSD laboratory.

**This field notice is provided to assist you in making an early determination of the cause of the above violations and to take immediate corrective actions.** Please direct any questions you may have to Doug Mendoza at 314-436-8717.

Presented to company representative (Printed Name) Jada Wilhelm

(Signature) Jada Wilhelm

by MSD Ind. Waste Technician Dave Schepers Date 3/19/13 Time 10:10

NOV-Field 1/08 Distribution: White Copy → Industry; Yellow Copy → Pretreatment Unit; Pink Copy → Field Unit

**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

**MSD**

March 13, 2013

Amber Crouch
Senior HS&E Engineer
**MALLINCKRODT LLC**
3600 N. 2nd Street
St. Louis, MO 63147

1011728100

**Re: Discharge Permit No: 2112059600 - 3.1**
**For premise at: 3600 N 2nd Street**
**St. Louis, MO 63147**

Dear Ms. Crouch:

The Metropolitan St. Louis Sewer District (MSD) has received your request for a permit modification to remove Sample Point 935 and to reduce monitoring to Sample Point 912.

- Sample Point 935 will be removed on the next permit revision due to no discharge of wastewater that is subject to Pharmaceutical Manufacturing Point Source Category limitations.
- Sample Point 912 will remain at monthly monitoring due to the high potential for adverse effects to the District's operations. Please note, that monitoring has already been reduced from weekly to monthly due to Mallinckrodt's history of compliance.

A permit revision will be sent to you by April 08, 2013 for your review.

We appreciate your cooperation and support in helping us to comply with federal regulations. Please contact me at 314.436.8721, if you have any questions.

Sincerely,
**METROPOLITAN ST. LOUIS SEWER DISTRICT**

Chris Bulmahn

Chris Bulmahn
Associate Engineer

cc: Doug Mendoza
Jason Gill

MSD

COVIDIEN

March 1, 2013

Mr. Scott Rehmer
Assistant Engineer
St. Louis Metropolitan Sewer District
10 East Grand Ave
St. Louis, MO 63147

10117281 00

RE: Request for Permit Modifications
MSD Permit 21120596 – 2.1

Dear Mr. Rehmer,

This letter is a formal request for a permit modification to remove unused sample point SP935 and request less frequency monitoring for SP912 based on past analytical results at the Mallinckrodt St. Louis Plant.

Sample Point SP935 – Building 512 Methanol Stripper
This sample point (SP935) was originally permitted as a PEG subpart C discharge for an onsite wastewater stripper used to process wastewater from contrast media production. To date, no wastewater subject to PEG limits has been discharged through this sample point and we never intend to discharge wastewater subject to PEG through SP935. Therefore, we would like to request the removal of this sample point from our permit.

Sample Point SP912 – Building 504
The current permit requires that SP912 be sampled monthly for DMAC with mass based limits of 7091 pounds per day, daily maximum and 5459 pounds per day, monthly average. DMAC is generated from the contrast media loversol process in Building 504. Listed in the table below are the DMAC monthly results from the last 27 months. Results have never exceeded either the daily maximum or monthly average limits. The average DMAC result over the last 27 months is 1991 pounds per day or 28% of our daily maximum limit. Based on these results, we are requesting a reduced monitoring frequency from monthly to quarterly.

- NO.
- High impact if exceeded warrants 1/mo. We already reduced from weekly.
- DMG

RECEIVED
MAR 11 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

COVIDIEN/MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

COVIDIEN

| SP 912 DMAC Results Over last 27 Months | | | |
|---|---|---|---|
| | 2011 | 2012 | 2013 |
| January | 1800 | 630 | 2500 |
| February | 1400 | 1700 | 3000 |
| March | 1700 | 1800 | 2100 |
| April | 1338 | 1700 | |
| May | 1300 | 1500 | |
| June | 1187 | 1600 | |
| July | 2000 | 1700 | |
| August | 2700 | 2600 | |
| September | 1400 | 4700 | |
| October | 1700 | 2900 | |
| November | 1700 | 2300 | |
| December | 2400 | 2400 | |
| | | | |
| **Average monthly DMAC result over last 27 months** | | | **1991** |

Please let me know if you need any additional information.

Sincerely,

Amber Crouch

Amber Crouch
Sr. Environmental Specialist
314-654-0127

RECEIVED
MAR 11 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

COVIDIEN/MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

**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

MSD

March 6, 2013

Amber Crouch
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Ms. Crouch:

We have reviewed your application dated March 5, 2013 requesting approval to discharge 500 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is a batch of reduced Diamide solution from Building 507 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. Information provided previously indicated that the reduced Diamide solution is a precursor to the production of imaging product MP104, and that this wastewater will be discharged through sampling point 010.

Based on the information you provided, this wastewater meets MSD Ordinance 12559 standards and is approved for discharge into a sanitary 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.**

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, Mallinckrodt 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, MALLINCKRODT INC [101172810O], 3600 N. 2nd St., St. Louis, Missouri

C1A

# SD EVALUATION CHECKLIST - ON SITE

APPLICATION INFORMATION

Source Name: Mallinckrodt LLC  Evaluated by: SMG

Premise Address: 3600 N. 2nd St.  Date: 3/6/13

Send approval letter to applicant

Application Dated: 3/5/13 Received: 3/5/13 All Requested Info. Received: 3/5/13

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: 1011-7281-00

* o:\costrecovery\cross reference xls file

** o:\costrecovery\sourlist xls file

Sample Point: No. Assigned: 843 Description: reduced Diamide solution from Bldg. 507

Normal WW flow from premise? N/A _____ ccf/month, 2,992,101 GPD, _____ GPH. from SP010

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: Mallinckrodt
Premise Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Owner: Mallinckrodt
Contact Person: Amber Crouch
Title: Sr. Env. Specialist
Phone: 314-654-0127 Fax: 314-654-1251

**II. APPLICANT (mailing information):**

Applicant Name: Amber Crouch
Title: EHS department
Company Name: Mallinckrodt
Mailing Address: 3600 N. 2nd Street
City: St. Louis State: MO Zip: 63147
Phone: 314-654-0127 Fax: 314-654-1251

**III. A. MATERIAL TO BE DISCHARGED (check all applicable boxes):**

1. Wastewater description/location: Reduced Diamide / Water Bldg. 507
2. Process/activity generating wastewater: process upset
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 |
|---|---|---|
| diamide | 33 | % |
| Water | 66 | % |
| | | |
| | | |

| 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: _____ Gallons
   b. Proposed discharge volume: 500 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: pH adjust at main outfall SP010
   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): Bldg. 507 to plant sewer to SP010 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):** Amber Crouch

**Signature:** Amber Crouch **Date:** 3/5/13

**FOR MSD USE ONLY:**

File Name: Mallinckrodt LLC ID No. 1011-7281-00 Sample Point No. 843

MSDS Number: **INTPM** * * * * * *Effective Date: 12/21/99*

**MSDS** *Material Safety Data Sheet*

*From:* Mallinckrodt Inc.
675 McDonnell Blvd.
St. Louis, MO 63042

MALLINCKRODT

24 Hour Emergency Telephone: 314-654-1600
CHEMTREC: 1-800-424-9300
National Response in Canada
CANUTEC: 613-996-6666
Outside U.S. And Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

# DIAMIDE

## 1. Product Identification

**Synonyms:** MP-967; N,N'-bis(2,3-dihydroxypropyl)-5-nitroisophthalamide; N,N'-bis(2,3-dihydroxypropyl)-5-nitro-1,3-benzenedicarboxam ide
**CAS No.:** 76820-35-4
**Molecular Weight:** 357.31
**Chemical Formula:** C14H19N3O8

Not Scanned

## 2. Composition/Information on Ingredients

| Ingredient | CAS No | Percent | Hazardous |
|---|---|---|---|
| Reduced Diamide | 76820-35-4 | 100% | Yes |

## 3. Hazards Identification

**Emergency Overview**

**DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION. MAY CAUSE METHEMOGLOBINEMIA.**

**Potential Health Effects**

The health effects from exposure to MP-967 are not known, but are expected to be similar to other aromatic amine compounds. The health effects from exposure to Aniline may be used as a reference and are given in the descriptions below.

**Inhalation:**
Toxic. Affects ability of blood to carry oxygen. Symptoms may include bluish discoloration of lips and tongue, severe headache, nausea, confusion, dizziness, shock, respiratory paralysis, death.
**Ingestion:**
Toxic. Lethal dose may be as little as one gram. Symptoms of ingestion parallel those of inhalation exposure.
**Skin Contact:**
May be absorbed through skin. Symptoms of skin absorption parallel those from inhalation exposure. Local

contact may cause dermatitis.
**Eye Contact:**
Vapor is an eye irritant. Splashes may cause corneal damage.
**Chronic Exposure:**
Aniline is a blood toxin, causing hemoglobin to convert to methemoglobin, resulting in cyanosis. Lengthy or repeated exposures may result in decreased appetite, anemia, weight loss, nervous system affects, and kidney, liver and bone marrow damage.
**Aggravation of Pre-existing Conditions:**
Persons with pre-existing skin disorders or eye problems or impaired liver or kidney function may be more susceptible to the effects of the substance.

## 4. First Aid Measures

**Inhalation:**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do not give mouth to mouth resuscitation. CALL A PHYSICIAN IMMEDIATELY.
**Ingestion:**
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.
**Skin Contact:**
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
**Eye Contact:**
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

## 5. Fire Fighting Measures

**Fire:**
Not considered to be a fire hazard.
**Explosion:**
Not considered to be an explosion hazard.
**Fire Extinguishing Media:**
Use any means suitable for extinguishing surrounding fire.
**Special Information:**
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

## 6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

## 7. Handling and Storage

Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage.

## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**
None established.
**Ventilation System:**
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
**Personal Respirators (NIOSH Approved):**
For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
**Skin Protection:**
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
**Eye Protection:**
Safety glasses. Maintain eye wash fountain and quick-drench facilities in work area.

## 9. Physical and Chemical Properties

**Appearance:**
Tan to off-white amorphous solid.
**Odor:**
Slightly amine to odorless.
**Solubility:**
Approximately 0.7 g/ml in water and methyl alcohol.
**Specific Gravity:**
No information found.
**pH:**
No information found.
**% Volatiles by volume @ 21C (70F):**
No information found.
**Boiling Point:**
No information found.
**Melting Point:**
128 - 132C (262 - 270F)
**Vapor Density (Air=1):**
No information found.
**Vapor Pressure (mm Hg):**
No information found.
**Evaporation Rate (BuAc=1):**
No information found.

## 10. Stability and Reactivity

**Stability:**
Stable under ordinary conditions of use and storage.
**Hazardous Decomposition Products:**
Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.
**Hazardous Polymerization:**
Will not occur.
**Incompatibilities:**

No information found.
**Conditions to Avoid:**
No information found.

## 11. Toxicological Information

For Aniline: Oral rat LD50: 250 mg/kg. Skin rat LD50: 1400 mg/kg. Inhalation mouse LC50: 175 ppm (7 hours). Mutation references cited Irritation eye rabbit 102 mg severe; skin rabbit 500 mg/24H moderate.

--------\Cancer Lists\----------

| Ingredient | ---NTP Carcinogen--- Known | Anticipated | IARC Category |
|---|---|---|---|
| Reduced Diamide (76820-35-4) | No | No | None |

## 12. Ecological Information

**Environmental Fate:**
No information found.
**Environmental Toxicity:**
No information found.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

Not regulated.

## 15. Regulatory Information

--------\Chemical Inventory Status - Part 1\----------

| Ingredient | TSCA | EC | Japan | Australia |
|---|---|---|---|---|
| Reduced Diamide (76820-35-4) | Exempt | Yes | No | No |

--------\Chemical Inventory Status - Part 2\----------

| Ingredient | Korea | --Canada-- DSL | NDSL | Phil. |
|---|---|---|---|---|
| Reduced Diamide (76820-35-4) | No | No | No | No |

--------\Federal, State & International Regulations - Part 1\----------

| Ingredient | -SARA 302- RQ | TPQ | ------SARA 313------ List | Chemical Catg. |
|---|---|---|---|---|
| Reduced Diamide (76820-35-4) | No | No | No | No |

--------\Federal, State & International Regulations - Part 2\----------

| Ingredient | CERCLA | -RCRA- 261.33 | -TSCA- 8(d) |
|---|---|---|---|
| Reduced Diamide (76820-35-4) | No | No | No |

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Pure / Solid)

**Australian Hazchem Code:** No information found.
**Poison Schedule:** No information found.
**WHMIS:**
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: 3 Flammability: 0 Reactivity: 0
**Label Hazard Warning:**
DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION. MAY CAUSE METHEMOGLOBINEMIA.
**Label Precautions:**
Do not breathe dust.
Do not get in eyes, on skin, or on clothing.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
**Label First Aid:**
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.
**Product Use:**
Drug manufacturing intermediate. For FDA Regulated Use.
**Revision Information:**
New MSDS.
**Disclaimer:**
**********
**Mallinckrodt provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.**
**********

MSD

**Doug Mendoza** Mallinckrodt 1011728100

| | |
|---|---|
| **From:** | Doug Mendoza |
| **Sent:** | Thursday, February 28, 2013 2:45 PM |
| **To:** | 'bmcallister@burnsmcd.com' |
| **Cc:** | Christopher J. Bulmahn; Dave Kupke; Jason Gill; Martin Blecha; Michael S. Kynion; Scott Rehmer; Tom Boehm |
| **Subject:** | MWEA Industrial Pretreatment Awardees for St. Louis for 2012 |
| **Attachments:** | MWEA PT Awards for St. Louis 2012.xls |

Bill,

I have attached the list of companies from St. Louis for pretreatment awards. It's a big list, but we have a lot of companies in our program. This is a small subset.

I know the meeting is fast approaching. However, this is the earliest I can produce a list, due to regulatory due dates for reports from industries, etc.

FYI, This is the fifth Gold Award in a row for the Platinum winners. I just listed them as Platinum.

Let me know if you have any questions!

Doug

PS. MSD Staff – If I left some company on here that shouldn't be, let me know ASAP, and I will inform Bill McAllister.

| Award | Account # | Industry Name | Premise Address |
|---|---|---|---|
| GOLD | 1007473400 | A SQUARE SYSTEMS | 11923 Borman Drive |
| PLATINUM | 1007538700 | AIR PRODUCTS PRISM MEMBRANES | 11444 Lackland Road |
| GOLD | 1016212000 | ALSCO INC | 315 Lynch St. |
| GOLD | 1020644700 | AMERICAN PLATING CO | 3527 Park Ave. |
| GOLD | 1045097000 | AMERICAN RIVER TRANSPORTATION COMPANY | 4528 S. Broadway |
| GOLD | 1016242300 | ANHEUSER-BUSCH LLC | One Busch Place |
| SILVER | 1016336500 | ARAMARK UNIFORM SERVICES | 10822 Midwest Industrial Blvd. |
| SILVER | 1016199000 | ARCHWAY ANODIZING | 2120 Miami St. |
| GOLD | 7777703701 | ARNOLD DEFENSE & ELECTRONICS LLC | 3000 Arnold Tenbrook Road |
| GOLD | 1011810500 | ASSOCIATED EQUIPMENT CORP | 5043 Farlin Ave. |
| GOLD | 1044826000 | BELTSERVICE CORP | 4143 Rider Trail North |
| PLATINUM | 1020545000 | BERCO INC | 1120 Montrose Ave |
| GOLD | 1053946900 | BITRODE CORPORATION | 9787 Green Park Industrial Drive |
| GOLD | 1020792600 | BODINE ALUMINUM INC | 2100 Walton Road |
| GOLD | 1036497600 | BOEING COMPANY | Lambert Field |
| GOLD | 7777703901 | BROWNING ARMS COMPANY | 3005 Arnold-Tenbrook Road |
| GOLD | 1016064600 | CARE-TECH LABORATORIES INC | 3224 S. Kingshighway Blvd. |
| GOLD | 1047349900 | CAREFUSION | 5 Sunnen Dr. |
| GOLD | 1030868200 | CARR LANE MANUFACTURING CO | 4200 Carr Lane Court |
| GOLD | 1044467700 | CINTAS CORP | 6200 Olive Boulevard |
| SILVER | 1020509600 | CLEAN THE UNIFORM COMPANY | 1316 S. 7th St |
| GOLD | 1011839100 | COMMERCIAL PLATING COMPANY | 9100 Riverview Dr |
| GOLD | 1024459600 | CONAGRA FOODS - DAVID & SONS | 8064 Chivvis Drive |
| SILVER | 1037797500 | COOPER BUSSMANN INC | 114 Old State Road |
| SILVER | 1030860400 | CR METAL PRODUCTS INC | 10655 Gateway Boulevard |
| GOLD | 1008631000 | CUSTOM FABRICATION & COATINGS | 7955 Manchester Road, Suite 410 |
| SILVER | 1011829100 | DIAL CORPORATION | 6901 McKissock Ave |
| SILVER | 1016343900 | DR PEPPER / SEVEN UP MANUFACTURING CO | 8900 Page Ave. |
| GOLD | 1016147800 | DYNACRAFT INC | 5000 Connecticut |
| PLATINUM | 1011835500 | ELANTAS PDG INC | 5200 N. Second Street |
| GOLD | 1020585200 | ELEMENTIS SPECIALTIES INC | 5548 Manchester Avenue |
| GOLD | 1047270800 | ENVIROPAK CORPORATION | 4135 Galley Ct. |
| SILVER | 1003808800 | ENVIROPAK CORPORATION | 4203 Shoreline Ct. |
| SILVER | 1024458900 | ESSEX CRYOGENICS OF MISSOURI INC | 8007 Chivvis Dr |
| GOLD | 1008724100 | ESSEX MANUFACTURING DIVISION | 6 Sunnen Drive |
| SILVER | 1020703500 | FAULTLESS HEALTH CARE LINEN SERVICE | 2030 S. Broadway |
| GOLD | 7777710900 | FLEXIBLE CUTTING SYSTEMS | 4725A Green Park Road |
| GOLD | 1038391300 | GALLUS BIOPHARMACEUTICALS LLC | 4751 & 4777 LeBourget Drive/ 4766 LaGuardia Drive |
| GOLD | 1020512900 | GLAXOSMITHKLINE | 319 S. 4th St. |
| GOLD | 1015973500 | GMP METAL PRODUCTS | 3850/3883 Delor St |
| GOLD | 1037511800 | GREIF FENTON | 2391 Cassens Drive |
| SILVER | 1011730300 | HERMANN OAK LEATHER CO | 4050 N. 1st St. |
| SILVER | 1003798900 | HUSSMANN CORP | 12999 St. Charles Rock Rd. |
| SILVER | 1038062000 | ICE CREAM SPECIALTIES INC | 8419 Hanley Industrial Dr |
| GOLD | 1015950000 | ICL PERFORMANCE PRODUCTS LP | 8201 Idaho Avenue |
| SILVER | 1020549900 | INTERCON CHEMICAL COMPANY | 1100-1140 Central Industrial Drive |
| SILVER | 1047157100 | JOST CHEMICAL CO | 8110 - 8150 Lackland |
| SILVER | 1015964500 | JW ALUMINUM | 6100 S. Broadway |
| GOLD | 1011729500 | KEMIRA WATER SOLUTIONS INC | 10 Bremen Ave. |
| SILVER | 1046164300 | KERRY AMERICAS INC | 8021-8155 New Hampshire |
| SILVER | 1011727700 | KIESEL COMPANY | 1 Branch Street |
| GOLD | 1030650700 | KILLARK ELECTRIC MFG CO | 3940 Martin Luther King Dr. |
| GOLD | 1045110500 | LAIRD TECHNOLOGIES | 3481 Rider Trail South |
| GOLD | 1036503400 | LAMBERT-ST LOUIS INTERNATIONAL AIRPORT | 10701 Lambert International Blvd. |
| GOLD | 1008672500 | LEE BIOSOLUTIONS INC | 2924 Mary Ave. |
| GOLD | 7777705001 | LMC INDUSTRIES | 100-110 Manufacturers Dr. |
| GOLD | 1012070200 | LOUISA FOOD PRODUCTS INC | 1918 Switzer |
| SILVER | 1011728100 | MALLINCKRODT LLC | 3600 N 2nd St |
| PLATINUM | 1007784500 | MALLINCKRODT LLC | 675 McDonnell Blvd |
| GOLD | 1048568800 | MALLINCKRODT LLC | 385 Marshall Ave. |
| GOLD | 1040996400 | MARK ANDY INC | 18081 Chesterfield Airport Road |
| GOLD | 1008643100 | MERIDIAN MEDICAL TECHNOLOGIES | 2555 Hermelin Dr. |
| GOLD | 1043376500 | MERRELL BROS INC ST LOUIS DISPOSAL | 6400 McKissock Ave. |
| GOLD | 7777703801 | METAL CONTAINER CORPORATION | 42 Tenbrook Industrial Court |
| SILVER | 1046162000 | MICROFINISH CO INC | 8353 Courtney Ave. |

**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

MSD

February 20, 2013

Julie Summers
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

Dear Ms. Summers:

In a letter dated January 21, 2011, we approved of the discharge to the Metropolitan St. Louis Sewer District of treated rainwater and groundwater from the remediation of the Columbium-Tantalum (CT) decommissioning project at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri. This approval was extended until March 21, 2013 in our correspondence dated January 13, 2012, July 16, 2012, and December 3, 2012. If you wish to continue to discharge this material, you will need to obtain an extension of your special discharge approval within the next 30 days to maintain your approval.

Since we require monthly self-monitoring reports for each discharge event, you need only to submit a request for an extension of up to two years for this special discharge. When requesting an extension, please identify any changes in the source or characteristics of this wastewater since this special discharge was originally approved.

Please contact me at (314) 436-8755 with questions or comments.

Sincerely,
**METROPOLITAN ST. LOUIS SEWER DISTRICT**

Steven M. Grace

Steve Grace
Environmental Assistant Engineer

bv

pc: Brian Gibson
Doug Mendoza

File: IU-MALLINCKRODT-INC [1011728100]

MALLINCKRODT LLC.

1011 728100

MSD

COVIDIEN

January 25, 2013

Mr. Doug Mendoza
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147

Re: 2012 4th Quarter Self-Monitoring Report for Permit No. 21120596 – 3.1

Dear Mr. Mendoza,

Please find enclosed the 2012 4th Quarter Self-Monitoring report for Mallinckrodt Inc.

The following sample points received no pharmaceutical process water flow during the second quarter: SP080 and SP935.

CT Excavation activities continued during the fourth quarter 2012 and there were multiple discharges under the Special Discharge Permit issued for wastewater generated from CT remediation activities. A summary of the discharges is provided in the Industrial User Radioactive Discharge Report included in this submittal.

Our planned electrical shut down occurred on September 28th through October 1st. As stated in our letter to you dated September 4th, 2012, the two lift station outfalls SP008 and SP011 overflowed directly to MSD during this time. Samples were taken and analyzed and were included in the 3rd Quarter 2012 report. The pH readings for October 1st, 2012 are included in this report.

If you have any questions or require more detailed information, please contact me at 314-654-0127.

Sincerely,

Amber Crouch

Amber Crouch
Sr. Environmental Specialist

RECEIVED
JAN 28 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

ENCLOSURES

COVIDIEN/MALLINCKRODT
3600 NORTH SECOND STREET
ST. LOUIS, MO 63147

TELEPHONE: 314-654-2000
FAX: 314-654-1251

## 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.**

| | |
|---|---|
| A | NO CHANGE IN WASTEWATER DISCHARGE AT SAMPLE POINTS WITH NO MONITORING REQUIRED |
| | For permit special conditions that waive monitoring at any sample point(s) specified in your permit, you are required to make the following certification for each report in which monitoring is waived:<br>____ I certify, since the last discharge monitoring report, there has been no change in the character of the wastes discharged at sample points 001 and 002.<br>____ I certify, since the last discharge monitoring report, there has been no discharge from sample points 008 and 011. |
| B | NO CHANGE IN WASTEWATER DISCHARGE AT ACTIVE CONNECTIONS WITHOUT SAMPLE POINTS |
| | For permit special conditions that waive monitoring at active connection points which are not specified as sample points in your permit, you are required to make the following certification:<br>____ I certify, since the last discharge monitoring report, there has been no change in the character of wastes discharged at those active connection points which are not specified in my permit. |
| E | NO DISCHARGE OF CATEGORICAL WASTE |
| | For permit special conditions that prohibit discharge of wastes which are subject to certain categorical pretreatment standards, you are required to make the following certification:<br>____ I certify, since the last discharge monitoring report, there has been no discharge of wastes which are subject to pretreatment standards in 40 CFR 414 (except for those wastes conveyed by SP 905). |
| F | CYANIDE NOT USED OR GENERATED IN 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from limitations and monitoring for Total Cyanide at the Pharmaceutical sample points 080, 915, 920, 935, 936, and 937, subject to the following certification:<br>____ I certify, since the last discharge monitoring report, cyanide has not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. |
| H | PHARMACEUTICAL POLLUTANTS NOT USED OR GENERATED IN 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants at the Pharmaceutical sample points 915, 935, and 936, subject to the following certification:<br>____ I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, have not been used or generated in any pharmaceutical manufacturing process subject to Categorical Standards in 40 CFR 439. In addition, the above-referenced report remains valid. |
| I | SURROGATE MONITORING ALLOWED FOR 40 CFR 439 OPERATIONS |
| | Discharges subject to Pharmaceutical Categorical Standards (40 CFR 439) can be exempted from monitoring for certain 40 CFR 439-regulated pollutants, and replaced by monitoring for surrogate pollutant(s), at the Pharmaceutical sample points 920 and 937 subject to the following certification:<br>____ I certify, since the last discharge monitoring report, the 40 CFR 439-regulated pollutants, as determined in permittee's report dated April 5, 2010, continue to receive the same degree of treatment as the surrogate pollutant(s). In addition, the above-referenced report remains valid. |

## PART IV: GENERAL CERTIFICATION STATEMENTS

| | |
|---|---|
| B | DISCHARGE MONITORING REPORT CERTIFICATION |
| | **All permittees must sign and complete the information below:**<br>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.<br>Print or type name of signing official: James A. Walter<br>Title: Senior Director of Manufacturing Telephone: 314-654-1300<br>Signature: ____ Date: 1/25/13 |

RECEIVED
JAN 28 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

03

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: Mallinckrodt - 1011728100 CB 2.21

Permit No: 2112059600-3

Premise Address: 3600 N Second St. St. Louis, MO 63147

Reporting Period: ☐(JAN-MAR) ☐(APR-JUNE) ☐(JULY-SEPT) ☒(OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER SYSTEM

| RADIONUCLIDE | ACTIVITY DISCHARGED (millicuries) |
|---|---|
| Ur-234 | $4.31 \times 10^{-4}$ |
| Ur-235 | $9.57 \times 10^{-5}$ |
| Ur-238 | $5.49 \times 10^{-4}$ |
| Ra-226 | $6.02 \times 10^{-3}$ |
| Ra-228 | $1.84 \times 10^{-3}$ |
| Th-228 | $2.91 \times 10^{-4}$ |
| Th-230 | $1.15 \times 10^{-3}$ |
| Th-232 | $3.39 \times 10^{-4}$ |
| | |
| | |
| | |
| | |
| | |
| | |
| TOTAL ACTIVITY DISCHARGED: | $1.07 \times 10^{-2}$ |

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 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.

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Print/type name of signing official: James A Walter

Title: Senior Director of Manufacturing Telephone: 314-654-1300

Signature: [signature] Date: 1/25/13

radrpt.doc 2/00

MSD 013766

METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

1011728100

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) _____(APR-JUNE) _____(JULY-SEPT) _X_____(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **001** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | | UNITS |
| FLOW | | E | 1,000 | | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | | |

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) X__(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: Teklab

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **002** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated fld | | | | | | UNITS |
| FLOW | | E | 2,200 | | | | | gal/day |
| NO MONITORING REQUIRED (Sanitary Only) | | | | | | | | |
| There have been no change in the character of the wastes discharged since the last report. | | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) X____(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | 003 | | 009 | | 099 | | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | 11/2/2012 | | 11/2/2012 | | calculated | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | 0715, 0815, 0915, 1015 | | 0735, 0835, 0935, 1035 | | n/a | | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | M | 15,984 | M | 11,146 | E | 4,838 | gal/day |
| Oil & Grease | 200 | G | 9 | G | 18 | E | 0* | mg/l |
| Biochemical Oxygen Demand | **** | C | 89 | C | 160 | E | 0* | mg/l |
| Chemical Oxygen Demand | **** | C | 344 | C | 425 | E | 157 | mg/l |
| Total Suspended Solids | **** | C | 46 | C | 86 | E | 0* | mg/l |
| Temperature | **** | G | 24 | G | 20 | E | 22 | deg C |
| pH | **** | G | 6.8 | G | 6.5 | E | 6.7 | S.U. |
| Lab Dilution Factor | | | 1 | | 1 | | | |

**** No limits for SP003 or SP009;
monitoring requirement only for calculation at SP099

* Calculated value was less than zero.

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METROPOLITAN ST. LOUIS SEWER DISTRICT
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Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) _X___(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | ----> | | **005** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | ----> | | 11/2/2012 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | ----> | | 0725, 0825, 0925, 1025 | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | | UNITS |
| FLOW | | E | 32,000 | | | | | | gal/day |
| Oil & Grease | 200 | G | 6 | | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 21 | | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | <50 | | | | | | mg/l |
| Total Suspended Solids | **** | C | <6 | | | | | | mg/l |
| Temperature | 60 | G | 22 | | | | | | deg C |
| pH | 5.5 - 11.5 | G | 5.5 | | | | | | S.U. |
| **** No limits for SP005 | | | | | | | | | |
| Lab Dilution Factor | | | 1 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) _X___(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **008** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 9/28/2012 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0845 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | UNITS |
| FLOW | | E | 2,000 | | | | | gal/day |
| Oil & Grease | 200 | G | Analytical results | | | | | mg/l |
| Biochemical Oxygen Demand | **** | G | from overflow event | | | | | mg/l |
| Chemical Oxygen Demand | **** | G | reported in CY2012 | | | | | mg/l |
| Temperature | 60 | G | 3rd quarter report | | | | | deg C |
| Total Suspended Solids | **** | G | | | | | | mg/L |
| pH | 5.5 - 11.5 | G | see attached sheet | | | | | S.U. |
| Lab Dilution Factor | | | NA | | | | | |

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ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Monday, October 1st, 2012 | | |
| Sample Point | **SP008** | | |
| | | | |
| Time | pH | | |
| 0005 | 8.79 | | |
| 0035 | 8.8 | | |
| 0105 | 8.36 | | |
| 0135 | 7.96 | | |
| 0205 | 7.9 | | |
| 0235 | 7.71 | | |
| 0305 | 7.67 | | |
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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) __X__(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **010** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 11/2/2012 | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0755, 0855, 0955, 1055 | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | E | 1,142,913 | | | | | gal/day |
| Oil & Grease | 200 | G | 17 | | | | | mg/l |
| Biochemical Oxygen Demand | **** | C | 590 | | | | | mg/l |
| Chemical Oxygen Demand | **** | C | 1380 | | | | | mg/l |
| Total Suspended Solids | **** | C | 40 | | | | | mg/l |
| Temperature | 60 | G | 31 | | | | | deg C |
| pH | 5.5 - 11.5 | G | see attached | | | | | S.U. |
| Chromium | 5.0 | C | 0.014 | | | | | mg/l |
| Copper | 2.7 | C | 0.020 | | | | | mg/l |
| Nickel | 2.3 | C | 0.007 | | | | | mg/l |
| Zinc | 3.0 | C | <0.0200 | | | | | mg/l |
| Lab Dilution Factor | | | 1,5 | | | | | |

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Mallinckrodt pH Monitoring for SP010: October 2012

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 10/2/12 9:00 | 4.1 | 5 |
| 10/24/12 8:15 | 4.0 | 5 |
| 10/26/12 19:25 | 5.0 | 5 |
| 10/29/12 1:25 | 5.2 | 5 |
| 10/29/12 9:00 | 3.9 | 5 |
| | **October Total:** | **25** |

Mallinckrodt pH Monitoring for SP010: November 2012

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 11/4/12 15:25 | 5.5 | 5 |
| 11/12/12 10:20 | 4.4 | 5 |
| 11/13/12 8:00 | 5.0 | 5 |
| 11/13/12 16:25 | 4.4 | 5 |
| 11/19/12 13:10 | 5.4 | 5 |
| 11/19/12 22:10 | 4.8 | 5 |
| 11/20/12 9:05 | 4.8 | 5 |
| 11/20/12 9:10 | 14.0 | 25 |
| 11/20/12 9:40 | 5.0 | 15 |
| 11/23/12 18:10 | 5.0 | 5 |
| 11/26/12 9:40 | 4.0 | 5 |
| 11/26/12 22:45 | 11.5 | 5 |
| | **November Total:** | **90** |

Mallinckrodt pH Monitoring for SP010: December 2012

| Date / Time | pH | Total for Event in Minutes |
|---|---|---|
| 12/3/12 10:25 | 4.0 | 5 |
| 12/10/12 9:25 | 5.4 | 5 |
| 12/11/12 4:10 | 11.6 | 15 |
| 12/30/12 22:10 | 11.6 | 5 |
| | **December Total:** | **30** |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ___(JAN-MAR) ____(APR-JUNE) ____(JULY-SEPT) _X___(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | -----> | | **011** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | -----> | | 9/28/2012 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | -----> | | 0800 | | | | | | |
| PARAMETER | LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | | | | UNITS |
| FLOW | | E | 14,000 | | | | | | gal/day |
| Oil & Grease | 200 | G | Analytical results | | | | | | mg/l |
| Biochemical Oxygen Demand | **** | G | from overflow event | | | | | | mg/l |
| Chemical Oxygen Demand | **** | G | reported in CY2012 | | | | | | mg/l |
| Total Suspended Solids | **** | G | 3rd quarter report | | | | | | mg/l |
| Temperature | 60 | G | | | | | | | deg C |
| pH | 5.5 - 11.5 | G | see attached sheets | | | | | | S.U. |
| Lab Dilution Factor | | | NA | | | | | | |

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DIVISION OF
ENVIRONMENTAL COMPLIANCE

| Electrical Shutdown Manual pH Monitoring | | | |
|---|---|---|---|
| Date | Monday, October 1st, 2012 | | |
| Sample Point | **SP011** | | |
| | | | |
| Time | pH | | |
| 0000 | 9.52 | | |
| 0030 | 9.52 | | |
| 0100 | 9.28 | | |
| 0130 | 9.27 | | |
| 0200 | 9.42 | | |
| 0230 | 9.39 | | |
| 0300 | 9.38 | | |
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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

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Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3.1 Effective Date: 05-01-2011 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _____(JAN-MAR) ___(APR-JUN) _____(JULY-SEP) __X___(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | -----> | | **080** | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | -----> | | NA | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | -----> | | NA | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated | | | | | | UNITS |
| FLOW | | | | E | * | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | mg/L |
| n-Amyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | * | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | * | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | * | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | * | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Diethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | * | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | * | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | * | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | * | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | * | | | | | mg/L |
| Triethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | * | | | | | mg/L |
| | | | | | | | | | | |
| Oil & Grease | 1664 | 200 | | G | * | | | | | mg/L |
| Biochemical Oxygen Demand | | **** | | C | * | | | | | mg/L |
| Chemical Oxygen Demand | | **** | | C | * | | | | | mg/L |
| Total Suspended Solids | | **** | | C | * | | | | | mg/L |
| Temperature | | 60 | | G | * | | | | | deg C |
| pH | | 5.5 - 11.5 | | G | * | | | | | S.U. |

*** No flow from SP080 in 4th quarter 2012**

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

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Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: ____(JAN-MAR) _____ (APR-JUNE) _____(JULY-SEPT) _X___(OCT-DEC)

Samples Collected By: Mallinckrodt

Analysis Performed By: TEKLAB

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | -----> | | **905** | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | -----> | | 11/5/2012 | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | -----> | | 10:00 | | | |
| | MONTHLY LIMIT (ave) | DAILY MAX LIMIT | **RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW** G=grab,C=composite,M=measured flow,E=estimated flow | | | | |
| PARAMETER | (gm/day) | (gm/day) | | | Lab results mg/L | | UNITS |
| FLOW | | | M | 81392 | | | gal/day |
| 1,2,4-Trichlorobenzene | 74 | 301 | G | 2.46 | 0.008 | | gm/day |
| 1,2-Dichlorobenzene | 74 | 301 | G | 1.54 | 0.005 | | gm/day |
| 1,3-Dichlorobenzene | 54 | 144 | G | 1.54 | 0.005 | | gm/day |
| 1,4-Dichlorobenzene | 54 | 144 | G | 1.54 | 0.005 | | gm/day |
| 2-Nitrophenol | 25 | 87 | G | 4.93 | 0.016 | | gm/day |
| 2-Methyl-4,6-dinitrophenol | 30 | 105 | G | 4.93 | 0.016 | | gm/day |
| 4-Nitrophenol | 61 | 218 | G | 4.93 | 0.016 | | gm/day |
| Acenapthene | 7 | 18 | G | 2.46 | 0.008 | | gm/day |
| Anthracene | 7 | 18 | G | 2.46 | 0.008 | | gm/day |
| Bis(2-ethylhexyl)phthalate | 36 | 98 | G | 1.54 | 0.005 | | gm/day |
| Diethyl phthalate | 17 | 43 | G | 2.46 | 0.008 | | gm/day |
| Dimethyl phthalate | 7 | 18 | G | 2.46 | 0.008 | | gm/day |
| Di-n-butyl phthalate | 8 | 16 | G | 2.46 | 0.008 | | gm/day |
| Fluoranthene | 8 | 20 | G | 2.46 | 0.008 | | gm/day |
| Fluorene | 7 | 18 | G | 2.46 | 0.008 | | gm/day |
| Hexachlorobenzene | 74 | 301 | G | 2.46 | 0.008 | | gm/day |
| Hexachlorobutadiene | 54 | 144 | G | 2.46 | 0.008 | | gm/day |
| Hexachloroethane | 74 | 301 | G | 2.46 | 0.008 | | gm/day |
| Naphthalene | 7 | 18 | G | 2.46 | 0.008 | | gm/day |
| Phenanthrene | 7 | 18 | G | 2.46 | 0.008 | | gm/day |
| Pyrene | 8 | 18 | G | 2.46 | 0.008 | | gm/day |
| 1,1,1-Trichloroethane | 8 | 22 | G | 1.54 | 0.005 | | gm/day |
| 1,1,2-Trichloroethane | 12 | 48 | G | 1.54 | 0.005 | | gm/day |
| 1,1-Dichloroethane | 8 | 22 | G | 1.54 | 0.005 | | gm/day |
| 1,1-Dichloroethene | 8 | 23 | G | 1.54 | 0.005 | | gm/day |
| 1,2-Dichloroethane | 74 | 301 | G | 1.54 | 0.005 | | gm/day |
| 1,2-Dichloropropane | 74 | 301 | G | 1.54 | 0.005 | | gm/day |
| Benzene | 22 | 51 | G | 0.62 | 0.002 | | gm/day |
| Carbon Tetrachloride | 54 | 144 | G | 1.54 | 0.005 | | gm/day |
| Chlorobenzene | 54 | 144 | G | 1.54 | 0.005 | | gm/day |
| Chloroethane | 42 | 112 | G | 3.08 | 0.010 | | gm/day |
| Chloroform | 42 | 123 | G | 1.54 | 0.005 | | gm/day |
| Chloromethane | 42 | 112 | G | 3.08 | 0.010 | | gm/day |
| cis-1,3-Dichloropropene | 74 | 301 | G | 1.54 | 0.005 | | gm/day |
| Ethylbenzene | 54 | 144 | G | 1.54 | 0.005 | | gm/day |
| Methylene Chloride | 14 | 64 | G | 1.54 | 0.005 | | gm/day |
| Nitrobenzene | 847 | 2423 | G | 2.46 | 0.008 | | gm/day |
| Tetrachloroethene | 20 | 62 | G | 1.54 | 0.005 | | gm/day |
| Toluene | 11 | 28 | G | 1.54 | 0.005 | | gm/day |
| trans-1,2-Dichloroethene | 9 | 25 | G | 1.54 | 0.005 | | gm/day |
| trans-1,3-Dichloropropene | 74 | 301 | G | 1.54 | 0.005 | | gm/day |
| Trichloroethene | 10 | 26 | G | 1.54 | 0.005 | | gm/day |
| Vinyl Chloride | 37 | 65 | G | 0.62 | 0.002 | | gm/day |
| | | | | | | | |
| | | | | | | | |
| Shaded values represent detection limits | | | | | | | |
| | | | | | | | |
| Lab Dilution Factor | | | | 1 | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **Mallinckrodt Inc.**

Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015

Premise Address: 3600 North Second St., St. Louis, MO 63147

Monitoring Period: _____(JAN-MAR) _____(APR-JUNE) _____(JULY-SEPT) _X___(OCT-DEC)

Samples Collected By: Mallinckrodt Inc

Analysis Performed By: TEKLAB

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

| MSD SAMPLE POINT REFERENCE NUMBERS | -----> | | 912 | | 912 | | 912 | |
|---|---|---|---|---|---|---|---|---|
| DATES ON WHICH SAMPLES WERE COLLECTED | -----> | | 10/3/2012 | | 11/3/2012 | | 12/10/2012 | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | -----> | | 910 | | 900 | | 920 | |
| PARAMETER | LIMIT | RECORD SAMPLE TYPES (G,C,M OR E) & RESULTS BELOW G=grab,C=composite,M=measured flow,E=estimated flo | | | | | | UNITS |
| FLOW | | M | 56718 | M | 2461 | M | 56879 | gal/day |
| | | | | | | | | |
| DMAC (daily max) | 7091 | C | 1397 | C | 48 | C | 1159 | lb/day |
| DMAC (monthly average) | 5459 | C | 1397 | C | 48 | C | 1159 | lb/day |
| | | | | | | | | |
| | | | 6.5074 | | 5.1530 | | 5.3835 | mg/L |
| Lab Dilution Factor | | | 2 | | 2 | | 2 | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) _X___(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **915** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 10/12/2012 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 0900 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Chloroform | 524.2 | 0.10 | 0.03 | G | <0.02 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Diethyl amine* | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Triethyl amine* | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.26 | | | | | | mg/L |
| ** Annual monitoring requirement - Diethyl amine and Triethyl amine were reported first quarter 2012* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) _X__(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **920** | | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 10/22/2012 | | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 0830 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 13,000 | E | | | | | | gal/day |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.400 | G | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.100 | G | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PART I: IDENTIFYING INFORMATION**

Company Name: **MALLINCKRODT INC.**
Permit No.: 2112059600 - 3 Effective Date: 06-01-2010 Expiration Date: 05-31-2015
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) _X___(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 927 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 11/5/2012 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED * | | | ----> | | 1300 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 2,700 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) _X___(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | 930 | | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 12/18/2012 | | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1230 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 650 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: _____(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) _X___(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | 933 | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 10/28/2012 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 0500 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 100 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | 0.486 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) _X___(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By:

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **935** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | NA | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | * | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Chloroform | 524.2 | 0.10 | 0.03 | G | * | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | * | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | * | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | * | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | * | | | | | | mg/L |
| Diethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| Triethyl amine | 1671 | 255.00 | 100.00 | G | * | | | | | | mg/L |
| | | | | | | | | | | | |
| **** No PEG flow this quarter*** | | | | | | | | | | | |
| Dilution by lab | | | | | | | | | | | |

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METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

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**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) _____(APR-JUN) ____(JULY-SEP) _X___(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **936** | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 11/5/2012 | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1100 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | UNITS |
| FLOW | | | | E | 16,500 | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Benzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| n-Butyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Chlorobenzene | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Chloroform* | 524.2 | 0.10 | 0.03 | G | <0.02 | | | | | | mg/L |
| 1,2-Dichlorobenzene | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| 1,2-Dichloroethane | 524.2 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Diethyl amine** | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| n-Heptane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| n-Hexane | 1666 | 3.00 | 0.70 | G | <0.2 | | | | | | mg/L |
| Isobutyraldehyde | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Isopropyl ether | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | mg/L |
| Methyl formate | 1666 | 20.70 | 8.20 | G | <1.0 | | | | | | mg/L |
| 4-Methyl-2-pentanone | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | mg/L |
| Tetrahydrofuran | 1666 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | <0.1 | | | | | | mg/L |
| Triethyl amine** | 1671 | 255.00 | 100.00 | G | ** | | | | | | mg/L |
| Xylenes | 1666 | 3.00 | 0.70 | G | <0.26 | | | | | | mg/L |
| | | | | | | | | | | | |
| *** Chloroform Results** | **Raw Water** | **SP936** | **SP936- Raw Water** | | | | | | | | |
| **11/5/2012** | **<0.02 mg/l** | **0.020 mg/l** | **0.02** | | | | | | | | |
| | | | | | | | | | | | |
| ***Results above reported as the difference between SP936 and Raw Water.*** | | | | | | | | | | | |
| *** Annual monitoring requirement - Diethyl amine and Triethyl amine were reported first quarter 2012* | | | | | | | | | | | |
| Shaded values represent detection limits. | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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2012 3Q SP9XX PEG.xlsx

METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) _X___(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TEKLAB

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSD SAMPLE POINT REFERENCE NUMBERS | | | ----> | | 937 | | | | | | |
| DATES ON WHICH SAMPLES WERE COLLECTED | | | ----> | | 10/19/2012 | | | | | | |
| TIMES AT WHICH SAMPLES WERE COLLECTED | | | ----> | | 0800 | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | UNITS |
| FLOW | | | | E | 23,000 | | | | | | gal/day |
| Tetrahydrofuran | 524.2 | 9.20 | 3.40 | G | <0.4 | | | | | | mg/L |
| Toluene | 524.2 | 0.30 | 0.20 | G | 0.0212 | | | | | | mg/L |
| Shaded values represent detection limits | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | |

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JAN 28 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

METROPOLITAN ST. LOUIS SEWER DISTRICT
2012 INDUSTRIAL USER SELF MONITORING REPORT

**PLEASE READ THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT**

**PART I: IDENTIFYING INFORMATION**

Company Name: Mallinckrodt Inc.
Permit No.: 2112059600 - 3
Premise Address: 3600 North Second St., St. Louis, MO 63147
Monitoring Period: ____(JAN-MAR) ____(APR-JUN) ____(JULY-SEP) __X__(OCT-DEC)
Samples Collected By: Mallinckrodt Inc
Analysis Performed By: TekLab

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

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSD SAMPLE POINT REFERENCE NUMBERS** | | | ----> | | **938** | | | | | | | |
| **DATES ON WHICH SAMPLES WERE COLLECTED** | | | ----> | | 12/10/2012 | | | | | | | |
| **TIMES AT WHICH SAMPLES WERE COLLECTED** | | | ----> | | 1200 | | | | | | | |
| PARAMETER | EPA METHOD | DAILY MAX | AVG MONTHLY | **RECORD SAMPLE TYPES (G, C, M OR E) & RESULTS BELOW** G=Grab, C-composite, M=measured flow, E=estimated flow | | | | | | | | UNITS |
| FLOW | | | | E | 71 | | | | | | | gal/day |
| Acetone | 524.2 | 20.70 | 8.20 | G | <1.0 | | | | | | | mg/L |
| n-Amyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Ethyl Acetate | 1666 | 20.70 | 8.20 | G | <0.2 | | | | | | | mg/L |
| Isopropyl acetate | 1666 | 20.70 | 8.20 | G | <0.1 | | | | | | | mg/L |
| Methylene chloride | 524.2 | 3.00 | 0.70 | G | <0.1 | | | | | | | mg/L |
| Shaded values represent detection limits. | | | | | | | | | | | | |
| Dilution by lab | | | | | 20 | | | | | | | |

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JAN 28 2013

DIVISION OF
ENVIRONMENTAL COMPLIANCE

MSD

**TO:** Chris Verplancke - Finance Department

**FROM:** Steven M. Grace – DEC SMG

**DATE:** January 28, 2013

**RE:** **Wastewater User Charge Billing for Special Discharge**

Please bill, by invoice, the following charges applicable to an on-site special discharge approved in our letter dated October 30, 1998, as modified in letters dated November 20, 1998, July 19, 1999, March 28, 2001, October 13, 2004, June 19, 2006, May 22, 2008, May 10, 2010, and May 24, 2012. The discharge dates and quantity are from information submitted by Sharon Cotner, Corps of Engineers, in a letter dated January 23, 2013.

This charge is based on the rates in MSD Wastewater User Charge Ordinance 13042.

**PARTY TO BILL:** Larry Joellenbeck
The Shaw Group Inc.
1 Angelrodt Street
St. Louis, MO 63147

**BILLING IS FOR:** On-Site Special Discharge

**DISCHARGE PERIOD:** October through December 2012

**SOURCE OF WASTE:** Treated construction water from the St. Louis Downtown FUSRAP Site located at Mallinckrodt, Inc., 3600 N. Second Street, St. Louis, Missouri.

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| 10/1/12 - 12/31/12 | Volume | 250 | CcF | $2.28 | $570.00 |
| Totals: | --- | 250 | CcF | --- | $570.00 |

If you have any questions, please call me on extension 8755.

bv

pc: Becky Bartholomew – Finance Dept.
Mary Wimsatt – Finance Dept.
Laura Joiner – Finance Dept.
Brian Gibson
Doug Mendoza
Larry Joellenbeck, The Shaw Group Inc., 1 Angelrodt St., St. Louis, MO 63147

File: IU, MALLINCKRODT INC ~~[2412059600]~~
1017281-00

**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

MSD

January 18, 2013

Julie Summers
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

**Re: Wastewater User Charge Billing for Special Discharge**

Dear Ms. Summers:

This is to advise you of the wastewater user charges applicable to an on-site special discharge approved in our original letter to you dated January 21, 2011, and extensions dated January 13, 2012, July 16, 2012, and December 3, 2012. The discharge dates and quantities are from information submitted by you in an email dated January 17, 2012.

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 13402. Please note that, as of July 1, 2012, the volume charge of $2.28 per 100 cubic feet of wastewater became effective.

**PARTY TO BILL:** Addressee

**BILLING IS FOR:** On-Site Special Discharge

**DISCHARGE PERIOD:** October, November, December 2012

**SOURCE OF WASTE:** Fifteen batches of treated rainwater and groundwater from the remediation of the Columbium-Tantalum (CT) decommissioning project at the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri.

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| October 2012 | Volume | 268 | CcF | $2.28 | $611.04 |
| November 2012 | Volume | 695 | CcF | $2.28 | $1,584.60 |
| December 2012 | Volume | 535 | CcF | $2.28 | $1,219.80 |
| **Totals:** | ------ | 1,498 | CcF | ----- | $3,415.44 |

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 - Finance Dept.
Becky Bartholomew – Finance Dept.
Laura Joiner – Finance Dept.
Doug Mendoza
Brian Gibson

File: IU, MALLINCKRODT INC ~~[2112059800]~~, 3600 North Second Street, St. Louis, Missouri
10117281-00

## Summary of CT Excavation Wastewater Discharges
## Mallinckrodt St. Louis Plant

| | Date of Discharge | Volume Discharged (gallons) |
|---|---|---|
| Discharge ES013 | 10/29/2012 | 60,000 |
| Discharge ES014 | 10/30/2012 | 60,000 |
| Discharge ES015 | 10/31/2012 | 80,000 |
| Discharge ES016 | 11/1/2012 | 60,000 |
| Discharge ES017 | 11/5/2012 | 80,000 |
| Discharge ES018 | 11/6/2012 | 80,000 |
| Discharge ES019 | 11/8/2012 | 80,000 |
| Discharge ES020 | 11/9/2012 | 80,000 |
| Discharge ES021 | 11/16/2012 | 80,000 |
| Discharge ES022 | 11/19/2012 | 60,000 |
| | TOTAL | 720,000 |

## Summary of CT Excavation Wastewater Discharges
## Mallinckrodt St. Louis Plant

| | Date of Discharge | Volume Discharged (gallons) |
|---|---|---|
| Discharge ES023 | 12/6/2012 | 80,000 |
| Discharge ES024 | 12/8/2012 | 80,000 |
| Discharge ES025 | 12/13/2012 | 80,000 |
| Discharge ES026 | 12/14/2012 | 80,000 |
| Discharge ES027 | 12/19/2012 | 80,000 |
| | TOTAL | 400,000 |

**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

MSD

January 17, 2013

Amber Crouch
**MALLINCKRODT**
3600 North Second St.
St. Louis, MO 63147

**Re: Wastewater User Charge Billing for Special Discharge**

Dear Ms. Crouch:

This is to advise you of the wastewater user charges applicable to an on-site special discharge approved in our letter to you dated January 2, 2013. That charge was determined using the ethylene glycol concentration in your application for special discharge. The discharge dates and quantities are from information submitted by you in an email dated January 17, 2013.

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 13042. 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:** January 12, 2013

**SOURCE OF WASTE:** 28% ethylene glycol solution from Building 250 of the Mallinckrodt facility located at 3600 North Second Street, St. Louis, Missouri.

| Discharge Period | Billing Item | Quantity | Units | Rate | Charge |
|---|---|---|---|---|---|
| 1/12/13 | Extra-Strength Surcharge | 1,300 | Gal | $0.36 | $468.00 |
| **Total:** | ------ | **1,300** | Gal | ----- | **$468.00** |

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 - Finance Dept.
Becky Bartholomew – Finance Dept.
Mary Wimsatt – Finance Dept.
Laura Joiner – Finance Dept.
Doug Mendoza
Brian Gibson

10117281-00

File: IU, MALLINCKRODT INC [2112059600], 3600 North Second Street

## Steve Grace

**From:** Crouch, Amber <Amber.Crouch@Covidien.com>
**Sent:** Thursday, January 17, 2013 10:58 AM
**To:** Steve Grace
**Subject:** Mallinckrodt Special Discharge Permit dated 1/2/2013

Steve,

The glycol discharge from Building 250 has taken place. See below.

Date of discharge: January 12th, 2013
Start time: 0730
End time: 1130
Volume of discharge: 1300 gallons

Please let me know if you have any additional questions or require additional information.

Thanks,

Amber Crouch
Senior HSE Engineer
Covidien
3600 North Second Street
St. Louis, MO 63147
USA

(314) 654-0127 office
(314) 253-2213 pager
(314) 654-1251 fax

www.covidien.com

This information may be confidential and/or privileged. Use of this information by anyone other than the intended recipient is prohibited. If you receive this in error, please inform the sender and remove any record of this message.

MSD

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL FACILITY INSPECTION REPORT

Company: Mallinckrodt, LLC  Account #: 1011728100
Premise Address: 3600 N. 2nd St.  Zip Code: 63147
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: Amber Crouch
Title: Senior HSE Engineer  Phone#: 314-654-0127
Inspector: Jason Gill
Others Present: None
Inspection Date: 12/18/12 Time: From 8:35 AM To 1:05 PM (Last Insp. 12/28/11)

**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: _____
   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? | Frequency of DISCHARGE | Sample pt. |
|---|---|---|---|---|
| Chemical systhesis & extraction of pharmaceutical drugs | Batch | Yes | Daily | Multiple SP's |
| Stearate mfg. | Batch | Yes | Daily | 905 |
| Imaging compound mfg. | Batch | Yes | Daily | 912 |
| Inorganic compound mfg. | Batch | Yes | Daily | 010 |
| Pharmaceutical dosage mfg. | Batch | Yes | Daily | 938 |
| Laboratory waste | Batch | Yes | Daily | 010, 003, 099 |
| Kitchen waste | Batch | Yes | Daily | 010 |

3. PRETREATMENT (other than grease traps) - describe:

| | Sample pt. |
|---|---|
| pH adjustment | 010, 005, 080, 912, 930, 933 |
| Steam stripping (PEG systems 1 & 2), methanol stripping | 920, 935, 937 |
| Oil interceptor | 010, 003 |

4. DOES COMPANY HAVE ANY GREASE TRAPS? Yes☐ No☒
   If yes: A. List sample points: _____
   B. What is the frequency for cleaning & maintenance? _____
   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 Building 530, or Central Utility Plant, is now operational. All wastewater discharge goes to existing SP010.

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.)

D. Comments: _____

7. ARE THERE ANY FEDERALLY REGULATED (40 CFR 405-471) OPERATIONS? Yes☒ No☐

If yes: A. List regulation & describe (including any discharge):
40 CFR 439 Sub B,C,D (Sub E N/A, no stds) PSES - pharmaceutical systhesis & extraction - wastewater goes through PEG PT system prior to discharge; 414 Sub G&H PSES - stearates, discharge to sewer; 415 Sub B&K PSES (no stds) - inactive zinc sulfate process

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)

8. HAS COMPANY CERTIFIED TO THE ABSENCE OF SPECIFIC CATEGORICAL POLLUTANTS? Yes☒ No☐

If yes: A. Certification date: 4/5/10

B. List absent pollutants: Certain 439 pollutants: diethylamine, triethylamine, cyanide

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. Comments: _____

9. 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? _____

10. IS ANY WASTEWATER SUBJECT TO PRODUCTION ☐ OR MASS ☒ BASED STANDARDS? Yes☒ No☐

If yes: A. At which points? 905 & 912

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: _____

11. ARE ANY RADIOACTIVE MATERIALS HANDLED? Yes☒ No☐

If yes: A. Describe operations & disposal: Soil remediation (FUSRAP) still continues at the back of the property; CT remediation of runoff still occurs at Plant 5 from contaminated soil in this area.

B. Does company have MSD authorization for disposal to sewer? NA☐ Yes☒ No☐

C. Most recent authorization date: 7/8/94

D. Amount discharged in most recent complete calendar year: 2.48221 MCI

12. 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: _____

13. 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:
Pharmaceutical mfg. processes at this facility are on a large scale and are very water-intensive. There did not appear to be any excessive usage during the inspection walkthrough.

14. BASED ON OBSERVATIONS DURING INSPECTION, DOES COMPANY APPEAR TO HAVE SOME WATER THAT IS NOT DISCHARGED TO SEWER? Yes☒ No☐

If yes: A. Describe: Water in pharmaceutical products and evaporative loss, liquid waste hauled off site

B. Was "Return Factor Program" brochure given to company? Yes☒ No☐
(regardless of whether some water is not discharged to sewer)

15. 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)

16. 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? ☐

17. 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 |
|---|---|---|---|---|
| pH | 11/20/12 | 002 | Yes | Dishwashing detergent was the cause - they do use this type of detergent anymore. |
| Zinc | 5/11/12 | 010 | Yes | The source of the zinc exceedance could not be determined, but resamples showed a return to compliance. |
| | | | N/A | |
| | | | N/A | |
| | | | N/A | |

B. Comments: _____

18. 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: _____

19. 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: _____

20. 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?
Spill kits are located throughout the facility, and a 24-Hr. emergency team is on hand at all times. Hazardous waste is stored in a containment area that slopes to a sump system and has a roof overhead.

21. 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☐

22. DOES COMPANY HAVE ANY WRITTEN SLUG DISCHARGE CONTROL (INCLUDES SPILLS) PLANS? Yes☒ No☐

If yes:
A.

| | Title (actual title, NOT "SPCCP") | Last Update |
|---|---|---|
| 1. | SPCC Plan | 3/1/10 |
| 2. | Spill & Slug Discharge Control Plan | 3/1/10 |

B. Were Plans reviewed for completeness, especially regarding batch discharges/slugs and Q.17 & 18? (must be done) Yes☒ No☐
C. Are updates needed to existing Plans? (If yes, write company & require) Yes☐ No☒
D. Are any Plans needed (in addition to those listed in Part A)? (If yes, write company & require) Yes☐ No☒
E. Explain why/why not for C or D: _____

23. DOES COMPANY HAVE ANY MAINTENANCE SHOP PARTS WASHERS? Yes☒ No☐

If yes:
A. Parts washer solvent name: Crystal Clean parts washing solvent
B. Priority pollutants (or "none"): Typically BTEX
C. How is spent solvent disposed? Hauled off site by Crystal Clean
(These solvents are not included in database's priority pollutants list, nor monitored for unless conditions show potential discharges)

24. 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? |
|---|---|---|---|---|
| (see attached solvent list) | Extraction & systhesis | Yes☐ No☒ | Hauled off site or destroyed on site in PEG air strippers | Yes☒ No☐ |
| | | Yes☐ No☐ | | Yes☐ No☐ |
| | | Yes☐ No☐ | | Yes☐ No☐ |
| | | Yes☐ No☐ | | Yes☐ No☐ |
| | | Yes☐ No☐ | | Yes☐ No☐ |
| | | Yes☐ No☐ | | Yes☐ No☐ |

25. 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)

26. 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)

27. 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, 912 monthly
D. How frequently are reports required? Quarterly
E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐
F. If no, explain: _____

28. 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: _____

29. DOES COMPANY CONTINUOUSLY MONITOR AT SAMPLE POINT AND KEEP A PERMANENT RECORD FOR: pH ☒, TEMP ☐, LEL ☐? Yes☒ No☐

If yes:
- A. At which SPs? 010
- B. Does company submit quarterly summaries? Yes☒ No☐
- C. If no, explain: _____

30. 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: _____

31. 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: Continuous pH monitoring & radiation discharge report
- C. What is required to be reported? see above
- D. How frequently are reports required? Quarterly
- E. Have reports been on-time, complete & signed by proper person? Yes☒ No☐
- F. If no, explain: _____

32. 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: _____

33. ASK COMPANY: IS COMPANY IN COMPLIANCE W/APPLICABLE NESHAP REGULATIONS FOR WW DISCHARGES? Yes☒ No☐
[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☐

34. 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? HSE Library, Bldg Z, 4th floor

35. 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? 40 CFR 439 Sub B,C,D; 414 Sub G&H; 415 Sub B&K

☒ Process discharge => 25,000 GPD Total process volume: 794,000 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? _____

36. 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: _____

37. 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: _____

38. 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☐

39. SAMPLE POINTS DJ(y/n)

| | | | | | | |
|---|---|---|---|---|---|---|
| SP # | | Fed.Reg. | | Components: | (refer to list on IDS attached to report) | N/A |
| SP # | | Fed.Reg. | | Components: | | N/A |
| SP # | | Fed.Reg. | | Components: | | N/A |
| SP # | | Fed.Reg. | | Components: | | N/A |
| SP # | | Fed.Reg. | | Components: | | N/A |

40. ARE ANY SAMPLE POINTS TRAPPED VENTS? Yes☐ No☒

If yes: A. List SPs: _____

B. Was co. informed that T-vents are preferred, and told why? Yes☐ No☐

41. ARE DISCHARGES AT ANY SPs SMALL/IRREGULAR ENOUGH TO ALLOW GRAB SAMPLES? Yes☒ No☐

If yes: A. List SPs and reasons: 001 - low flow from sanitary only source

42. ARE THERE ANY UNSAMPLED DISCHARGES? (list each lateral separately) Yes☐ No☒

| | | | |
|---|---|---|---|
| Dummy SP # | | Components: | |
| Dummy SP # | | Components: | |

43. DO ANY SAMPLE POINTS (including Unsampled/Dummy SPs) RECEIVE STORMWATER? Yes☒ No☐

If yes: A. List Sample Points: 001, 003, 008, 009, 010, 011, 080, 099

44. WERE ALL SAMPLE POINTS (except Dummy SPs) OPENED & INSPECTED? No SPs☐ Yes☐ No☒

A. If any SPs cannot be located or opened, explain: We could not access SP001 due to a train stopping on the tracks in the back of the property

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☐

45. REVIEW THE SAMPLE POINT MAP! Last map revision date: 7/2/12

A. Is the map correct and accurate in all its details? Yes☐ No☒

B If no, what changes are needed: Remove SP935

46. DO INSTRUCTIONS FOR "Contact Prior to Sampling" or FIELD VISIT "Special Instructions" NEED REVISION? Yes☒ No☐

If yes: A. List needed changes: Added "SP011: upstream overflow point - check w/ contact to see if overflow is occurring"

USE THIS SPACE FOR ANY OTHER COMMENTS/OBSERVATIONS PERTINENT TO YOUR INSPECTION OF THIS SITE.

Acrolein is found present in one of the QC labs in Bldg 250 - it has been switched to KP in PIMS. Acrylonitrile is not present at the facility - it has been switched from SP to KA.

Old Bldg C, which was the former utility plant, is no longer operational. It has been replaced by the new Building 530, which is called the Central Utility Plant. The main boilers, chillers and coolint towers are located in this building. Wastewater discharge ties into existing sewers and goes through the main outfall at SP010. Cooling tower blowdown has been added as a discharge component at SP010, and it is estimated to be a 1,224 GPD daily discharge.

Mallinckrodt has requested removal of SP935, which is the sample point for the methanol stripper. There has been no discharge of pharmaceutical wastewaters through this sample point, before, and there are no plans to utilize the discharge point in the future. The permit will be modified to remove SP935, and the map has been updated to reflect the changes as well.

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**INDUSTRIAL USER CLASSIFICATIONS**

| | |
|---|---|
| 03/06/1997 | SIU |
| 03/06/1997 | CIU |
| 03/06/1997 | SURC |
| 03/06/1997 | TOX |

**WUNNENBERG INFO**

**Base Map** 17D4
**Wun:**St. Louis City & Co.
**Grid:** E 18 Page 27

**SIU CRITERIA**

CAT Process subject to Cat Stds under 40 CFR 40
PR25 Process Disch => 25,000 GPD

**GENERAL INFORMATION**

**Office Mailing Address**
3600 N. 2nd Street
St. Louis, MO. 63147

**Billing Address**
3600 N. 2nd St.
St. Louis, MO. 63147

**INSPECTION INFORMATION**

**Next Due**
**Insp Rslt**
12/18/2012 RIN Jason Gill

**PERMIT INFORMATION**

**Issue Date:** 06/01/2010
**Expire Date:** 05/31/2015
**Extended Date:** 04/30/2011
**Writer** Scott Rehmer
**Issue Date:** 05/01/2011
**Expire Date:** 05/31/2015
**Extended Date:**
**Writer** Scott Rehmer

**IUQ INFORMATION**

**IUQ Recvd Date:** 08/31/1999
**Reviewer:** Fabian Grabski
**IUQ Recvd Date:** 10/04/2004
**Reviewer:** Jason Gill
**IUQ Recvd Date:** 12/01/2009
**Reviewer:** Jason Gill

**CONTACTS**

| | | | | |
|---|---|---|---|---|
| BILL | Amber Crouch | Senior HSE Engineer | OFF | (314) 654-0127 Ext. |
| FLD1 | Amber Crouch | Senior HSE Engineer | FAX | (314) 654-1251 Ext. |
| | Amber Crouch | Senior HSE Engineer | SWR | (314) 654-2000 Ext. |
| | Amber Crouch | Senior HSE Engineer | OFF | (314) 654-0127 Ext. |
| FLD2 | Julie Summers | Environmental Manager | CELL | (314) 486-3767 Ext. |
| | Julie Summers | Environmental Manager | OFF | (314) 654-1969 Ext. |
| OFF1 | Amber Crouch | Senior HS&E Engineer | OFF | (314) 654-0127 Ext. |
| OFF2 | Julie Summers | Environmental Manager | CELL | (314) 486-3767 Ext. |
| | Julie Summers | Environmental Manager | OFF | (314) 654-1294 Ext. |

**OPERATIONAL INFORMATION**

**Work Days:** 7

| | | | | S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 660 | 07:00AM | 8.0 | Y | Y | Y | Y | Y | Y | Y |
| 2 | 70 | 03:20PM | 8.0 | Y | Y | Y | Y | Y | Y | Y |
| 3 | 70 | 11:10PM | 8.0 | Y | Y | Y | Y | Y | Y | Y |

**Total Emp:** 800 **Hrs:** 24.0

**OTHER AGENCIES INFORMATION**

| | | |
|---|---|---|
| 11/18/1996 | MDNR - Hazardous Waste Program | 01029 |
| 11/19/1996 | EPA - Hazardous Waste Program | MOD096726484 |
| 11/01/1997 | Nuclear Regulatory Commission | 24-05804-02 |
| 09/28/2005 | MSD - Billing Account Number | 00118821 |

**NON-SEWERED WASTE**

**On-Site Storage** Y **On-Site Disposal** N **Off-Site Disposal** Y

| | | | |
|---|---|---|---|
| 12/01/2009 | Solvents/Thinners | 1,109,000 | LBS |
| 12/01/2009 | Paints or Paint Sludges | 1,400 | LBS |
| 12/01/2009 | Equipment Oils and/or Grease | 16,000 | LBS |
| 12/01/2009 | Acids and/or Alkalies | 1,428,000 | LBS |
| 12/01/2009 | Infectious Waste | 600 | LBS |
| 12/01/2009 | Kitchen/Food Service Grease | 1,000 | LBS |
| 12/01/2009 | Organic Compounds | 781,600 | LBS |

**COMMENTS**

**RAW MATERIALS**

| EFF DATE | MATERIAL_DESCRIPTION | QUANTITY | UNIT |
|---|---|---|---|

**SIC INFORMATION**

| SIC | DESCRIPTION |
|---|---|
| 2816 | Inorganic Pigments |
| 2819 | Industrial Inorganic Chemicals, N.E.C. |
| 2833 | Medicinal Chemicals & Botanical Products |
| 2834 | Pharmaceutical Preparations |
| 2835 | In Vitro & In Vivo Diagnostic Substances |
| 2869 | Industrial Organic Chemicals, N.E. C. |

Report No. PIMS012A 03/19/2013 9:48:52 am
Data Date & Time: 03/19/2013 9:48:52 am

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**PRODUCTS**

| EFF DATE | DESCRIPTION | UNIT | AVG_PROD | MAX_PROD |
|---|---|---|---|---|
| 05/07/2004 | Industrial chemicals | | | |
| 05/07/2004 | FDA drugs | | | |

**SEWER ACCOUNTS**

**Sewer Accounts**
1011728100

**WATER CONSUMPTION AND WASTEWATER DISCHARGE**

**Start Date =** 01/01/2012 12:00:00AM **End Date =** 12/31/2013 12:59:59PM **Wdays** **Cdays**

| Acct. No. | | | Consumption | | | | | Discharge | |
|---|---|---|---|---|---|---|---|---|---|
| **1011728100** | | | **CCF's** | **Gallons** | | | | **Gal/ Wday** | **Gal/ Cday** |
| 1011728100 | 12/15/2011 | 04/06/2012 | 113,809 | 113,809 | A | 114 | 114 | 114 | |
| 1011728100 | 04/07/2012 | 07/02/2012 | 131,193 | 245,002 | | 87 | 87 | 201 | |
| 1011728100 | 07/03/2012 | 10/01/2012 | 223,733 | 468,735 | | 91 | 91 | 292 | |
| 1011728100 | 10/02/2012 | 01/07/2013 | 65,744 | 534,479 | | 98 | 98 | 390 | |
| **RF** | 0.96 | **Acct. Total** | 534,479 | 399,818,085 | | 390 | 390 | 984,168 | 984,168 |
| | | **Facility Total** | 534,479 | | | | | | |

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

### CONNECTION and SAMPLE POINT INFORMATION

| LATERAL NO. | Lateral Type | DSMH | | Treatment Area | Bissell Point |
|---|---|---|---|---|---|
| 01 | Sanitary Or Combined | 17D3 | 028C | Trunk Sewer | 10 - Salisbury |

**Description** Multiple lines from buildings in Plant 6E, East into 12" line

**Sewer Route** Discharge to Destrehan St and to Salisbury trunk

**SAMPLE POINT NO.** 001 Ordinance **NPDES Outfall No.**

**Description** MH (Gatewell) at foot of Destrahan 100' E of RR

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Sanitary | | 1,000 | GPD | | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 12/1/09 |
| Condensate | from steam generator, Bldg 250 | 10 | Gal/Wk | 10 | Gal/Wk | D | 5/9/12 |
| | **Total Flow Avg =** | **1,010** | | **Max =** | **10** | | |

### CONNECTION and SAMPLE POINT INFORMATION

| LATERAL NO. | Lateral Type | DSMH | | Treatment Area | Bissell Point |
|---|---|---|---|---|---|
| 02 | Sanitary Or Combined | 17D4 | 072C | Trunk Sewer | 10 - Salisbury |

**Description** 6" line SW from Building 96 to Salisbury St

**Sewer Route** East on Salisbury across Hall St. in 5' brick sewer to trunk, N to treatment plant

**SAMPLE POINT NO.** 002 Ordinance **NPDES Outfall No.**

**Description** MH 5' S of bldg #96, 30' E of SP 003, (6" pipe from NE, 3' down)

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Sanitary | | 2,200 | GPD | | GPD | D | 12/1/09 |
| | **Total Flow Avg =** | **2,200** | | **Max =** | | | |

### CONNECTION and SAMPLE POINT INFORMATION

| LATERAL NO. | Lateral Type | DSMH | | Treatment Area | Bissell Point |
|---|---|---|---|---|---|
| 04 | Sanitary Or Combined | 17D4 | 086C | Trunk Sewer | 10 - Salisbury |

**Description** 6" line West from Bldg 98 to Broadway

**Sewer Route** South on Broadway in 27" pipe to Salisbury, E across Hall St. in 5' brick sewer to trunk, N to treatment plant

**SAMPLE POINT NO.** 080 Combined (Ord/Cat) **NPDES Outfall No.**

**Description** Inlet to sump (double MH) N of building #98

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (CN-no, NH3 exempt) (CWF-no) | 2,500 | GPD | | GPD | R | 12/1/09 |
| Laboratory Waste | | 1,000 | GPD | | GPD | U | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 11/23/10 |
| | **Total Flow Avg =** | **3,500** | | **Max =** | | | |

### CONNECTION and SAMPLE POINT INFORMATION

| LATERAL NO. | Lateral Type | DSMH | | Treatment Area | Bissell Point |
|---|---|---|---|---|---|
| 05 | Sanitary Or Combined | 17D4 | 071C | Trunk Sewer | 10 - Salisbury |

**Description** 8" pipe South from Bldg 96 to Salisbury

**Sewer Route** East on Salisbury across Hall St. in 5' brick sewer to trunk, N to treatment plant

**SAMPLE POINT NO.** 005 Ordinance **NPDES Outfall No.**

**Description** MH 5' S of building #96, 30' E of SP 003 (Center pipe, 8" dia., 3' down)

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Non Contact Cooling Water | | 1,000 | GPD | | GPD | D | 12/1/09 |
| Laboratory Waste | R&D waste (including 439 from bldg 96) | 31,000 | GPD | | GPD | D | 12/1/09 |
| | **Total Flow Avg =** | **32,000** | | **Max =** | | | |

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | Treatment Area | Bissell Point |
|---|---|---|---|---|
| 06 | Sanitary Or Combined | 17D4 066C | Trunk Sewer | 10 - Salisbury |

**Description** 15" line from Pump St overflow chamber North to Salisbury

**Sewer Route** East on Salisbury across Hall St. in 5' brick sewer to trunk, N to treatment plant

**SAMPLE POINT NO. 008** Ordinance **NPDES Outfall No.**

**Description** Oveflow chamber on N side of pump station on W side of building T

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Emergency Bypass | Pump station bypass to Salisbury trunk | 0 | GPD | 1,440,000 | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 12/1/09 |
| | **Total Flow Avg =** | **0** | | **Max =** | **1,440,000** | | |

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | Treatment Area | Bissell Point |
|---|---|---|---|---|
| 10 | Sanitary Or Combined | 17D4 436C | Trunk Sewer | 04 - Interceptor Tunnel |

**Description** 18" line North from neutralization system

**Sewer Route** E to Interceptor Tunnel, N to treatment plant

**SAMPLE POINT NO. 010** Ordinance **NPDES Outfall No.**

**Description** MH w/square lid 50' N of neutralization control building at Hall & Salisbury

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Regeneration/Reject Water | | 86,900 | GPD | | GPD | D | 12/1/09 |
| Boiler Blowdown | | 85,000 | GPD | | GPD | D | 12/1/09 |
| Categorical | SP's 905,912,915,920,927,930,933,935,936,937,938 | 184,721 | GPD | | GPD | R | 12/1/09 |
| Non-Categorical Process Waste | | 441,792 | GPD | | GPD | D | 12/1/09 |
| Non Contact Cooling Water | | 149,000 | GPD | | GPD | D | 12/1/09 |
| Plant & Equipment Washdown | | 50,000 | GPD | | GPD | D | 12/1/09 |
| Sanitary | | 75,000 | GPD | | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 12/1/09 |
| Laboratory Waste | | 68,000 | GPD | | GPD | D | 12/1/09 |
| Kitchen Waste | | 2,500 | GPD | | GPD | D | 12/1/09 |
| Cooling Tower Blowdown | | 1,224 | GPD | | GPD | D | 12/18/12 |
| | **Total Flow Avg =** | **1,144,137** | | **Max =** | | | |

**SAMPLE POINT NO. 905** Categorical **NPDES Outfall No.**

**Description** MH inside building X, 12' W, 5' S of W door (Total flow out)

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 414 Sub G & H PSES (App A-no) | 100,000 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **100,000** | | **Max =** | | | |

**SAMPLE POINT NO. 912** Ordinance **NPDES Outfall No.**

**Description** Valve on discharge line from outdoor Tank #450 on SE corner of Building 504

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Non-Categorical Process Waste | process waste from bldgs 504/505 | 150,000 | GPD | | GPD | D | 12/1/09 |
| | **Total Flow Avg =** | **150,000** | | **Max =** | | | |

**SAMPLE POINT NO. 915** Categorical **NPDES Outfall No.**

**Description** Valve on E side of T-315 at inside NE corner of bldg 6

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (CN-no, MH3 exempt) | 2,700 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **2,700** | | **Max =** | | | |

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

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**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**SAMPLE POINT NO. 920** Categorical **NPDES Outfall No.**
**Description** Valve on discharge line, outside SW corner of diked area E of bldg 512

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (CN-no,NH3 exempt) - with SP937 | 13,000 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **13,000** | | **Max =** | | | |

**SAMPLE POINT NO. 927** Categorical **NPDES Outfall No.**
**Description** Tank 308 (acid press tank) in bldg 6

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub B PSES | 2,700 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **2,700** | | **Max =** | | | |

**SAMPLE POINT NO. 930** Categorical **NPDES Outfall No.**
**Description** Valve on 4" PVC line inside NW corner of Bldg. 222S, only when sump is discharging from tanks 300 and 355

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub B PSES | 1,800 | GPD | | GPD | R | 7/1/12 |
| | **Total Flow Avg =** | **1,800** | | **Max =** | | | |

**SAMPLE POINT NO. 933** Categorical **NPDES Outfall No.**
**Description** Valve on Tank #1 10' NW of SE corner of Bldg. 200W - only when disch. 439 waste

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub B PSES | 100 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **100** | | **Max =** | | | |

<Removed>
~~**SAMPLE POINT NO. 933**~~ Categorical **NPDES Outfall No.**
**Description** 1/2" steel pipe on inside of concrete wall S of North stairs - Bldg 512

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (CN-no, NH3 exempt) | 26,000 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **26,000** | | **Max =** | | | |

**SAMPLE POINT NO. 936** Categorical **NPDES Outfall No.**
**Description** Valve on 1/2" line 1' from hydrogenerator bldg 8' from S wall in SE corner of bldg 260

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (CN-no, NH3 exempt) | 16,500 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **16,500** | | **Max =** | | | |

**SAMPLE POINT NO. 937** Categorical **NPDES Outfall No.**
**Description** Valve on 2nd level on W side near pipe bridge N of bldg 501

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub C PSES (CN-no,NH3 exempt) - with SP937 | 23,000 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **23,000** | | **Max =** | | | |

**SAMPLE POINT NO. 938** Categorical **NPDES Outfall No.**
**Description** 6" floor drain in far SW corner of room in Building 5, Room 406

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Categorical | 439 Sub D PSNS | 71 | GPD | | GPD | R | 12/1/09 |
| | **Total Flow Avg =** | **71** | | **Max =** | | | |

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | | Treatment Area | Bissell Point |
|---|---|---|---|---|---|
| 12 | Sanitary Or Combined | 17D3 | 016C | Trunk Sewer | 10 - Salisbury |

**Description** Line flowing NE under bldg 223 to pump station (Plant 5 overflow)

**Sewer Route** NE, parallel to Destrehan Street under bldg 223, across Hall Street to pump station, N along Hall St. to STP

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**SAMPLE POINT NO. 011** Ordinance **NPDES Outfall No.**

**Description** MH with square lid 18' S from NW corner of bldg 223 under iron ladder

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Emergency Bypass | Overflow from Plant 5 | 0 | GPD | 14,000 | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 12/1/09 |
| | **Total Flow Avg =** | **0** | | **Max =** | **14,000** | | |

**CONNECTION and SAMPLE POINT INFORMATION**

| LATERAL NO. | Lateral Type | DSMH | | Treatment Area | Bissell Point |
|---|---|---|---|---|---|
| 99 | Sanitary Or Combined | 17D4 | 080C | Trunk Sewer | 10 - Salisbury |

**Description** Multiple lines from buildings located West of N 2nd St to Salisbury

**Sewer Route** East on Salisbury across Hall St. in 5' brick sewer to trunk, N to treatment plant

**SAMPLE POINT NO. 003** Ordinance **NPDES Outfall No.**

**Description** MH in alley at Salisbury, 12' W, 3' S of NW corner of building 91

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Non-Categorical Process Waste | Machine shop, painting, parts washing | 4,142 | GPD | | GPD | D | 12/1/09 |
| Sanitary | | 5,000 | GPD | | GPD | D | 12/1/09 |
| Laboratory Waste | 439 Sub E NA (No Stds) & non-439 R&D | 9,000 | GPD | | GPD | D | 12/1/09 |
| Flow From Upstream Sample Pt 009 | From SP 009 | 11,000 | GPD | | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 11/23/10 |
| | **Total Flow Avg =** | **29,142** | | **Max =** | | | |

**SAMPLE POINT NO. 009** Ordinance **NPDES Outfall No.**

**Description** MH in Mallinckrodt St 27' E of Broadway, 4' from S curb

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Flow From Offsite | Offsite W of Broadway | 11,000 | GPD | | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 11/23/10 |
| | **Total Flow Avg =** | **11,000** | | **Max =** | | | |

**SAMPLE POINT NO. 099** Dummy Point **NPDES Outfall No.**

**Description** No sample point available (Represents WW contributions between upstream SP 009 & downstream SP 003)

| Discharge Components | Process Description | Avg Flow | Unit | Max Flow | Unit | RUD | Effective Date |
|---|---|---|---|---|---|---|---|
| Non-Categorical Process Waste | | 4,142 | GPD | | GPD | D | 12/1/09 |
| Sanitary | | 5,000 | GPD | | GPD | D | 12/1/09 |
| Laboratory Waste | | 9,000 | GPD | | GPD | D | 12/1/09 |
| Storm Water | | 0 | GPD | | GPD | D | 11/23/10 |
| | **Total Flow Avg =** | **18,142** | | **Max =** | | | |

**PRETREATMENT TYPES**

| SP | EFF DATE | TYPE | DESCRIPTION |
|---|---|---|---|
| 003 | 12/01/2009 | DC35 | Oil/Water Interceptor |
| 005 | 11/05/1998 | DC37 | pH Adjustment/Neutralization |
| 010 | 11/05/1998 | DC37 | pH Adjustment/Neutralization |
| 010 | 11/21/2008 | DC35 | Oil/Water Interceptor |
| 080 | 11/05/1998 | DC37 | pH Adjustment/Neutralization |
| 809 | 10/16/1998 | DC9 | Clarification/Settling |
| 809 | 10/16/1998 | DC43 | Ultrafiltration |
| 809 | 10/16/1998 | DC5 | Carbon Absorption |
| 809 | 10/16/1998 | DC7 | Chemical Precipitation |
| 912 | 12/01/2009 | DC37 | pH Adjustment/Neutralization |
| 920 | 02/28/2002 | DC42 | Steam Stripping |
| 930 | 12/01/2009 | DC37 | pH Adjustment/Neutralization |
| 933 | 12/01/2009 | DC37 | pH Adjustment/Neutralization |
| 935 | 04/18/2006 | DC42 | Steam Stripping |
| 937 | 06/26/2007 | DC42 | Steam Stripping |

Report No. PIMS012A 03/19/2013 9:48:52 am
Data Date & Time: 03/19/2013 9:48:52 am

# METROPOLITAN ST. LOUIS SEWER DISTRICT
## INDUSTRIAL DATA SHEET - FACILITY INFORMATION

INDUSTRY NAME **MALLINCKRODT LLC**
PRIMARY MSD ACCOUNT NO. **1011728100**

**Premise Address** 3600 N 2nd St
St. Louis MO. 63147

**PRIORITY POLLUTANTS**

| Pollutant Description | Status | Pollutant Description | Status | Pollutant Description | Status |
|---|---|---|---|---|---|
| Cyanide (Total) | KP | Asbestos (Fibrous) | KP | Antimony (Total) | SP |
| Silver (Total) | SP | Copper (Total) | KP | Cadmium (Total) | KP |
| Zinc (Total) | KP | Nickel (Total) | KP | Mercury (Total) | KP |
| Lead (Total) | KP | Chromium (Total) | KP | Arsenic (Total) | SP |
| Phenol | KP | Dimethyl Phthalate | KP | 4-Nitrophenol | SP |
| 2,4-Dinitrophenol | SP | 2-Chlorophenol | SP | Nitrobenzene | SP |
| Hexachlorocyclopentadiene | SP | Benzo (A) Pyrene | SP | Benzidine | SP |
| Acrolein | KP | Toluene | KP | Methylene Chloride | KP |
| Chloromethane | KP | Chlorobenzene | KP | 1,3-Dichlorobenzene | SP |
| 1,1,1-Trichloroethane | KP | Vinyl Chloride | KP | Tetrachloroethene | KP |
| Chloroform | KP | Carbon Tetrachloride | KP | Bromomethane | SP |
| Benzene | KP | 1,2-Dichloroethane | SP | 1,1,2-Trichloroethane | KP |
| 2,4-Dimethylphenol | SP | 2,4-Dinitrotoluene | SP | 2,4-Dichlorophenol | SP |
| 2-Nitrophenol | SP | Phenanthrene | SP | N-Nitrosodimethylamine | SP |
| Hexachloroethane | SP | Hexachlorobutadiene | SP | Diethyl Phthalate | SP |
| Dieldrin | SP | Bis (2-EthylHexyl) Phthalate | KP | Dibromochloromethane | SP |
| Bromodichloromethane | SP | 1,2-Dichlorobenzene | SP | Trichloroethene | KP |
| Ethylbenzene | KP | 1,4-Dichlorobenzene | SP | 1,1,2,2-Tetrachloroethane | KP |

**EXTRA STRENGTH SURCHARGE INFORMATION**

| | | |
|---|---|---|
| 07/21/2011 | BOD | 415 |
| 07/21/2011 | COD | 825 |
| 07/21/2011 | TSS | 68 |

# PIMS FACILITY CONTACTS

For Account Number Selected **1011728100 MALLINCKRODT LLC**
Located at 3600 N 2nd St
St. Louis MO 63147

**Address Type**

| Contact Type | Contact Name | | Contact Title | Phone Type | Number | Ext. |
|---|---|---|---|---|---|---|
| **Billing Address** | | | | | | |
| Billing Contact | Amber | Crouch | Senior HSE Engineer | OFF | (314)654-0127 | |
| **Office Mailing Address** | | | | | | |
| Office Contact - Primary | Amber | Crouch | Senior HS&E Engineer | OFF | (314)654-0127 | |
| Office Contact 1st Alt | Julie | Summers | Environmental Manager | CELL | (314)486-3767 | |
| Office Contact 1st Alt | Julie | Summers | Environmental Manager | OFF | (314)654-1294 | |
| **Premise Address** | | | | | | |
| Field Contact - Primary | Amber | Crouch | Senior HSE Engineer | FAX | (314)654-1251 | |
| Field Contact - Primary | Amber | Crouch | Senior HSE Engineer | OFF | (314)654-0127 | |
| Field Contact - Primary | Amber | Crouch | Senior HSE Engineer | SWR | (314)654-2000 | |
| Field Contact 1st Alt | Julie | Summers | Environmental Manager | CELL | (314)486-3767 | |
| Field Contact 1st Alt | Julie | Summers | Environmental Manager | OFF | (314)654-1969 | |

# PIMS
# REPORT OF FIELD SAMPLING REQUIREMENTS
# MALLINCKRODT LLC

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | CITY | ST | ZIP |
|---|---|---|---|---|
| | 3600 N 2nd St | St. Louis | MO | 63147 |

**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/3 mo | Grab (Auth in lieu of composite) | 06/30/2013 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Grab (Auth in lieu of composite) | 06/30/2013 |
| | T237000 | pH | Once/3 mo | Grab | 06/30/2013 |
| | T247000 | Temperature | Once/3 mo | Grab | 06/30/2013 |
| | T256000 | Total Suspended Solids | Once/3 mo | Grab (Auth in lieu of composite) | 06/30/2013 |

**002 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T208000 | Biochemical Oxygen Demand (5 Day) | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T225000 | Iron (Total) | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T237000 | pH | Once/3 mo | Grab | 06/30/2013 |
| | T247000 | Temperature | Once/3 mo | Grab | 06/30/2013 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |

**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/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 06/30/2013 |
| | T237000 | pH | Once/3 mo | Grab | 06/30/2013 |
| | T247000 | Temperature | Once/3 mo | Grab | 06/30/2013 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T299000 | Acrolein | Once/year | Grab | 06/30/2013 |
| | T300000 | Acrylonitrile | Once/year | Grab | 06/30/2013 |
| Pesticide Organics | T993000 | Pesticide Organics (except Dazomet) | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Semi-Volatile Organics - Base/Neutrals | T994000 | Semi-Volatile Organics - Base/Neutrals | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Semi-Volatile Organics - Acids | T995000 | Semi-Volatile Organics - Acids | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Volatile Organics | T996000 | Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl | Once/year | Grab | 06/30/2013 |

**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/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T237000 | pH | Once/3 mo | Grab | 06/30/2013 |
| | T247000 | Temperature | Once/3 mo | Grab | 06/30/2013 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T299000 | Acrolein | Once/year | Grab | 06/30/2013 |
| | T300000 | Acrylonitrile | Once/year | Grab | 06/30/2013 |
| | T340000 | Cyanide Amenable to Chlorination | Once/3 mo | Grab | 06/30/2013 |
| Pesticide Organics | T993000 | Pesticide Organics (except Dazomet) | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Semi-Volatile Organics - Base/Neutrals | T994000 | Semi-Volatile Organics - Base/Neutrals | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Semi-Volatile Organics - Acids | T995000 | Semi-Volatile Organics - Acids | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Volatile Organics | T996000 | Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl | Once/year | Grab | 06/30/2013 |

**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/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 06/30/2013 |

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | CITY | ST | ZIP |
|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| | T237000 | pH | Once/3 mo | Grab | 06/30/2013 |
| | T247000 | Temperature | Once/3 mo | Grab | 06/30/2013 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |

**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/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 06/30/2013 |
| | T237000 | pH | Once/3 mo | Grab | 06/30/2013 |
| | T247000 | Temperature | Once/3 mo | Grab | 06/30/2013 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T299000 | Acrolein | Once/year | Grab | 06/30/2013 |
| | T300000 | Acrylonitrile | Once/year | Grab | 06/30/2013 |
| Pesticide Organics | T993000 | Pesticide Organics (except Dazomet) | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Semi-Volatile Organics - Base/Neutrals | T994000 | Semi-Volatile Organics - Base/Neutrals | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Semi-Volatile Organics - Acids | T995000 | Semi-Volatile Organics - Acids | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Volatile Organics | T996000 | Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl | Once/year | Grab | 06/30/2013 |

**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/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 06/30/2013 |
| | T237000 | pH | Once/3 mo | Grab | 06/30/2013 |
| | T247000 | Temperature | Once/3 mo | Grab | 06/30/2013 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T299000 | Acrolein | Once/year | Grab | 06/30/2013 |
| | T300000 | Acrylonitrile | Once/year | Grab | 06/30/2013 |
| | T335000 | Chromium (Total) | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| | T339000 | Copper (Total) | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| | T377000 | Nickel (Total) | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| | T403000 | Zinc (Total) | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Pesticide Organics | T993000 | Pesticide Organics (except Dazomet) | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Semi-Volatile Organics - Base/Neutrals | T994000 | Semi-Volatile Organics - Base/Neutrals | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Semi-Volatile Organics - Acids | T995000 | Semi-Volatile Organics - Acids | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Volatile Organics | T996000 | Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl | Once/year | Grab | 06/30/2013 |

**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/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 06/30/2013 |
| | T237000 | pH | Once/3 mo | Grab | 06/30/2013 |
| | T247000 | Temperature | Once/3 mo | Grab | 06/30/2013 |
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |

**080 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T208000 | Biochemical Oxygen Demand (5 Day) | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T213000 | Chemical Oxygen Demand | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T234000 | Oil and Grease (Total) | Once/3 mo | Grab | 06/30/2013 |
| | T237000 | pH | Once/3 mo | Grab | 06/30/2013 |
| | T247000 | Temperature | Once/3 mo | Grab | 06/30/2013 |

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | | CITY | ST | ZIP |
|---|---|---|---|---|---|
| | T256000 | Total Suspended Solids | Once/3 mo | Comp-Time 04 Hrs | 06/30/2013 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2013 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2013 |
| | T299000 | Acrolein | Once/year | Grab | 06/30/2013 |
| | T300000 | Acrylonitrile | Once/year | Grab | 06/30/2013 |
| | T309000 | Benzene | Once/year | Grab | 06/30/2013 |
| | T330000 | Chlorobenzene | Once/year | Grab | 06/30/2013 |
| | T332000 | Chloroform | Once/year | Grab | 06/30/2013 |
| | T340000 | Cyanide Amenable to Chlorination | Once/year | Grab | 06/30/2013 |
| | T341000 | Cyanide (Total) | Once/year | Grab | 06/30/2013 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2013 |
| | T397000 | Toluene | Once/year | Grab | 06/30/2013 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2013 |
| | T435000 | Xylene | Once/year | Grab | 06/30/2013 |
| | T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | 06/30/2013 |
| | T438000 | Isobutyraldehyde | Once/year | Grab | 06/30/2013 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2013 |
| | T440000 | n-Butyl Acetate | Once/year | Grab | 06/30/2013 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2013 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2013 |
| | T443000 | Methyl Formate | Once/year | Grab | 06/30/2013 |
| | T445000 | Isopropyl Ether | Once/year | Grab | 06/30/2013 |
| | T446000 | Tetrahydrofuran | Once/year | Grab | 06/30/2013 |
| | T447000 | n-Hexane | Once/year | Grab | 06/30/2013 |
| | T448000 | n-Heptane | Once/year | Grab | 06/30/2013 |
| | T449000 | Diethylamine | Once/year | Grab | 06/30/2013 |
| | T550000 | Triethylamine | Once/year | Grab | 06/30/2013 |
| Pesticide Organics | T993000 | Pesticide Organics (except Dazomet) | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Semi-Volatile Organics - Base/Neutrals | T994000 | Semi-Volatile Organics - Base/Neutrals | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Semi-Volatile Organics - Acids | T995000 | Semi-Volatile Organics - Acids | Once/year | Comp-Time 04 Hrs | 06/30/2013 |
| Volatile Organics | T996000 | Volatile Orgs-not incl Acro/Acryl & 2-chloroethyl | Once/year | Grab | 06/30/2013 |

**905 Project Code: IM = IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2013 |
| | T263000 | (cis & trans) 1,3-Dichloropropene | Once/year | Grab | 06/30/2013 |
| | T264000 | 1,1-Dichloroethane | Once/year | Grab | 06/30/2013 |
| | T265000 | 1,1-Dichloroethene | Once/year | Grab | 06/30/2013 |
| | T266000 | 1,1,1-Trichloroethane | Once/year | Grab | 06/30/2013 |
| | T267000 | 1,1,2-Trichloroethane | Once/year | Grab | 06/30/2013 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2013 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2013 |
| | T271000 | 1,2-Dichloropropane | Once/year | Grab | 06/30/2013 |
| | T273000 | 1,2,4-Trichlorobenzene | Once/year | Grab | 06/30/2013 |
| | T274000 | 1,3-Dichlorobenzene | Once/year | Grab | 06/30/2013 |
| | T275000 | 1,4-Dichlorobenzene | Once/year | Grab | 06/30/2013 |
| | T276000 | 2-Nitrophenol | Once/year | Grab | 06/30/2013 |
| | T288000 | 4-Nitrophenol | Once/year | Grab | 06/30/2013 |
| | T295000 | 4,6-Dinitro-2-Methylphenol | Once/year | Grab | 06/30/2013 |
| | T297000 | Acenaphthene | Once/year | Grab | 06/30/2013 |
| | T302000 | Anthracene | Once/year | Grab | 06/30/2013 |
| | T309000 | Benzene | Once/year | Grab | 06/30/2013 |
| | T310000 | Benzidine | Once/year | Grab | 06/30/2013 |
| | T321000 | Bis (2-EthylHexyl) Phthalate | Once/year | Grab | 06/30/2013 |
| | T328000 | Carbon Tetrachloride | Once/year | Grab | 06/30/2013 |
| | T330000 | Chlorobenzene | Once/year | Grab | 06/30/2013 |
| | T331000 | Chloroethane | Once/year | Grab | 06/30/2013 |

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | | CITY | ST | ZIP | |
|---|---|---|---|---|---|---|
| | T332000 | Chloroform | Once/year | Grab | | 06/30/2013 |
| | T333000 | Chloromethane | Once/year | Grab | | 06/30/2013 |
| | T343000 | Di-n-butyl Phthalate | Once/year | Grab | | 06/30/2013 |
| | T348000 | Diethyl Phthalate | Once/year | Grab | | 06/30/2013 |
| | T349000 | Dimethyl Phthalate | Once/year | Grab | | 06/30/2013 |
| | T355000 | Ethylbenzene | Once/year | Grab | | 06/30/2013 |
| | T356000 | Fluoranthene | Once/year | Grab | | 06/30/2013 |
| | T357000 | Fluorene | Once/year | Grab | | 06/30/2013 |
| | T361000 | Hexachlorobenzene | Once/year | Grab | | 06/30/2013 |
| | T362000 | Hexachlorobutadiene | Once/year | Grab | | 06/30/2013 |
| | T364000 | Hexachloroethane | Once/year | Grab | | 06/30/2013 |
| | T371000 | Methylene Chloride | Once/year | Grab | | 06/30/2013 |
| | T375000 | Naphthalene | Once/year | Grab | | 06/30/2013 |
| | T378000 | Nitrobenzene | Once/year | Grab | | 06/30/2013 |
| | T387000 | Phenanthrene | Once/year | Grab | | 06/30/2013 |
| | T389000 | Pyrene | Once/year | Grab | | 06/30/2013 |
| | T394000 | Tetrachloroethene | Once/year | Grab | | 06/30/2013 |
| | T397000 | Toluene | Once/year | Grab | | 06/30/2013 |
| | T399000 | Trans-1,2-Dichloroethene | Once/year | Grab | | 06/30/2013 |
| | T400000 | Trichloroethene | Once/year | Grab | | 06/30/2013 |
| | T401000 | Vinyl Chloride | Once/year | Grab | | 06/30/2013 |

**912 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2013 |
| | T553000 | N,N-Dimethyl Acetamide | Once/year | Grab | 06/30/2013 |

**915 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2013 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2013 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2013 |
| | T309000 | Benzene | Once/year | Grab | 06/30/2013 |
| | T330000 | Chlorobenzene | Once/year | Grab | 06/30/2013 |
| | T332000 | Chloroform | Once/year | Grab | 06/30/2013 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2013 |
| | T397000 | Toluene | Once/year | Grab | 06/30/2013 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2013 |
| | T435000 | Xylene | Once/year | Grab | 06/30/2013 |
| | T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | 06/30/2013 |
| | T438000 | Isobutyraldehyde | Once/year | Grab | 06/30/2013 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2013 |
| | T440000 | n-Butyl Acetate | Once/year | Grab | 06/30/2013 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2013 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2013 |
| | T443000 | Methyl Formate | Once/year | Grab | 06/30/2013 |
| | T445000 | Isopropyl Ether | Once/year | Grab | 06/30/2013 |
| | T446000 | Tetrahydrofuran | Once/year | Grab | 06/30/2013 |
| | T447000 | n-Hexane | Once/year | Grab | 06/30/2013 |
| | T448000 | n-Heptane | Once/year | Grab | 06/30/2013 |
| | T449000 | Diethylamine | Once/year | Grab | 06/30/2013 |
| | T550000 | Triethylamine | Once/year | Grab | 06/30/2013 |

**920 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | CITY | ST | ZIP |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| T247000 | Temperature | Once/year | Grab | 06/30/2013 |
| T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2013 |
| T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2013 |
| T309000 | Benzene | Once/year | Grab | 06/30/2013 |
| T330000 | Chlorobenzene | Once/year | Grab | 06/30/2013 |
| T332000 | Chloroform | Once/year | Grab | 06/30/2013 |
| T371000 | Methylene Chloride | Once/year | Grab | 06/30/2013 |
| T397000 | Toluene | Once/year | Grab | 06/30/2013 |
| T430000 | Acetone | Once/year | Grab | 06/30/2013 |
| T435000 | Xylene | Once/year | Grab | 06/30/2013 |
| T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | 06/30/2013 |
| T438000 | Isobutyraldehyde | Once/year | Grab | 06/30/2013 |
| T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2013 |
| T440000 | n-Butyl Acetate | Once/year | Grab | 06/30/2013 |
| T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2013 |
| T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2013 |
| T443000 | Methyl Formate | Once/year | Grab | 06/30/2013 |
| T445000 | Isopropyl Ether | Once/year | Grab | 06/30/2013 |
| T446000 | Tetrahydrofuran | Once/year | Grab | 06/30/2013 |
| T447000 | n-Hexane | Once/year | Grab | 06/30/2013 |
| T448000 | n-Heptane | Once/year | Grab | 06/30/2013 |
| T449000 | Diethylamine | Once/year | Grab | 06/30/2013 |
| T550000 | Triethylamine | Once/year | Grab | 06/30/2013 |

**927 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2013 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2013 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2013 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2013 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2013 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2013 |

**930 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2013 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2013 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2013 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2013 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2013 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2013 |

**933 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2013 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2013 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2013 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2013 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2013 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2013 |

**935 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2013 |

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | CITY | ST | ZIP |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2013 |
| T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2013 |
| T309000 | Benzene | Once/year | Grab | 06/30/2013 |
| T330000 | Chlorobenzene | Once/year | Grab | 06/30/2013 |
| T332000 | Chloroform | Once/year | Grab | 06/30/2013 |
| T371000 | Methylene Chloride | Once/year | Grab | 06/30/2013 |
| T397000 | Toluene | Once/year | Grab | 06/30/2013 |
| T430000 | Acetone | Once/year | Grab | 06/30/2013 |
| T435000 | Xylene | Once/year | Grab | 06/30/2013 |
| T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | 06/30/2013 |
| T438000 | Isobutyraldehyde | Once/year | Grab | 06/30/2013 |
| T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2013 |
| T440000 | n-Butyl Acetate | Once/year | Grab | 06/30/2013 |
| T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2013 |
| T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2013 |
| T443000 | Methyl Formate | Once/year | Grab | 06/30/2013 |
| T445000 | Isopropyl Ether | Once/year | Grab | 06/30/2013 |
| T446000 | Tetrahydrofuran | Once/year | Grab | 06/30/2013 |
| T447000 | n-Hexane | Once/year | Grab | 06/30/2013 |
| T448000 | n-Heptane | Once/year | Grab | 06/30/2013 |
| T449000 | Diethylamine | Once/year | Grab | 06/30/2013 |
| T550000 | Triethylamine | Once/year | Grab | 06/30/2013 |

**936 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2013 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2013 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2013 |
| | T309000 | Benzene | Once/year | Grab | 06/30/2013 |
| | T330000 | Chlorobenzene | Once/year | Grab | 06/30/2013 |
| | T332000 | Chloroform | Once/year | Grab | 06/30/2013 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2013 |
| | T397000 | Toluene | Once/year | Grab | 06/30/2013 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2013 |
| | T435000 | Xylene | Once/year | Grab | 06/30/2013 |
| | T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | 06/30/2013 |
| | T438000 | Isobutyraldehyde | Once/year | Grab | 06/30/2013 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2013 |
| | T440000 | n-Butyl Acetate | Once/year | Grab | 06/30/2013 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2013 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2013 |
| | T443000 | Methyl Formate | Once/year | Grab | 06/30/2013 |
| | T445000 | Isopropyl Ether | Once/year | Grab | 06/30/2013 |
| | T446000 | Tetrahydrofuran | Once/year | Grab | 06/30/2013 |
| | T447000 | n-Hexane | Once/year | Grab | 06/30/2013 |
| | T448000 | n-Heptane | Once/year | Grab | 06/30/2013 |
| | T449000 | Diethylamine | Once/year | Grab | 06/30/2013 |
| | T550000 | Triethylamine | Once/year | Grab | 06/30/2013 |

**937 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2013 |
| | T269000 | 1,2-Dichlorobenzene | Once/year | Grab | 06/30/2013 |
| | T270000 | 1,2-Dichloroethane | Once/year | Grab | 06/30/2013 |
| | T309000 | Benzene | Once/year | Grab | 06/30/2013 |
| | T330000 | Chlorobenzene | Once/year | Grab | 06/30/2013 |

Account No Entered **1011728100**

| SPN | PREMISE ADDRESS | | CITY | ST | ZIP | |
|---|---|---|---|---|---|---|
| | T332000 | Chloroform | Once/year | Grab | | 06/30/2013 |
| | T341000 | Cyanide (Total) | Once/year | Grab | | 06/30/2013 |
| | T371000 | Methylene Chloride | Once/year | Grab | | 06/30/2013 |
| | T397000 | Toluene | Once/year | Grab | | 06/30/2013 |
| | T430000 | Acetone | Once/year | Grab | | 06/30/2013 |
| | T435000 | Xylene | Once/year | Grab | | 06/30/2013 |
| | T437000 | 4-Methyl-2-Pentanone | Once/year | Grab | | 06/30/2013 |
| | T438000 | Isobutyraldehyde | Once/year | Grab | | 06/30/2013 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | | 06/30/2013 |
| | T440000 | n-Butyl Acetate | Once/year | Grab | | 06/30/2013 |
| | T441000 | Ethyl Acetate | Once/year | Grab | | 06/30/2013 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | | 06/30/2013 |
| | T443000 | Methyl Formate | Once/year | Grab | | 06/30/2013 |
| | T445000 | Isopropyl Ether | Once/year | Grab | | 06/30/2013 |
| | T446000 | Tetrahydrofuran | Once/year | Grab | | 06/30/2013 |
| | T447000 | n-Hexane | Once/year | Grab | | 06/30/2013 |
| | T448000 | n-Heptane | Once/year | Grab | | 06/30/2013 |
| | T449000 | Diethylamine | Once/year | Grab | | 06/30/2013 |
| | T550000 | Triethylamine | Once/year | Grab | | 06/30/2013 |

**938 Project Code: IM= IPD - Company - MSD**

| Pollutant Group | Poll Code | Pollutant Description | Frequency | Sample Type | End Date |
|---|---|---|---|---|---|
| | T247000 | Temperature | Once/year | Grab | 06/30/2013 |
| | T371000 | Methylene Chloride | Once/year | Grab | 06/30/2013 |
| | T430000 | Acetone | Once/year | Grab | 06/30/2013 |
| | T439000 | n-Amyl Acetate | Once/year | Grab | 06/30/2013 |
| | T441000 | Ethyl Acetate | Once/year | Grab | 06/30/2013 |
| | T442000 | Isopropyl Acetate | Once/year | Grab | 06/30/2013 |