8# 1830333
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## DelFrate, Todd@Waterboards

**From:** Wyels, Wendy@Waterboards
**Sent:** Friday, January 16, 2015 8:49 AM
**To:** CentralValleySacramento
**Subject:** FW:
**Attachments:** 2015.01.15 Feather River Organics Update on Marysville Wastewater Permit.pdf

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**From:** Drew Lehman [mailto:dlehman@recology.com]
**Sent:** Thursday, January 15, 2015 6:07 PM
**To:** Wyels, Wendy@Waterboards
**Cc:** DelFrate, Todd@Waterboards; Hold, Howard@Waterboards; Altevogt, Andrew@Waterboards; Okamoto, Mayumi@Waterboards; Paul Yamamoto; Dave Vaughn; Stephanie Kendall; 'Paul W. Donoho (pdonoho@co.yuba.ca.us)'; 'Bruner, Marc R. (Perkins Coie)'
**Subject:**

January 15, 2015

Hello Wendy –

Attached is the Feather River Organics update on the City of Marysville's wastewater discharge permit and the updated water balance study for Recology Yuba Sutter.

We will continue to work diligently on these issues and keep your team informed.

Thank you,

Drew

**Drew Lehman**
Director, Environment & Planning

**Recology™** | 50 California Street, 24th Floor | San Francisco, CA 94111-9796
T: 415.875.1173 | Cell: 415.716.2184 | dlehman@recology.com
www.recology.com

WASTE ZERO

Recology
Yuba - Sutter
WASTE ZERO

January 15, 2015

Ms. Wendy Wyels, Supervisor
Compliance and Enforcement Section
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

RE: Feather River Organics – Update on City of Marysville Wastewater Discharge Permit; Updated Water Balance Study

Dear Ms. Wyels:

This is the requested progress report on wastewater permitting with the City of Marysville and a transmittal of an updated water balance study prepared by Golder Associates. As we've discussed, Recology met with the City of Marysville in December 2014 and January 2015 regarding the process and requirements to secure an Industrial Wastewater Discharge Permit for disposal of compost runoff from the Feather River Organics (FRO) composting facility in Marysville to the local publicly owned treatment works (POTW).

Attached is a copy of the City of Marysville Industrial Waste Discharge Permit Application that was submitted to the City on January 14, 2015. We anticipate the final Permit will be issued by the City next week. The City has agreed to accept disposal of 200,000 peak daily gallons and 750,000 peak weekly gallons from the FRO facility into its POTW; these values have been incorporated into the water balance as noted below. The City and Recology are also working on the best way for FRO personnel to be in close contact with POTW staff during larger storm events, with the aim of possibly increasing the peak discharge on a case-by-case basis where the circumstances at the POTW would safely allow such a short term peak increase.

The attached revised Water Balance report was prepared by Golder Associates for the FRO site. It incorporates the above noted peak daily and weekly disposal limits to the POTW. The report concludes that the site's storage and disposal system is sufficient to contain compost stormwater run-off for a single precipitation event or consecutive events that correspond to a 25-year return period in accordance to the Department of Water Resources' stormwater database.

Further, we are moving ahead with an idea advanced during meetings with the Regional Board last summer and we are actively reviewing operations in an effort to reduce the footprint of the composting activities at the FRO site. Reducing the composting footprint will help reduce the amount of compost runoff that would be generated and managed during storm events.

We have also met local agencies to verify the permitting leads and environmental review requirements should we seek to put in some type of water storage in the former "Hog Farm" area of the facility.

Should you have any questions regarding this submittal, please contact either of us at your convenience. Thank you for your time and consideration as we work through this process.

Sincerely,

Phil Graham by MB

Phil Graham
General Manager

Drew Lehman
Director, Environment and Planning

Attachments

cc: T. DelFrate, H. Hold, A. Altevogt, Regional Water Quality Control Board
M. Okamoto, State Water Resources Control Board
P. Yamamoto, D. Vaughn, S. Kendall, Recology
P. Donoho, Yuba County LEA
M. Bruner, Perkins Coie

January 14, 2014 Project No. 1301525

Mr. Phil Graham
Recology Yuba Sutter
3001 North Levee Road
Marysville, CA 95901

**RE: UPDATE TO THE WATER BALANCE CALCULATIONS FOR THE FEATHER RIVER ORGANICS COMPOSTING OPERATION, RECOLOGY YUBA SUTTER FACILITY, MARYSVILLE, CALIFORNIA**

Dear Mr. Graham:

Golder Associates (Golder) Inc. is submitting this report to update the water balance in response to the December 9, 2014 Water Code 13267 Order issued by Central Valley Regional Water Quality Control Board (CVRWQCB) staff for the Feather River Organics Compost Facility in Marysville, California. On December 18, 2014, Golder prepared a Supplemental Technical Report to address Item f of the December 9 Order, which requires: "*A revised water balance calculation and run-off model calibrated from the 3 December 2014 event. The water balance shall be prepared by, or under the supervision of, a California Registered Engineer, and signed/stamped by the registered engineer. The water balance shall include a run-off model based on the 25-year, 24-hour precipitation event of 3.14 inches. Recalculated run-off volumes shall be compared to on-site storage capability on 3 December 2014, and to on-site storage capacity as of 9 December 2014.*"

Golder's December 18, 2014 Supplemental Technical Report focused on water storage volumes in comparison to the anticipated water run-off from a single, 25-year, 24-hour event of 3.16 inches. This report demonstrated that the current on-site storage capacity of 819,000 gallons, represented by 39, 21,000-gallon storage tanks, exceeds the revised run-off volume of 747,000 gallons expected for the 3.16-inch event.

Subsequent to Golder's December 18, 2014 Supplemental Technical Report, Feather River Organics (FRO) has worked with the City of Marysville to define the maximum volume of water that can be discharged to the City's Publically-Owned Treatment Works (POTW) facility. Accordingly, the City has determined that FRO can discharge up to a maximum of 200,000 gallons per day with a maximum of 750,000 gallons per week (verbal communication from the City to Recology on January 14, 2015). For a single, 25-year, 24-hour precipitation event, it would take approximately 3.75 days to empty the tanks by pumping solely to the POTW. This analysis does not account for compost make up water that may be used following this design precipitation event.

Golder has expanded the water balance to evaluate consecutive days of precipitation as discussed below.

## 1.0 UPDATED WATER BALANCE CALCULATIONS

Golder's December 18, 2014 Supplemental Technical Report presented a revised water balance based on calibrating the storm water runoff model to previous precipitation events. The calibrated model determined that weighted average Soil Conservation Service storm water runoff curve numbers (CNs) of 92 and 95 should be applied to the north and south sides of the compost areas, respectively.

In addition to the single 25-year, 24-hour event as presented in Golder's December 18, 2014 Supplemental Technical Report, Golder evaluated the FRO water balance for the current 11.5-acre compost area by considering several consecutive days of precipitation as discussed below.



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**Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America**

## 1.1 Consecutive Precipitation Events

In 2014, the CVRWQCB recommended that FRO use the Department of Water Resources historical precipitation database for Marysville to determine the 25-year, 24-hour design storm event. In addition to identifying the single day design storm event of 3.16 inches (25-year return period), this database also provides cumulative rain totals for consecutive days as a function of return period. Table 1 below summarizes this data for a return period of 25 years for up to 14 consecutive days of rain.

**Table 1. DWR Precipitation Database Summary**

| Return Period | Consecutive Days of Rain | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 14 |
| 25 Years | 3.16 | 4.63 | 5.53 | 6.21 | 6.79 | 7.16 | 7.60[1] | 9.83[2] |

Notes: 1. Interpolated between 6 and 8 day totals
2. Interpolated between 10 and 15 day totals

Using TR-55 run-off estimates based on the calibrated CN values, Golder evaluated up to 7 consecutive days of rain, of which each day represents the maximum precipitation possible with cumulative totals that correspond to a 25-year return period. Accordingly, the assumed daily precipitation over this 7-day period is summarized below in Table 2.

**Table 2. 25 Year Return – Maximum Daily Precipitation for Consecutive Days of Precipitation**

| Days | Daily Precipitation (Inches) | Cumulative Precipitation (Inches) |
|---|---|---|
| Day 1 | 3.16 | 3.16 inches for 1 day |
| Day 2 | 1.47 | 4.63 inches for 2 days |
| Day 3 | 0.9 | 5.53 inches for 3 days |
| Day 4 | 0.68 | 6.21 inches for 4 days |
| Day 5 | 0.58 | 6.79 inches for 5 days |
| Day 6 | 0.37 | 7.16 inches for 6 days |
| Day 7 | 0.44 | 7.60 inches for 7 days |

Conservatively assuming no compost make-up water is applied during this period, the water balance for the above 7 consecutive days is summarized below in Table 3.

**Table 3. Summary Water Balance Calculations For Consecutive Days of Precipitation**

| Days | Run-Off Volume (gals)[1] | Daily Discharge to POTW (gals) | Remaining Storage Capacity (gals) |
|---|---|---|---|
| Day 1 | 747,000 | 200,000 | 272,000 |
| Day 2 | 307,066 | 200,000 | 164,934 |
| Day 3 | 153,547 | 200,000 | 211,387 |
| Day 4 | 102,365 | 150,000 | 259,022 |
| Day 5 | 75,647 | 0 | 183,376 |
| Day 6 | 35,570 | 0 | 147,806 |
| Day 7 | 51,182 | 0 | 96,624 |

Note 1. Volumes are based on runoff volumes from the 11.5-acre Feather River Organics facility

As shown in Table 3, the existing storage system has sufficient capacity to the store the run-off for consecutive days of precipitation corresponding to a 25-year return period in accordance to the DWR database. Furthermore, compost make-up water can be applied during days with lower precipitation totals, which will result in a greater capacity than indicated in Table 3. Attachment 1 includes the supporting calculations.

Golder also considered a scenario in which the daily rainfall occurred uniformly over the assumed number of consecutive days. For example, the cumulative two day precipitation total of 4.63 inches (25-year return period) was assumed to occur over two days with each day contributing 2.32 inches of precipitation. Similarly, the three day precipitation total of 5.53 inches (25-year return period) was assumed to occur over three days with each day contributing 1.84 inches of precipitation. This uniform distribution evaluation was carried out to 14 consecutive days. Conservatively assuming no compost make-up water was applied during these periods, these alternative precipitation distributions resulted in a minimum remaining capacity of 175,000 gallons at the end the 3rd consecutive day of precipitation. Prior to and following the 3rd consecutive day, the remaining storage capacity is estimated to be greater than 175,000 gallons. For the 14-day scenario, the maximum combined 2-week POTW discharge rate of 1,500,000 gallons exceeds the total estimated 14-day run-off volume 1,433,100 gallons from the compost area. These calculations are presented in Attachment 2.

## 1.2 Conclusions

These water balance calculations in conjunction with the Golder December 18, 2014 Report demonstrate that the existing storage system is sufficient to contain storm water run-off for a single precipitation event or consecutive events that correspond to a 25-year return period in accordance to the DWR database recommended by the CVRWQCB.

## 2.0 CLOSURE

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

If you have any questions, please contact us.

Sincerely,

**GOLDER ASSOCIATES INC.**

Joel Kelsey
Project Engineer

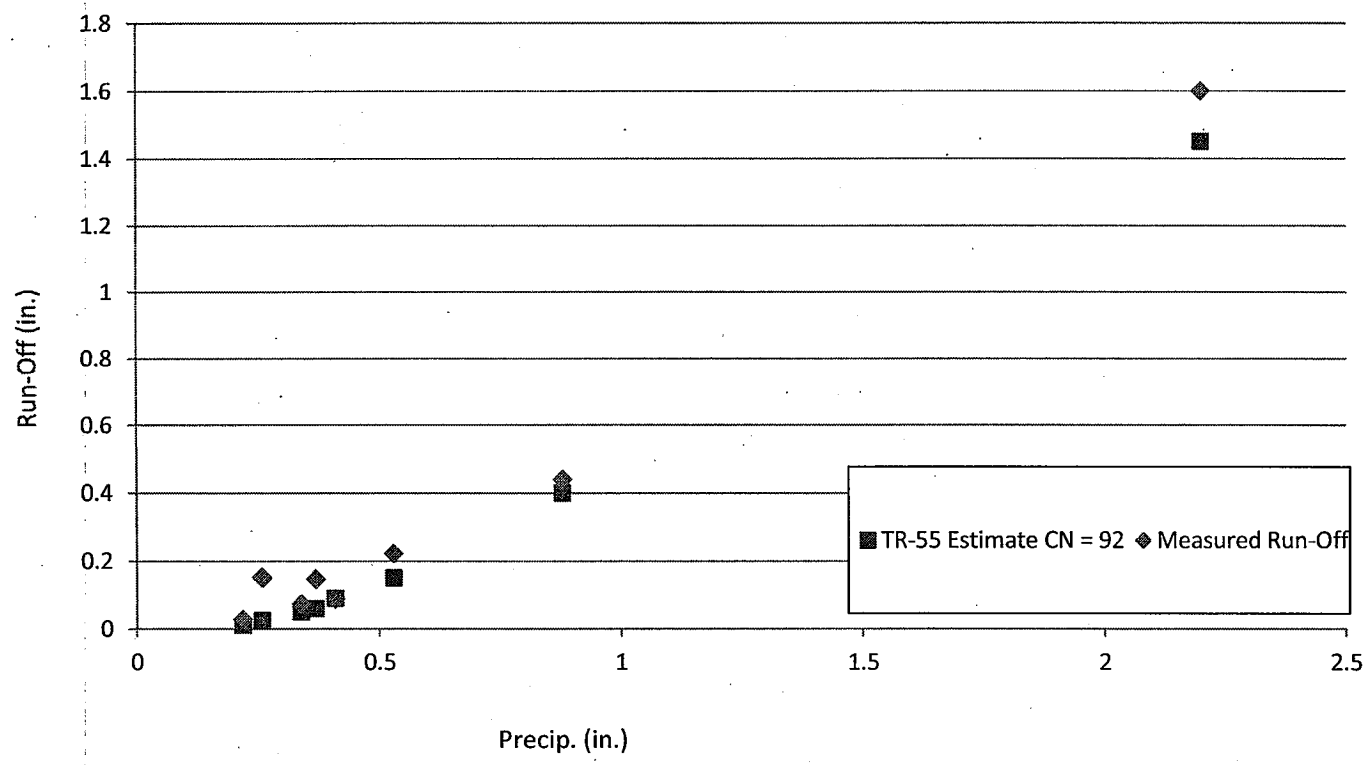
Kenneth G. Haskell, P.E.
Principal/ Sr. Practice Leader

REGISTERED PROFESSIONAL ENGINEER
KENNETH G. HASKELL
No. C053290
Exp. 6/30/15
CIVIL
STATE OF CALIFORNIA

Attachment 1 – Water Balance for Consecutive Days at Maximum Daily Precipitation, 25-yr Return Period
Attachment 2 – Water Balance Assuming Uniform Distribution of Precipitation, 25-yr Return Period

# ATTACHMENT 1
# WATER BALANCE FOR CONSECUTIVE DAYS AT MAXIMUM DAILY PRECIPITATION
# 25-YR RETURN PERIOD

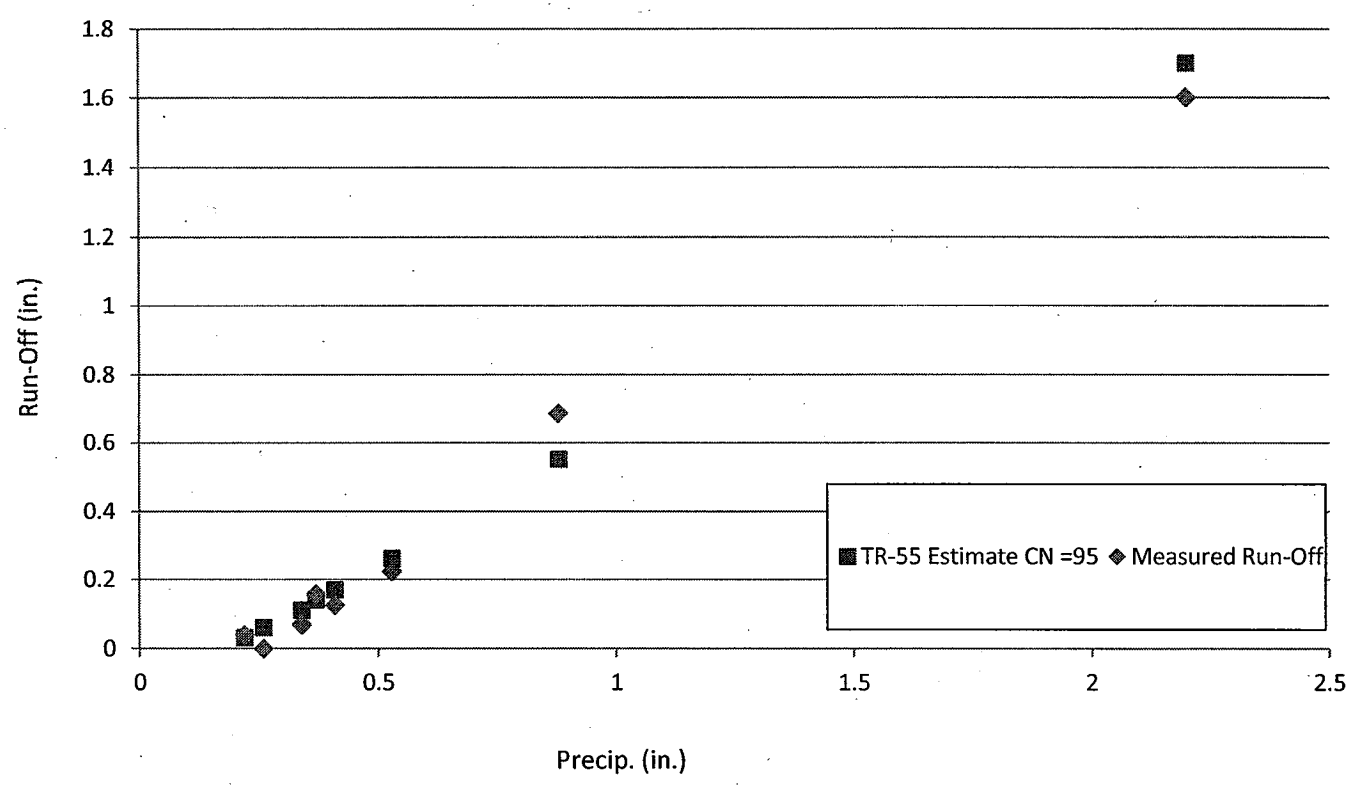
**Figure A1 - Comparison of North Area Run-Off Estimated by TR-55 to Measured Run-Off**




Notes:

1. TR-55 estimate based on Figure 2-1, " Urban Hydrology for Small Water Sheds, Technical Release 55 (TR-55)
2. Precipitation total and run-off totals are based on measured precipitation of 1.83-inches on 12/3, 0.37 inches on 12/4, and total pumping volumes to POTW and J-Stands from 12/3 through 12/5

**Figure A2 - Comparison of South Area Run-Off Estimated by TR-55 to Measured Run-Off**




Notes:

1. TR-55 estimate based on Figure 2-1, " Urban Hydrology for Small Water Sheds, Technical Release 55 (TR-55)
2. Precipitation total and run-off totals are based on measured precipitation of 1.83-inches on 12/3, 0.37 inches on 12/4, and total pumping volumes to POTW and J-Stands from 12/3 through 12/5

# Updated FRO Water Balance

**Input Parameters**

| | | | | |
|---|---|---|---|---|
| Pad Area = | 11.5 | Acres | | |
| North Side Area = | 8.3 | Acres = | 72.17% | of pad area |
| South Side Area = | 3.2 | Acres = | 27.83% | of pad area |
| No. Tanks = | 39 | tanks | | |
| Storage per Tank = | 21,000 | tanks | | |
| Daily POTW Discharge Limit | 200,000 | gals | | |
| Weekly POTW Discharge Limit | 750,000 | gals | | |
| Compost Make-Up Water | - | gpd | Conservatively assume no make-u | |

**CALCULATIONS**

**Methodology**: Use Figures A1 and A2 (Golder December 18, 2014 Technical Report) to estimate the TR-55 rur precipitation events.

| Model 4 days of rain distributed as follows: | | | Run-off North Area (gals) | Run-off South Area (ga |
|---|---|---|---|---|
| 1st Day Rain = | 3.16 | in | 539,139 | 207,8 |
| 2nd Day Rain = | 1.47 | in | 214,097 | 92,9 |
| 3rd Day Rain = | 0.9 | in. | 101,414 | 52,1 |
| 4th Day Rain = | 0.68 | in. | 67,609 | 34,7 |
| 5th Day Rain = | 0.58 | in. | 49,580 | 26,0 |
| 6th Day Rain = | 0.37 | in. | 22,536 | 13,0 |
| 7th Day Rain = | 0.44 | in. | 33,805 | 17,3 |

| **1st Day** | Daily Volume | |
|---|---|---|
| Run-off | 747,000 | gals |
| Daily POTW Discharge rate = | 200,000 | gals |
| Compost Make-Up Water = | - | gals |
| Remaining Storage volume end of Day 1 | 272,000 | gals |
| **2nd Day** | | |
| Run-off | 307,066 | gals |
| Daily POTW Discharge rate = | 200,000 | gals |
| Compost Make-Up Water = | - | gals |
| Remaining Storage volume end of Day 2 | 164,934 | gals |
| **3rd Day** | | |
| Run-off | 153,547 | gals |
| Daily POTW Discharge rate = | 200,000 | gals |

# ATTACHMENT 2
# WATER BALANCE ASSUMING UNIFORM DISTRIBUTION OF PRECIPITATION
# 25-YR RETURN PERIOD

# Updated FRO Water Balance

**Input Parameters**

| | | | |
|---|---|---|---|
| Pad Area = | 11.5 | Acres | |
| North Side Area = | 8.3 | Acres = | 72.17% of pad area |
| South Side Area = | 3.2 | Acres = | 27.83% of pad area |
| No. Tanks = | 39 | tanks | |
| Storage per Tank = | 21,000 | tanks | |
| Daily POTW Discharge Limit | 200,000 | gals | |
| Weekly POTW Discharge Limit | 750,000 | gals | |
| Compost Make-Up Water | - | gpd | Conservatively assume no mak |

**CALCULATION ANALYSES**

**Methodology**: Use Figures A1 and A2 (Golder December 18, 2014 Technical Report) to estimate the TR-55 precipitation events.

| Model Consectuve days of rain distributed uniformly | | | Daily Precip (Inches) | Run-o North Area |
|---|---|---|---|---|
| 2 Day Cumulative Total = | 4.63 | in | 2.32 | 3 |
| 3 day Cumulative Total = | 5.53 | in | 1.84 | 2 |
| 4 day Cumulative Total = | 6.21 | in | 1.55 | 2 |
| 5 day Cumulative Total = | 6.79 | in | 1.36 | 1 |
| 6 day Cumulative Total = | 7.16 | in | 1.19 | 1 |
| 7 day Cumulative Total = | 7.60 | in | 1.09 | 1 |
| 14 day Cumulative Total = | 9.83 | in | 0.70 | |

| No. of Days | Consecutive Days | Cumulative Run-Off (gals) | Discharge to POTW Gallons | Compost Up Water |
|---|---|---|---|---|
| 2 | 2 Day Cumulative Total | 1,035,701 | 400,000 | |
| 3 | 3 day Cumulative Total | 1,243,851 | 600,000 | |
| 4 | 4 day Cumulative Total | 1,283,765 | 750,000 | |
| 5 | 5 day Cumulative Total | 1,358,435 | 750,000 | |
| 6 | 6 day Cumulative Total | 1,323,028 | 750,000 | |
| 7 | 7 day Cumulative Total | 1,293,405 | 750,000 | |
| 14 | 14 day Cumulative Total | 1,433,104 | 1,500,000 | |

CITY OF MARYSVILLE
INDUSTRIAL WASTE DISCHARGE PERMIT
APPLICATION

Please complete this application and return to:

Wastewater Superintendent
City of Marysville
P.O. Box 150
Marysville, CA 95901

Section 1 –Contact

A. Applicant Business Name (same as water and utility bill):
**Recology Yuba Sutter**
**Feather River Organics**

B. Address of premises discharging wastewater:
**3001 N. Levee Road**
**Marysville, CA 95901**

C. Business Address (if different than above):
**Same**

D. Person to be contacted about application:
1. Name: **Phil Graham**
2. Title: **General Manager, Feather River Organics**
3. Phone: **(530) 682-6086**

E. Person to contact in case of emergency:
1. Name: **Jordan Norris**
2. Title: **Site Supervisor, Feather River Organics**
3. Phone: **(707)249-1821**

Section 2 – Business Description

A. Describe process and make up of discharge:
**Compost stormwater/contact water**

B. Describe working schedule in terms of discharge:
**24 hours/day, 7 days/week**

Section 3 – Wastewater Discharge

A. Estimate amount of Discharge in gallons (Compost Stormwater):

| | |
|---|---|
| Peak Daily Discharge | 200,000 |
| Peak Weekly Discharge | 750,000 |

Section 4 – Certification

I certify that the information submitted in this application is true and correct to the best of my knowledge. I further certify that I have reviewed the Marysville Municipal Code Title 6 and reported all information that could be in violation with the intent of the Title to the best of my knowledge.

PHIL GRAHAM
Name

GENERAL MANAGER
Title

Signature

1/14/15
Date

PCL XL error

Subsystem: GE_VECTOR

Error: GEEmptyClipPath Warning: IllegalMediaSize