



Los Angeles Regional Water Quality Control Board

October 20, 2016

Mr. Mitchell G. Lansdell
City Manager
1700 W. 162nd St., Room 112
P.O. Box 47003
Gardena, CA 90247

RESCISSION OF CONDITIONAL APPROVAL OF THE CITY OF GARDENA'S 2ND REVISED INTEGRATED MONITORING PROGRAM; DIRECTIVE TO COMMENCE BASELINE MONITORING PURSUANT TO THE MONITORING AND REPORTING PROGRAM AS SET FORTH IN ATTACHMENT E (LOS ANGELES COUNTY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT - NPDES PERMIT NO. CAS004001; ORDER NO. R4-2012-0175)

Dear Mr. Lansdell:

Attachment E of the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit (NPDES Permit No. CAS004001; Order No. R4-2012-0175) (hereafter, LA County MS4 Permit) sets forth the monitoring and reporting program requirements for Permittees. It allows permittees the option to individually develop and implement an integrated monitoring program (IMP) to address all of the monitoring requirements in the Permit and other monitoring obligations or requirements in a cost efficient and effective manner. An IMP must achieve the five Primary Objectives set forth in Part II.A of Attachment E and include the elements set forth in Part II.E of Attachment E of the LA County MS4 Permit. These programs must be approved by the Executive Officer of the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board or Board).

On January 22, 2016, the Los Angeles Water Board approved, with conditions, the City of Gardena's (City's) 2nd revised IMP and directed the City to submit a final IMP that satisfied all of the conditions no later than February 22, 2016. The City submitted its final IMP on April 21, 2016. The Board has reviewed the City's final IMP and has determined that it does not satisfy all the conditions set forth in the Board's January 22, 2016 conditional approval letter. Therefore, the Board is rescinding its conditional approval of the City's IMP. Consequently, pursuant to Part VI.B.1 of the LA County MS4 Permit, the City must comply with the monitoring and reporting provisions in Attachment E, as described in detail below.

Summary of Board Review

On June 30, 2014, the City submitted its draft IMP for Los Angeles Water Board review. On January 16, 2015, the Los Angeles Water Board sent a letter to the City detailing the Board's comments on the draft IMP and identifying revisions that needed to be addressed prior to the

Board's approval of the City's IMP.¹ The City submitted its revised IMP on February 17, 2015. On August 10, 2015, the Los Angeles Water Board sent a second letter to the City detailing the Board's comments on the revised IMP and identifying remaining deficiencies that needed to be addressed prior to the Board's approval. The Los Angeles Water Board provided the City with the opportunity to submit a second revised IMP addressing the noted deficiencies. The City submitted its second revised IMP on September 23, 2015. After reviewing the City's second revised IMP, the Los Angeles Water Board sent a letter to the City on January 22, 2016 approving the City's IMP with conditions. The City was directed to submit a final IMP to the Los Angeles Water Board that satisfied all of the conditions in the letter and attachments no later than February 22, 2016. The City submitted its final IMP on April 21, 2016.

Rescission of Conditional Approval of IMP

As stated above, the Board reviewed the City's final IMP and determined that the submittal still does not meet the requirements for an IMP pursuant to Attachment E of the LA County MS4 Permit and does not satisfy all the conditions detailed in the Board's January 22, 2016 conditional approval letter. The Board, therefore, rescinds its January 22, 2016 conditional approval of the City's final IMP. No further opportunities to address the conditions of approval will be provided. A summary of the Board's comments, which identifies the conditions in the approval letter that have not been satisfied and other key deficiencies of the City's final IMP, is provided in **Enclosure 1**.

As the City does not have an approved IMP, the City is therefore immediately subject to the baseline monitoring and reporting requirements of the LA County MS4 Permit, as set forth in Attachment E and described below.

Directive to Commence Baseline Monitoring and Reporting as set forth in Attachment E

The City shall monitor and report pursuant to Attachment E of the LA County MS4 Permit, as described in **Enclosure 2** (Monitoring Requirements), **Enclosure 3** (Map of Monitoring Locations), and **Enclosure 4** (Aquatic Toxicity Monitoring Requirements). Enclosures 2, 3, and 4 contain the baseline monitoring requirements² specified in Attachment E of the LA County MS4 Permit. These baseline monitoring requirements include the elements set forth in Part II.E and further detailed in Parts V - XII: receiving water monitoring during wet and dry weather, stormwater outfall based monitoring, and non-stormwater outfall based screening and monitoring. The City is also required to maintain a database for tracking each new development and re-development subject to the requirements of Part VI.D.6 of the LA County MS4 Permit per Attachment E, Part X.

The monitoring locations in Table 1 of Enclosure 2 and in Figure 1 of Enclosure 3 were selected consistent with criteria in Attachment E, Parts VI – IX and XI – XII of the LA County MS4

¹ The City of Gardena's submittals and the Los Angeles Water Board's correspondence can be found at: http://www.swrcb.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/gardena/index.shtml

² Baseline monitoring requirements are those monitoring requirements set forth in Attachment E that a Permittee is subject to where the Permittee does not have an approved IMP or CIMP.

Permit.³ Enclosure 2 also identifies TMDL compliance monitoring that the City is required to conduct per Attachment E and Attachment N Part E (Dominguez Channel and Greater Harbor Waters Toxic Pollutants TMDL) of the LA County MS4 Permit.

Additionally, the City shall immediately implement a non-stormwater outfall-based screening and monitoring program, as required in Attachment E, Parts IX.A, IX.B, and IX.C-H of the LA County MS4 Permit. The non-stormwater outfall-based screening and monitoring program must use one of the following thresholds for field measurements to determine whether the non-stormwater discharge is significant:

1. Observed flow greater than a garden hose flow (>10 gpm), OR
2. Evidence that the non-stormwater discharge reaches the receiving water during dry weather and laboratory analysis for TSS, where the laboratory result shows that TSS exceeds the Reporting Limit of 2.0 mg/L⁴ in the non-stormwater discharge.

The City shall screen each of its MS4 outfalls at least 3 times in order to determine the presence of significant non-stormwater discharge. The City must complete the screening and on the basis of the screening, identify all of its MS4 outfalls that have significant non-stormwater discharges, no later than May 19, 2017. If the City detects significant non-stormwater discharges at an outfall two or more times, it shall monitor that outfall thereafter as per Attachment E, Part IX.G-H of the LA County MS4 Permit.

The City shall demonstrate compliance with Receiving Water Limitations pursuant to Part V.A.1 and all applicable interim and final water quality-based effluent limitations in Part VI.E and Attachment N (Part E) pursuant to Part VI.E.2.d.i.(1)-(3) and/or Part VI.E.2.e.i.(1)-(3) in the LA County MS4 Permit.

Accordingly, the City must commence monitoring as described herein (including Enclosures 2 through 4) within 30 days of the date of this letter. Please note that the City is responsible for complying with all LA County MS4 Permit reporting provisions included in:

- Attachment E, Parts XIV to XVIII;
- Attachment E, Part XIX.C, "Reporting Requirements for Dominguez Channel and Greater Harbors Waters WMA TMDLs;" and
- Attachment D, Parts IV, V, and VII.A.

Finally, the City is also responsible for complying with the requirements below pertaining to Annual Reporting.

Annual Reporting

Pursuant to Attachment E, Part XVIII of the LA County MS4 Permit, the City's Annual Report shall provide an Integrated Monitoring Report that summarizes all identified exceedances of:

³ Stormwater discharges from the MS4 may be monitored at outfalls or alternative access points such as manholes at the Permittee's jurisdictional boundary. The drainage(s) to the selected outfall(s) or alternative access point(s) must be representative of the land uses within the Permittee's jurisdiction. (Attachment E Part VIII.A of the LA County MS4 Permit)

⁴ See SWAMP 2015 Revised Freshwater Reporting Limits. Conventional Parameters in Freshwater: Aqueous Solids. http://www.waterboards.ca.gov/water_issues/programs/swamp/2015_revised_limits.shtml (Accessed on 10/14/16).

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- o outfall-based stormwater monitoring data,
- o wet weather receiving water monitoring data,
- o dry weather receiving water monitoring data, and
- o non-stormwater outfall monitoring data

against all applicable receiving water limitations, water quality-based effluent limitations, non-storm water action levels, and aquatic toxicity thresholds as defined in Attachment E. All sample results that exceed one or more applicable thresholds shall be readily identified.

The Annual Report shall also include a Municipal Action Level (MAL) Assessment Report, which shall present the stormwater outfall monitoring data in comparison to the applicable MALs, and identify those subwatersheds with a running average of twenty percent or greater of exceedances of the MALs in discharges of stormwater from the MS4. Pursuant to Attachment G, Part VIII of the LA County MS4 Permit, Permittees are required to submit a MAL Action Plan with the Annual Report to the Los Angeles Water Board, for those subwatersheds with a running average of twenty percent or greater of exceedances of the MALs in any discharge of storm water from the MS4. The deadline for submitting the MAL Action Plan was December 15, 2015; therefore the City shall submit a Plan to the Los Angeles Water Board by June 15, 2017 as part of its semi-annual reporting of monitoring results per Attachment E, Part XIV.L.

Additionally, the City shall indicate which criterion (of those specified above) was used to determine a significant non-stormwater discharge in the Annual Report.

If you have any questions, please contact Ms. Erum Razzak of the Storm Water Permitting Unit by electronic mail at Erum.Razzak@waterboards.ca.gov or by phone at (213) 620-2095. Alternatively, you may also contact Mr. Ivar Ridgeway, Chief of the Storm Water Permitting Unit, by electronic mail at Ivar.Ridgeway@waterboards.ca.gov or by phone at (213) 620-2150.

Sincerely,



Samuel Unger, P.E.
Executive Officer

cc: John Felix, City of Gardena
Ray Tahir, TECS Environmental, Inc.

Enclosures: Enclosure 1 – Summary of Comments and Deficiencies
Enclosure 2 – Monitoring Requirements
Enclosure 3 – Map of Monitoring Requirements
Enclosure 4 – Memorandum from Executive Officer to LA County MS4
Permittees Clarifying Aquatic Toxicity Monitoring Requirements

Los Angeles Regional Water Quality Control Board

Enclosure 1 – Summary of Conditions of Approval Not Met and Other Deficiencies¹

City of Gardena's Final IMP

1. The only receiving water monitoring station proposed in the IMP is located upstream of, not in, the Dominguez Channel Estuary. As per Attachment K Table K-13 of the LA County MS4 Permit, the City is subject to the WLAs for Dominguez Channel Estuary. Therefore, Section 1.3 of the IMP must propose a TMDL compliance monitoring site for Dominguez Channel Estuary in proximity to the City's point of discharge.
2. As per the Dominguez Channel, Torrance Lateral, and Dominguez Channel Estuary Monitoring Plan in the Harbor Toxics TMDL, the IMP does not adequately provide details about the water column, sediment, and fish tissue monitoring for Dominguez Channel and Dominguez Channel Estuary. The IMP must include information on how the City would demonstrate compliance with the applicable TMDL requirements in the Harbor Toxics TMDL, including details on monitoring requirements for water, sediment, and fish tissue as set forth in the previous Los Angeles Water Board's (August 10, 2015) comment letter.
3. Although the IMP states that each of the field screening points is representative of land uses within the City's jurisdiction, there is insufficient justification for selection of the points.
4. Storm drain outfall catchment area (drainage area) maps for each major outfall within the City's jurisdiction are missing. The IMP must include storm drain outfall catchment areas for each major outfall, or if not currently available, provide a schedule for delineating the catchment areas and submitting the delineations to the Los Angeles Water Board. Section 1.12 contains inadequate non-stormwater outfall-based monitoring.
5. In Section 1.5, the screening frequency for identifying significant non-stormwater discharges is unclear.
6. The IMP is not specific on how a significant non-stormwater discharge will be determined. Greater specificity on thresholds for field measurements, including flow and water quality data that will be used to determine whether a non-stormwater discharge is significant (e.g., flow greater than a garden hose) is required. Monitoring for PCBs in sediment or water is insufficient as proposed. Monitoring should be reported as the summation of aroclors and a minimum of 40 (and preferably at least 50) congeners.
7. The IMP contains language stating that the City is not required to comply with certain required elements specified in Attachment E (i.e. receiving water limitations, wet weather WQBELs, and Action Levels). Note that while the permit provided an opportunity for Permittees to customize, within certain constraints, its monitoring program, the basic monitoring elements and the permit's compliance requirements, including those related to numeric limitations and action levels, are not customizable. Compliance will be determined as per the LA County MS4 Permit.

¹ This enclosure does not provide a comprehensive enumeration of all unaddressed conditions and deficiencies. Rather, it highlights the most significant of them.

8. Section 1.9 Toxicity Monitoring was not revised to align with or reference the clarification memo on toxicity monitoring issued in August 2015 (Enclosure 4). The figure just before Section 1.17 should also refer to the clarification memo.
9. Typographical errors, such as:
 - a. Tables and Sections were removed from the IMP, but the remaining tables/sections were not re-numbered accordingly.
 - b. Tables IV and V are missing totals for the drainage areas.
 - c. The description of the representative field screening points in Section 1.4, page 4, is not correct: "Four screening points have been selected for Dominguez Channel (above Vermont Avenue). Each located upstream of five outfalls." The final IMP proposed two screening points, not four.
 - d. Table IV – Land Use Breakdowns for HUC 12 Drainage Areas displays only one HUC 12 drainage area (Upper Dominguez Channel, 576 Acre), yet includes columns and data for two HUC 12 Drainage Areas.
 - e. Section 1.14 was not properly aligned with Section 1.5 to clarify the distinction between the two sections.
 - f. In Section 1.16, Item II. *Non-stormwater outfall based sampling Protocol*, the last two sentences inappropriately relate to flow monitoring for stormwater outfall monitoring.

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Enclosure 2 – Monitoring Requirements

City of Gardena

Enclosure 2 contains monitoring locations and monitoring requirements specified in Attachment E of the LA County MS4 Permit, including receiving water monitoring during wet and dry weather, stormwater outfall based monitoring, non-stormwater outfall based screening and monitoring, and aquatic toxicity monitoring. Enclosure 2 also identifies TMDL compliance monitoring that the City is required to conduct per Attachment E and Attachment N Part E (Dominguez Channel and Greater Harbor Waters Toxic Pollutants TMDL) of the LA County MS4 Permit. Furthermore, Attachment E Part VI.C–D, Part VIII.B, and Part IX.G of the LA County MS4 Permit require monitoring for 303(d) listed pollutants. Because the City of Gardena discharges to a 303(d) listed waterbody (Dominguez Channel and the Dominguez Channel Estuary), it must monitor these pollutants.

Table 1. City of Gardena Required Monitoring Locations¹

Station/Site ID	Description	Waterbody	Latitude	Longitude	Details
FS3	Stormwater - Outfall	Dominguez Channel	33.901836	-118.324964	S. Normandie Ave
FS4	Stormwater - Outfall	Dominguez Channel	33.872029	-118.298876	Western & Artesia Blvd
R1	Receiving Water / TMDL	Dominguez Channel/Dominguez Channel Estuary	33.871472	-118.290794	Vermont Ave.

¹ All of the monitoring locations in Table 1 (above) and Enclosure 3 (Map of Monitoring Locations) were selected consistent with criteria in Attachment E, Parts VI – IX of the LA County MS4 Permit. Some of the locations in Table 1 (FS3 and FS4) were also proposed by the City of Gardena in their final IMP submitted to the Los Angeles Water Board on April 21, 2016.

Table 2. City of Gardena Monitoring Requirements

Constituent	Annual Frequency (number wet events/number dry events)		
	Dominguez Channel Watershed ²		
	Receiving Water ³ and TMDL ⁴	Stormwater ⁵	Non-Stormwater ⁶
	R1	FS3/FS4	
Pollutants identified in Attachment E Table E-2 of the LA County MS4 Permit	3/2 ⁷	3/0 ⁸	9
Aquatic Toxicity ¹⁰	2/1 ¹¹	¹²	¹³
Total Suspended Solids (TSS)	3/2	3/0	
Suspended-Sediment Concentration (SSC) ¹⁴	3/2	3/0	
Flow	3/2	3/0	0/4
Hardness	3/2	3/0	
pH	3/2	3/0	
Dissolved Oxygen	3/2	3/0	
Temperature	3/2	3/0	
Specific/Electrical Conductivity	3/2	3/0	
<i>E. coli</i>	3/2	3/0	0/4
Copper	3/2	3/0	0/4
Lead	3/2	3/0	0/4
Zinc	3/2	3/0	0/4

² In addition to Attachment N Part E.2.a.ii, samples of non-stormwater collected from outfalls during flow conditions less than the 90th percentile of annual flow rates must demonstrate that the acute and chronic hardness dependent water quality criteria (for copper, lead, and zinc) provided in the California Toxics Rule (CTR) are achieved (see Attachment N Part E.3.a.ii, footnote 6 of the LA County MS4 Permit).

³ Monitoring shall occur as per Attachment E Part VI.B-C of the LA County MS4 Permit. Dry weather monitoring will occur in July, the historically driest month.

⁴ Monitoring for the Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL for Dominguez Channel and Dominguez Channel Estuary will occur at monitoring site R1.

⁵ Monitoring and sampling shall occur as per Attachment E Part VIII.B-C of the LA County MS4 Permit.

⁶ Sampling shall occur as per Attachment E Part IX.H of the LA County MS4 Permit.

⁷ Wet weather receiving water Table E-2 constituents monitoring requirements per Attachment E Part VI.C.1.e and dry weather receiving water Table E-2 constituents monitoring requirements per Attachment E Part VI.D.1.d of the LA County MS4 Permit.

⁸ Other parameters in Table E-2 identified as exceeding the lowest applicable water quality objective in the nearest downstream receiving water monitoring station per Part VI.C.1.e (Attachment E Part VIII.B.1.d) of the LA County MS4 Permit.

⁹ Other parameters in Table E-2 identified as exceeding the lowest applicable water quality objective in the nearest downstream receiving water monitoring station per Part VI.D.1.d (Attachment E Part IX.G.1.e) of the LA County MS4 Permit.

¹⁰ Aquatic toxicity shall be monitored in accordance with Part XII of Attachment E, and as detailed in the Los Angeles Regional Board August 7, 2015, Memorandum titled "Clarification Regarding Follow-up Monitoring Requirements in Response to Observed Toxicity in Receiving Waters Pursuant to the Monitoring & Reporting Program (Attachment E) of the Los Angeles County MS4 Permit (Order No. R4-2012-0175)".

¹¹ Minimum wet weather receiving water monitoring requirements per Attachment E Part VI.C.1.d.vi, and minimum dry weather receiving water monitoring requirements per Attachment E Part VI.D.1.c.vi of the LA County MS4 Permit.

¹² Minimum storm water outfall based monitoring requirements per Attachment E Part VIII.B.1.c.vi of the LA County MS4 Permit.

¹³ If the discharge exhibits aquatic toxicity, then a TIE shall be conducted per Attachment E Part IX.G.1.d. of the LA County MS4 Permit.

¹⁴ Pursuant to Attachment E, Part III.G.1 of the LA County MS4 Permit, Suspended Sediment Concentration (SSC) shall be analyzed per American Society for Testing and Materials (ASTM) Standard Test Method D-3977-97.

Constituent	Annual Frequency (number wet events/number dry events)		
	Dominguez Channel Watershed ²		
	Receiving Water ³ and TMDL ⁴	Stormwater ⁵	Non- Stormwater ⁶
	R1	FS3/FS4	
PCBs ¹⁵	3/2	3/0	0/4
PAHs	3/2	3/0	0/4
DDTs ¹⁶	3/2	3/0	0/4
Chlordane	2/1		
Dieldrin	2/1		
Ammonia	3/2	3/0	0/4
Benzo[a] Pyrene (3,4-Benzopyrene -7-d)	3/2	3/0	0/4
Benzo[a] Anthracene	3/2	3/0	0/4
Chrysene (C1-C4)	3/2	3/0	0/4
Phenanthrene	3/2	3/0	0/4
Pyrene	3/2	3/0	0/4
Municipal Action Levels (MALs) ¹⁷		3/0	
Non-Stormwater Action Levels (ALs) ¹⁸			0/4
Sediment Monitoring	¹⁹		
Fish Tissue Monitoring	²⁰		

¹⁵ High Resolution (EPA 1668); monitoring for PCBs in sediment or water should be reported as the summation of aroclors and a minimum of 40 (and preferably at least 50) congeners. See Table C8 in the state's Surface Water Ambient Monitoring Program's Quality Assurance Program Plan (page 72 of Appendix C).

¹⁶ High Resolution (EPA 1699); DDTs include DDT, DDE, DDD, and Total DDT.

¹⁷ Municipal action level monitoring pursuant to Attachment G Part VIII of the LA County MS4 Permit.

¹⁸ Non-stormwater action level monitoring pursuant to Attachment G Part III of the LA County MS4 Permit.

¹⁹ Refer to Table 3. Sediment and Fish Tissue Monitoring Requirements.

²⁰ Ibid.

Table 3. Sediment and Fish Tissue Monitoring Requirements²¹

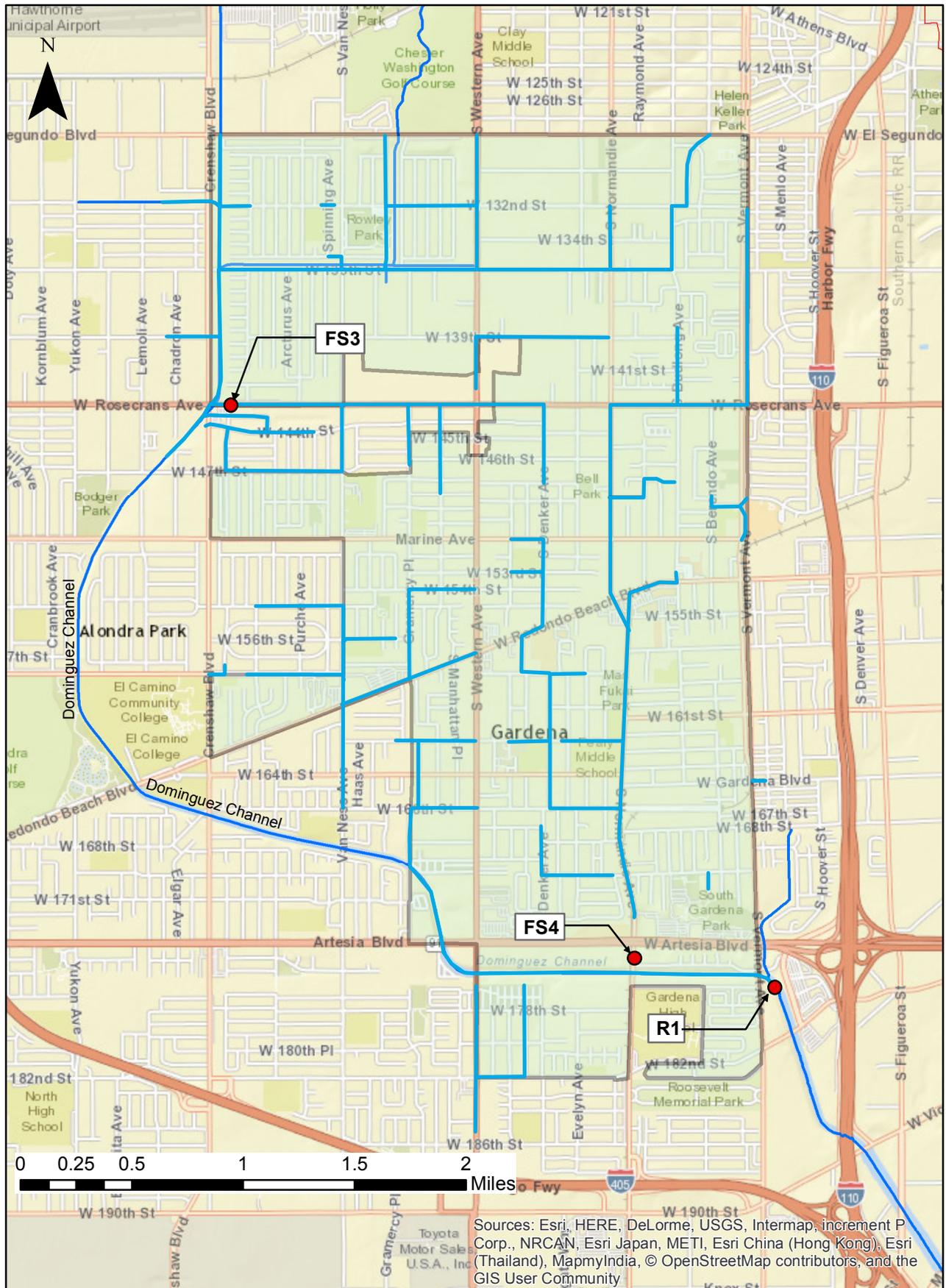
Parameter	Frequency
Sediment Monitoring ²²	
Copper	Once every 2 years
Lead	
Mercury	
Zinc	
Cadmium	
PAHs	
Chlordane	
DDD, total	
DDE, total	
DDT, total	
PCBs, total	
Total Organic Carbon (TOC)	
Grain Size	
Sediment Toxicity	
Benthic Community	
Fish Tissue	
Chlordane	Once every 2 years
Dieldrin	
Toxaphene	
DDT	
PCBs ²³	

²¹ Sediment and fish tissue monitoring requirements pursuant to Attachment N, Part E of the LA County MS4 Permit.

²² Pursuant to Attachment N, Part E.4.d.iv of the LA County MS4 Permit, samples shall be collected in accordance with SWAMP protocols and for analysis of general sediment quality constituents and the full chemical suite as specified in the State Water Board's Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality (SQO).

²³ See footnote 15.

Enclosure 3 - Map of Monitoring Locations



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Figure 1. City of Gardena Monitoring Stations

Los Angeles Regional Water Quality Control Board

TO: Los Angeles County MS4 Permittees and City of Long Beach

FROM: Samuel Unger, P.E.
Executive Officer 

DATE: August 7, 2015

SUBJECT: CLARIFICATION REGARDING FOLLOW-UP MONITORING REQUIREMENTS IN RESPONSE TO OBSERVED TOXICITY IN RECEIVING WATERS PURSUANT TO THE MONITORING & REPORTING PROGRAM (ATTACHMENT E) OF THE LOS ANGELES COUNTY MS4 PERMIT (ORDER NO. R4-2012-0175)

The Los Angeles County MS4 Permit, Attachment E requires chronic aquatic toxicity monitoring in receiving waters during both wet and dry weather conditions to determine whether designated beneficial uses are fully supported. Further, Attachment E requires additional monitoring at MS4 outfalls where aquatic toxicity is present above a certain effect level in downstream receiving waters to determine whether MS4 discharges are causing or contributing to the aquatic toxicity. In this situation, outfall monitoring must either entail monitoring for specific pollutants identified in a toxicity identification evaluation (TIE) in the downstream receiving water, or for aquatic toxicity itself, where the specific pollutants could not be identified through the TIE conducted on the downstream receiving water.

In its comments on the draft Integrated Monitoring Programs (IMPs) and Coordinated Integrated Monitoring Programs (CIMPs) submitted per the Los Angeles County MS4 Permit, the Los Angeles Water Board provided clarification and recommendations to Permittees regarding aquatic toxicity monitoring, particularly pertaining to the requirement to conduct chronic toxicity tests in dry and wet weather conditions and requirements for conducting a TIE and outfall monitoring. Subsequently, on December 9, 2014, Board staff met with several Permittees regarding its comments. During this meeting it was apparent that further clarification was necessary regarding requirements for follow-up monitoring when aquatic toxicity is present in downstream receiving waters. This memo provides additional clarification and applies to all IMPs and CIMPs developed pursuant to Part VI.B of the Los Angeles County MS4 Permit and Part VII.B of the City of Long Beach MS4 Permit.

It is acknowledged, however, that this memo may not address every situation that is encountered. We encourage the Permittees to approach toxicity testing and the TIE and TRE procedures thoughtfully and thoroughly in the interest of identifying and eliminating any source(s) of toxicity in MS4 discharges as expeditiously as possible and to consult with Los Angeles Water Board staff if you need assistance or clarification.

If you have any questions regarding these clarifications, please contact Renee Purdy at Renee.Purdy@waterboards.ca.gov or Shirley Birosik at Shirley.Birosik@waterboards.ca.gov.

The memo addresses requirements for follow-up monitoring in four **receiving water** scenarios where toxicity is present:

- Toxicity is present, but not above the TIE trigger as defined in Attachment E, Part XII.I.1¹;
- Toxicity is present above the TIE trigger and the TIE identifies the constituent(s) causing the toxicity;
- Toxicity is present above the TIE trigger during wet weather, but the TIE is inconclusive; and
- Toxicity is present above the TIE trigger during dry weather, but the TIE is inconclusive.

The memo also addresses the several scenarios once **outfall** toxicity testing has been triggered. Attached to the memo are several simplified flowcharts to aid in understanding the process.

An inconclusive TIE is defined as a TIE for which the cause of toxicity cannot be attributed to a constituent or class of constituents (e.g., metals, insecticides, etc.) that can be targeted for monitoring even after conducting appropriate Phase I and Phase II TIE treatments. This outcome may result from either non-persistent toxicity such that the TIE treatments cannot be successfully completed on the toxic sample, or from the inability with available Phase I and Phase II TIE

An **inconclusive TIE** is one for which the cause of toxicity cannot be identified after the conclusion of TIE Phases I and II.

If a TIE is inconclusive:

- ✓ Check QA/QC
- ✓ Evaluate sensitive species selection
- ✓ Initiate future TIEs earlier (to address non-persistent toxicity)
- ✓ Conduct all phases of TIE

treatments to isolate the constituent or class of constituents causing the toxicity. If the TIE is inconclusive due to non-persistent toxicity, the Los Angeles Water Board expects that Permittees will proactively identify and implement actions during the subsequent upstream and/or outfall toxicity sampling event to improve the likelihood of a conclusive TIE, while also following the steps below. Where a TIE is inconclusive due to the inability to determine the constituent(s) causing the toxicity, Permittees should evaluate further steps to improve the TIE outcome including sensitive species selection, QA/QC, and the need to conduct Phases I through III of a TIE, among others.

¹ Permit references correspond to the Los Angeles County MS4 Permit (Order No. R4-2012-0175)

TRIGGERS FOR ADDING TOXICITY MONITORING TO UPSTREAM RECEIVING WATER MONITORING / OUTFALL MONITORING:

1. If toxicity is present as determined based on a fail of the Test of Significant Toxicity (TST) t-test as specified in the Permit (Attachment E, Part XII.G.4) during wet or dry weather, but not above the TIE trigger (which is defined as when the survival or sublethal endpoint demonstrates a ≥ 50 Percent Effect at the IWC as per Attachment E, Part XII.I.1), then:
 - a. Toxicity monitoring will be added to the next existing upstream receiving water site(s) during the same condition (wet or dry weather) for which toxicity was determined to be present. Monitoring for toxicity at the next existing upstream receiving water site(s) will occur during the next monitoring event that is at least 30 days following the original toxicity sample collection. Toxicity monitoring at individual receiving water sites will continue until (1) the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition) is met at the receiving water site or (2) a TIE is triggered and conclusively identifies the constituent or class of constituents causing toxicity, in which case the process outlined in Bullet 2 below is followed. OR
 - b. If there is no upstream receiving water monitoring site already established as part of the monitoring program, continue receiving water toxicity monitoring at the original site until (1) the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition) is met at the original receiving water site or (2) a TIE is triggered at the original site and conclusively identifies the constituent or class of constituents causing toxicity, in which case the process outlined in Bullet 2 below is followed. Also, conduct an evaluation similar to the TRE outlined in Attachment E, Part XII.J to identify, to the extent practicable, the source(s) of toxicity with the goal of identifying cause(s) of toxicity, paying particular attention to sources of potential constituent(s) causing toxicity (e.g., fipronil).
 - i. If there is no upstream receiving water monitoring site already established as part of the monitoring program and toxicity is present during dry weather, actions taken as part of the non-stormwater program (e.g., source identification and elimination or treatment of unauthorized non-stormwater discharges that are a source of pollutants) should be utilized to support the TRE.
 - ii. If there is no upstream receiving water monitoring site already established as part of the monitoring program and toxicity is present during wet weather, consider the following actions to support TRE: evaluating land uses and potential associated source(s) in the drainage area, evaluation of other permitted discharges, and evaluation of inspection activities. AND
 - c. If there is no upstream receiving monitoring site already established as part of the monitoring program and more than one occurrence of a fail of the TST t-test occurs at the original receiving water site within 3 years, then evaluate opportunities to conduct toxicity monitoring at upstream receiving water sites (either newly established or sites utilized by other monitoring programs), including tributaries.

2. If toxicity is present at a level exceeding the TIE trigger and the TIE identifies the constituent or class of constituents causing toxicity, then:
 - a. Do not add toxicity monitoring to upstream sites. AND
 - a. During the same condition, add the identified constituent or constituents within the class of constituents² to the monitoring site where toxicity was identified, the upstream receiving water site(s), and upstream outfall site(s) starting with the next monitoring event that is at least 45 days following the toxicity sample collection. Monitoring for the identified constituent(s) will continue until the deactivation criterion (i.e., two consecutive samples do not exceed Receiving Water Limitations (RWLs), Water Quality Based Effluent Limitations (WQBELs), or other appropriate threshold or guideline if there is no numeric RWL or WQBEL, for the identified constituents during the same condition) is met at the individual site. Where constituent(s) are identified in the outfall(s) above the RWL(s), WQBEL(s), or other appropriate threshold or guideline commence TRE at each corresponding outfall location per Attachment E, Part XII.J.
3. If toxicity is present at a level exceeding the TIE trigger during wet weather and the TIE is inconclusive, then:
 - a. Add toxicity monitoring to the next existing upstream receiving water site(s) during the next monitoring event that is at least 45 days following the original toxicity sample collection. Toxicity monitoring at individual receiving water site(s) will continue until (1) the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition) is met at the receiving water site or (2) a TIE is triggered and conclusively identifies the constituent or class of constituents causing toxicity, in which case the process outlined in Bullet 2 above is followed. AND
 - b. The second inconclusive TIE in 3 years during wet weather would trigger outfall toxicity testing at upstream outfall sites (i.e., (1) outfall sites located between the receiving water site and the nearest upstream receiving water site located on the same waterbody and (2) outfall sites located on tributaries that have a confluence with the waterbody where the confluence is located between the receiving water site and the nearest upstream receiving water site located on the same waterbody) following the process outlined below in “Steps Related Outfall Toxicity Testing” during the next monitoring event that is at least 45 days following the original toxicity sample collection. OR
 - c. As an alternative to the outfall monitoring described in Bullet 3.b., Permittees may propose an alternative approach any time after the first inconclusive TIE, which could include utilizing upstream receiving water sites (either newly established or sites utilized by other monitoring programs), including tributaries, additional outfall sites, and/or different outfall sites. However, the outfall monitoring approach described in Bullet 3.b. must be followed until Regional Water Board EO approval of the alternative approach.

² Using appropriate detection limits

4. If toxicity is present at a level exceeding the TIE trigger during dry weather and the TIE is inconclusive, then:
 - a. Add toxicity monitoring to the next existing upstream receiving water site(s) during the next monitoring event that is at least 45 days following the original toxicity sample collection. Toxicity monitoring at individual receiving water site(s) will continue until (1) the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition) is met at the receiving water site or (2) a TIE is triggered and conclusively identifies the constituent or class of constituents causing toxicity, in which case the process outlined in Bullet 2 above is followed during the next monitoring event that is at least 45 days following the original toxicity sample collection. AND
 - b. Add toxicity testing to upstream outfall sites (i.e., (1) outfall sites located between the receiving water site and the nearest upstream receiving water site located on the same waterbody and (2) outfall sites located on tributaries that have a confluence with the waterbody where the confluence is located between the receiving water site and the nearest upstream receiving water site located on the same waterbody) following the process outlined below in “Steps Related Outfall Toxicity Testing” during the next monitoring event that is at least 45 days following the original toxicity sample collection. OR
 - c. As an alternative to the outfall monitoring described in Bullet 4.b above, Permittees may propose an alternative approach any time after the first inconclusive TIE, which could include utilizing upstream receiving water sites (either newly established or sites utilized by other monitoring programs), including tributaries, additional outfall sites, and/or different outfall sites. However, the outfall monitoring approach described in Bullet 4.b above must be followed until Regional Water Board EO approval of the alternative approach.

STEPS RELATED TO OUTFALL TOXICITY TESTING ONCE TRIGGERED:

1. If toxicity is not present as determined based on pass of the TST t-test as specified in the Permit, then continue toxicity testing during the same condition
2. (i.e. wet or dry weather) until (1) meeting the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition), or (2) a TIE conducted at the downstream receiving water site conclusively identifies the constituent or class of constituents causing toxicity, or (3) the discharge is eliminated.
3. If toxicity is present as determined based on fail of the TST t-test as specified in the Permit, but not above the TIE trigger, then continue toxicity testing during the same condition until (1) meeting the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition), or (2) a TIE conducted at a downstream receiving water site conclusively identifies the constituent or class of constituents causing toxicity, or (3) the discharge is eliminated. Concurrently conduct an evaluation similar to the TRE in Attachment E, Part XII.J to identify, to the extent practicable, the source(s) of toxicity with the goal of addressing cause(s) of toxicity, paying particular attention to sources of potential constituent(s) causing toxicity (e.g., fipronil).

- a. If toxicity is present in the non-stormwater discharge, actions taken as part of the non-stormwater program (e.g., source identification and elimination or treatment of unauthorized non-stormwater discharges that are a source of pollutants) should be utilized to support the TRE.
 - b. If toxicity is present in the stormwater discharge, consider the following actions to support the TRE: evaluating land uses and potential associated source(s) in the drainage area, evaluation of other permitted discharges, and evaluation of inspection activities.
4. If toxicity is present at a level exceeding the TIE trigger and the TIE identifies the constituent or class of constituents causing toxicity, then:
- a. Discontinue toxicity testing at the outfall. AND
 - b. Add the identified constituent or constituents within the identified class of constituents³ during the same condition starting with the next monitoring event that is at least 45 days following the toxicity sample collection and monitor for those constituents at the outfall until meeting the deactivation criterion for those constituents (i.e., two consecutive samples do not exceed RWLs, WQBELs, or other appropriate threshold or guideline if there is no numeric RWL or WQBEL, for identified constituents), while simultaneously performing a TRE for the constituent(s) causing toxicity per Attachment E, Part XII.J.
5. If toxicity is present at a level exceeding the TIE trigger and the TIE is inconclusive, then continue toxicity testing during the same condition until (1) meeting the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition), or (2) a TIE identifies the constituent or class of constituents causing toxicity (proceed with following the process outlined in Bullet 3, above), or (3) eliminate the discharge. Concurrently conduct an evaluation similar to the TRE in Attachment E, Part XII.J to identify, to the extent practicable, the source(s) of toxicity with the goal of addressing cause(s) of toxicity, paying particular attention to identifying sources of potential constituent(s) causing toxicity that may not have been evaluated in the TIE (e.g., fipronil).
- a. If the TIE is inconclusive in the non-stormwater discharge, actions taken as part of the non-stormwater program (e.g., source identification and elimination or treatment of unauthorized non-stormwater discharges that are a source of pollutants) should be utilized to support the TRE.
 - b. If the TIE is inconclusive in the stormwater discharge, consider the following actions to support the TRE: evaluating land uses and potential associated source(s) in the drainage area, evaluation of other permitted discharges, and evaluation of inspection activities.

³ Using appropriate detection limits

**Receiving Water Toxicity
Present but Does *NOT* Exceed
TIE Trigger**

Upstream
RW Site
Exists?

No

Yes

Continue monitoring toxicity at existing site
Conduct TRE-like evaluation
Evaluate potential for upstream monitoring

Add toxicity testing under same conditions (wet/dry)

**Receiving Water Toxicity
Present and Exceeds TIE
Trigger**

TIE Identifies
Pollutant(s)?

No

Yes

Wet or Dry
Weather?

Dry

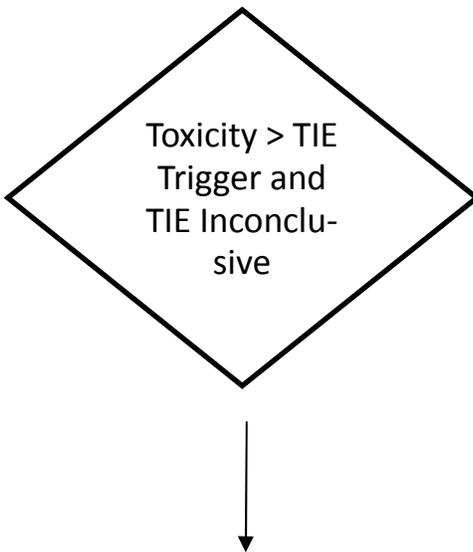
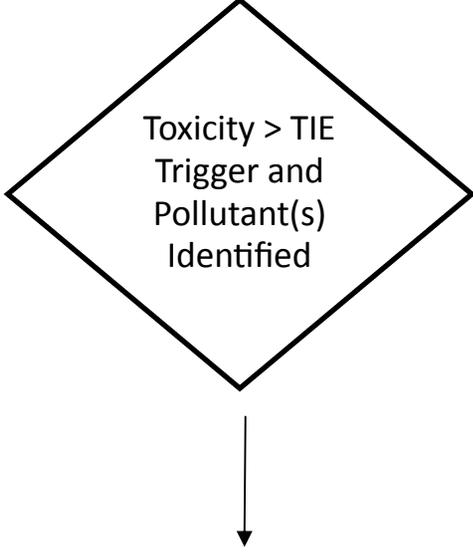
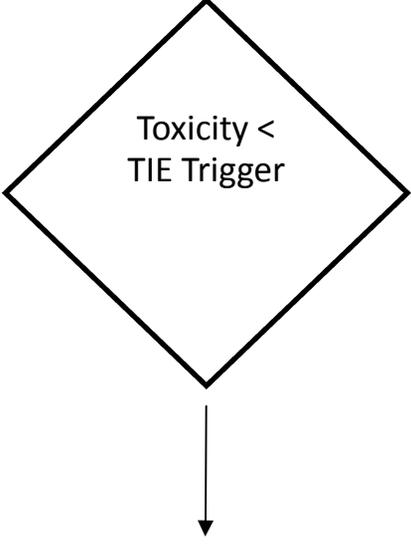
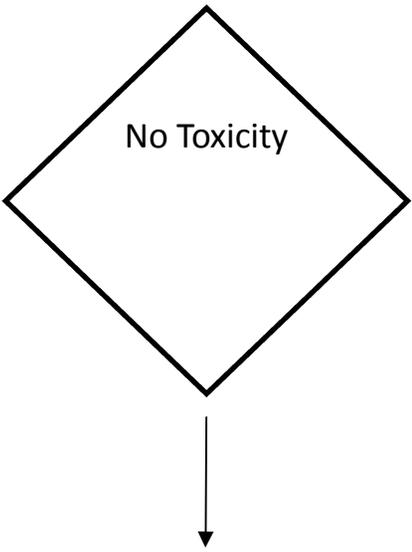
Wet

Add toxicity monitoring to up-
stream RW and outfall sites

Add toxicity monitoring to next
existing upstream RW site
After 2nd inconclusive TIE add
toxicity monitoring to outfall

Add Pollutant(s) to Monitoring at
Receiving Water Sites and Outfall
Sites
If > WQBEL/RWL, commence TRE

Outfall Toxicity Testing Once Triggered



Continue toxicity testing during same condition (wet/dry) until deactivation criterion met or until pollutant identified at RW site through TIE or discharge otherwise eliminated

Continue toxicity testing
Conduct TRE-like evaluation

Add pollutant(s) to monitoring
Conduct TRE

Continue toxicity testing
Conduct TRE-like evaluation