

Monitoring and Reporting Program

Section One



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Section One: Monitoring and Reporting Program (MRP)

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Section One Monitoring and Reporting Program (MRP)

1.0 Summary

The Los Angeles County MS4 permit (Order R4-2012-0175) includes compliance with a Monitoring and Report Program (No. CI-6948), (MRP). The MRP addresses the several types of monitoring required by the permit, including: (1) TMDL monitoring at the outfall and receiving water; (2) municipal action levels (MALs) monitoring at the outfall; (3) monitoring action levels (non-stormwater) at the outfall; (4) new development/re-development effectiveness tracking (limited to observations); (4) compliance with municipal action level (MAL) parameters; (5) regional studies; and (6) toxicity testing. The City intends to meet these requirements through its **Coordinated Integrated Monitoring Program (CIMP)** submittal.

In addition to the above monitoring requirements, the WMP section of the permit also appears to require additional monitoring not referenced in the MRP (VI.C.2.a.i and ii). Essentially, these provisions require monitoring of stormwater discharges against water quality standards that are not TMDLs either contained in the basin plan or based on federal regulations. The purpose of the monitoring is to facilitate an evaluation of the adequacy of control measures in meeting the specified limitations. The problem, however, is that permit under the WMP section does not specify which pollutants and water quality standards must be monitored for or to be met. Discussions with Regional Board staff revealed that the water quality standards are mandated by federal regulations. They can be taken from the previous permit under the previous MS4 permit's MRP under Attachment U, which is referenced herein.



Pollutants subject to monitoring will be loaded into the RAA/Water Quality Model to evaluate to what extent the City is persistently exceeding TMDLs and other water quality standards and identify BMPs that are necessary to preventing such exceedances.

As is explained in the CIMP, there are several provisions of the permit reflected in the MRP and CIMP that the City cannot comply with because the City has challenged them in its administrative petition. These include, most notably, non-storm water action levels. The City expects these issues to be resolved through a State Board order which is expected to be issued this summer.

1.1 **Coordinated Integrated Monitoring Program**

The City has opted for a **Coordinated Integrated Monitoring Program** (CIMP) to comply with monitoring and SWMP/WMP requirements under the MS4 permit. In accordance with the MRP, the CIMP includes the following elements: (1) receiving water monitoring; (2) storm water outfall based monitoring; (3) non-storm water outfall based monitoring; and new development/re-development effectiveness tracking; (4) compliance with municipal action level (MAL) parameters; and (5) regional studies.

It is important to note that the City has complained in its administrative petition about the permit's excessive monitoring requirements which it argues are arbitrary and capricious and exceed federal stormwater regulations. These include any monitoring activity that is located outside an MS4 (toxicity, wet weather TMDL WLAs, regional studies, toxic investigation evaluation (TIE), etc.); and dry weather monitoring that exceeds for federal regulations (dry weather minimum levels, non-stormwater outfall monitoring, and non-stormwater action



levels). In the alternative the City will comply with federal field screening requirements for non-stormwater discharges.

1.2 CIMP Requirements

Through the Comprehensive Integrated Monitoring Program (CIMP), the City proposes to consolidate applicable monitoring program requirements as specified in attachment E of the MS4, which *provides flexibility to allow Permittees to coordinate monitoring efforts on a watershed or sub-watershed basis to leverage monitoring resources in an effort to increase cost-efficiency and effectiveness and to closely align monitoring with TMDL monitoring requirements and Watershed Management Programs*. To that end, the City intends to share costs with the cities of South El Monte and Irwindale to conduct ambient monitoring for Reach 3 of the San Gabriel River. The cities participation in ambient monitoring is voluntary. Though the SWAMP should be responsible for performing ambient monitoring, it is not known when, if ever, it intends to conduct ambient monitoring in these reaches. In the meantime, the City recognizes that the ambient monitoring approach will yield accurate data needed to evaluate the beneficial uses and facilitate compliance with ambient TMDL WLAs and other water quality standards.

The City does not plan to use a collaborative approach pay for monitoring in the receiving water to determine compliance with wet weather TMDLs because TMDLs are ambient not wet weather standards as explained below.

GIS maps has been developed to depict the geographic boundaries of the monitoring plan including the receiving waters, the MS4 catchment drainages and outfalls, sub-watershed boundaries, political boundaries, land use, and the proposed receiving water monitoring stations for both dry



weather and wet weather receiving water monitoring. Outfall monitoring points and existing ambient monitoring points are shown on the maps. Also shown are mass emissions stations and other in-stream monitoring stations. The maps are contained in **Appendix A**.

1.3 **Receiving Water Monitoring**

The MS4 permit requires receiving water monitoring to be performed at in-stream mass emissions stations; additional receiving water compliance points approved by the Regional Board's Executive Officer; and additional locations that are representative of impacts from MS4 discharges. The objectives of receiving water monitoring are: (1) determine if receiving water limitations are being achieved; (2) assess trends in pollutant concentrations over time, or during specified; and (3) determine whether the designated beneficial uses are fully supported based on water chemistry, as aquatic toxicity and bio-assessment monitoring.

The City's receiving water monitoring plan shall be limited to utilizing existing ambient water quality data developed by the Regional Board's Surface Water Ambient Monitoring Program (SWAMP) and data generated by other agencies including, but not limited to, the Council for Watershed Health (CWH) and the Sanitation Districts of Los Angeles County (SDLAC).

The City cannot participate in any receiving water monitoring activity or action that involves any action or activity outside of its MS4. As the City's administrative petition effectively argues, the receiving water is not part of the MS4. The City's responsibility for monitoring ends at the discharge from the outfall before it reaches the receiving water.



The City has also argued in its petition that federal storm water regulations and judicial decisions affirm that MS4 permit compliance with water quality standards (WQS) is determined at the outfall – not in the receiving water. The regulatory “range” of an MS4 permit ends in storm water discharge from the outfall before it reaches the receiving water. A receiving water, in other words, is not part of the MS4.

It should be noted that the 9th Circuit Court of Appeal in NRDC v. LACFCD made it very clear that the compliance determinant for MS4 discharges is at the outfall – not the receiving water. The 9th Circuit agreed with a lower federal court ruling that held violations cannot be determined in the receiving water because of evidentiary challenges: how can one prove that a permittee caused exceedances in receiving waters, waters which also receive stormwater discharges from other sources? The 9th Circuit also said if a violation is to be determined it must be based on discharges from the outfall.

Further, there is nothing in federal law or USEPA guidance, or state law that authorizes compliance with TMDL WLAs or other water quality standards based on wet weather monitoring of receiving waters. According to State Water Quality Order 2001-0015: *There is no provision in state or federal law that mandates the adoption of separate water quality standards for wet weather conditions.* TMDLS/Water quality standards are not and cannot be wet weather standards -- they are ambient (dry weather) standards. It should be obvious that sampling a wet weather discharge from a receiving water (not be confused with an outfall), against an ambient standard is unrealistic and serves no purpose.

There is also no benefit to performing receiving water monitoring to determine compliance with wet weather TMDL WLAs or to assess the health of the receiving water. Pollutants during a storm event emanate



from a variety sources including, but not limited to: permitted facilities such as industrial and construction sites; various municipal point sources; non-municipal point sources (e.g., sewage treatment plans) and non-point sources including atmospheric deposition. It would be impossible to determine which of these dischargers was responsible for exceeding a wet weather WLA, which again is not legally valid in any case. It should be clear that monitoring during a significant storm event would be of no value in assessing the health of the receiving water. In fact, it is the worse time to monitor. The City will, nevertheless, rely on in-stream ambient monitoring to assess the impact of the SWMP/WMP on the beneficial uses of the receiving waters into which it discharges in accordance with the schedule referenced below in Section 1.10.

1.4 **Storm Water Outfall-Based Monitoring**

The City is committed to stormwater monitoring at the outfall in accordance with federal stormwater regulations. Outfall monitoring will be limited to: (1) aiding in determining compliance with WQBELs (TMDL WLAs and other water quality standards measured against ambient standards); and (2) evaluating stormwater discharges against Municipal Action Levels (MALs). Outfall monitoring, however, cannot determine compliance with wet weather TMDL WLAs in the receiving water. Once again, there is no support for the legitimate existence of a wet weather TMDL or any water quality standard. Further, the purpose of the MALs is unclear and appears to be superfluous. However, the City would be willing to comply with MAL monitoring if offered as alternative to conventional monitoring for compliance purposes.

The City has identified two (3) outfalls from which discharges are released to Reach 3 of the San Gabriel River. The City intends to monitor



each of the outfalls in rotation over the term of the permit. No outfall prioritization is necessary.

It should be noted that the outfalls are not actual monitoring locations from which samples can be taken because they are located within LACFCD property which is not accessible to the City (see picture below). Instead, the City has identified the storm drain manhole points nearest to the outfall(s).



These are referred to in federal stormwater regulations as “field screening” points. Their locations indicate a mix of industrial, commercial, and residential uses and, therefore, are representative. Stormwater discharges from the outfall sampling points will be measured against ambient TMDL standards. The ambient standard is one that is required to assure that beneficial uses of receiving waters are protected against impairment. Sampling results will be reported to the Regional Board annually. If persistent exceedances of the ambient standards are detected, the iterative process will be triggered.

The City plans to conduct stormwater outfall monitoring three times a year, during the wet season (October 1 through May 15), with at least one



month in between in accordance with 40 CFR §122.21(g)(7). Each of the three outfalls is representative to the extent it includes drainage areas from a mix of land uses with the City being primarily residential. The City proposes to sample single field screening points from each of the three outfalls on a rotating basis. For example, field screening point 1, will be sampled first three times during the wet season; then field screening point 2 the following year, and field screening point 3 thereafter (see **Appendix A-1**).

At the end of the 5 year term of the permit the City will be able to evaluate persistent exceedances of TMDLs and other water quality standards and propose adjustments to BMPs and other actions in the Report of Waste Discharge (ROWD), the MS4 permit reapplication that is due to the Regional Board 180 days prior to the expiration of the current permit (May of 2017).

Although the City will use the data to determine compliance with WQBELs, expressed as ambient TMDL WLAs, and to measure stormwater discharges against municipal action levels (MALs), it cannot sanction the use of the data to determine compliance with TMDL WLAs in the receiving water. As mentioned, the City is not responsible for conducting any monitoring or any activity outside the realm of its MS4. Further, as also mentioned, the City cannot measure stormwater discharges from the outfall against wet weather standards because they are not legally valid.

1.5 **Non-Storm Water Outfall-Based Monitoring**

The City will not perform non-stormwater outfall monitoring to determine compliance with TMDLs, other water quality standards, and action levels. Such requirements exceed federal stormwater regulations. As already explained, MS4 permittees are required to control pollutants in



stormwater discharges from the outfall through BMPs and other actions. For non-stormwater discharges no such requirement is mandated. MS4 permittees are required only to prohibit impermissible (i.e., non-exempt) non-stormwater discharges into the MS4. If a permittee does not succeed in getting the discharger to prohibit the non-stormwater discharge it must require the discharger to obtain a separate discharge permit. This is an argument that was raised in the City's administrative petition and is supported by federal statute and State Board water quality orders.

However, the City will perform outfall visual and sampling monitoring in connection with illicit connection and discharge elimination requirements in keeping with federal stormwater regulations and USEPA guidance. Non-stormwater discharge monitoring will conform to 122.26(d)(1)(D) for the purpose of screening for illicit connections and dumping, which specifies visual monitoring at outfalls for dry weather (non-stormwater discharges). Visual monitoring shall be performed twice a year during dry periods. If flow is observed samples for the outfall (or field screening points):

...samples shall be collected during a 24 hour period with a minimum period of four hours between samples. For all such samples, a narrative description of the color, odor, turbidity, the presence of an oil sheen or surface scum as well as any other relevant observations regarding the potential presence of non-storm water discharges or illegal dumping shall be provided.

In addition, regulations require a narrative description of the results from sampling for fecal coliform, fecal streptococcus, surfactants (MBAS), residual chlorine, fluorides and potassium; pH, total chlorine, total copper, total phenol, and detergents (or surfactants) shall be provided along with a description of the flow rate. These analytes will be used as potential indicators of illicit discharges, which would trigger an up-stream investigation to identify the source of the suspected illicit discharge or



connection. If the source of the illicit discharge/connection and discharger is identified the City shall notify the discharger that it will need to halt the discharge and, if not feasible, will require the discharger to obtain a discharge permit.

Conducting visual monitoring of field screening points for non-stormwater discharges will be difficult for Reach 2 of the Rio Hondo. Outfalls in this flood control channel, as shown below, are equipped with iron flap gates that open to allow stormwater to be discharged to the floor of the channel.



The flap gate opens to a degree that is determined by the amount of stormwater flow expressed as cubic feet per second (cfs). It is estimated that the amount of flow that is needed to open the gate is at least 10 cfs from a one inch storm. During dry periods, non-stormwater cannot leave the storm drain connected to the flap-gated outfall. In other words, there will be no non-stormwater discharge releases to the channel and, therefore, monitoring for any purpose will not be possible or even necessary.



1.6 Municipal Action Levels

The purpose of municipal action levels (MALs) is not clear and appears to be superfluous given the permit's other monitoring requirements. All of the MAL constituents are already addressed by TMDLs and federally mandated monitoring for certain constituents¹. The MS4 permit's fact sheet mentions that the purpose of MAL monitoring is to evaluate the effectiveness of a Permittee's stormwater management program in reducing pollutant loads from drainage areas as a means of determining compliance with the maximum extent practical (MEP) standard. It is also intended to evaluate the effectiveness of post-construction BMPs. The permit, however, does not explain how MAL monitoring will accomplish those ends. Further, it is not clear how MALs can evaluate post-construction BMPs. One basic question is where would MAL monitoring be performed: at the development or new development site, for which post-construction BMPs have been prescribed, or down stream from it?

The City has challenged the MAL monitoring requirement in its administrative petition, based on these and other concerns. MAL monitoring represents an unnecessary cost that accomplishes nothing beneficial. Nevertheless, because MAL constituents are included in other stormwater monitoring requirements, the City will effectively be meeting this requirement. The permit's monitoring program also requires non-stormwater MAL compliance. As mentioned, the City has challenged all non-stormwater monitoring tasks that are intended to determine compliance with TMDLs and other water quality standards.

¹Total nitrogen, total phosphorous, Ammonia N, TKN, Total PCBs, Chlordane, Dieldrin, 4,4 – DDD, 4,4 – DDE, 4,4 – DDT, Cadmium, Chromium, copper, lead, zinc, E-Coli, fecal coliform.



1.7 New Development/Redevelopment Tracking

The PLDP requires tracking new development and redevelopment projects within 60 days after the permit's adoption (unless a permittee chooses to participate in watershed management program). Although not a monitoring requirement per se, permittees are nevertheless required to maintain a database containing the following information:

- name of the project and developer,
- project location and map (preferably linked to the GIS storm drain map),
- date of Certificate of Occupancy,
- 85th percentile storm event for the project design (inches per 24 hours),
- 95th percentile storm event for projects draining to natural water bodies
- (inches per 24 hours), related to hydromodification
- other design criteria required to meet hydromodification requirements for drainages to natural water bodies,
- project design storm (inches per 24-hours),
- project design storm volume (gallons or MGD),
- percent of design storm volume to be retained on site
- design volume for water quality mitigation treatment BMPs, if any.
- if flow-through, water quality treatment BMPs are approved, provide the one year, one-hour storm intensity as depicted on the most recently issued isohyetal map published by the Los Angeles County Hydrologist,
- percent of design storm volume to be infiltrated at an off-site mitigation or groundwater replenishment project site
- percent of design storm volume to be retained or treated with bio-filtration at an off-site retrofit project,
- location and maps (preferably linked to the GIS storm drain map required in Part VII.A of this MRP) of off-site mitigation, groundwater replenishment, or retrofit sites documentation of issuance of requirements to the developer.

The City intends to meet this requirement through a revised SUSMP evaluation form.



1.8 Regional/Special Studies

The City has taken the position that it is not responsible for performing any activity that lies outside of its MS4, the end of which is the outfall. The Regional Board studies referenced in the CIMP include activities in the receiving water, which lies outside of the MS4. In its administrative petition the City explained that neither federal regulations nor state law or water quality orders require performing monitoring or other activities outside of an MS4.

1.9 Toxicity Monitoring

The MRP of the MS4 permit requires toxicity testing at the outfall and in the receiving water. As mentioned, the City is not required under federal or state law to perform any monitoring in the receiving water. However, the City intends to perform outfall monitoring for toxics. Pesticide (PCBs and DDT) and metals (copper, lead, zinc, and selenium) at the outfalls. Water samples were tested with either of two different organisms: 7-day test with *Ceriodaphnia dubia* (growth, survival) and 7-day test with *Pimephales promelas* (biomass, survival).

1.10 Chemical TMDL Monitoring

Chemical TMDL sampling will be performed at field screening points for stormwater discharges at least three times a year in accordance with the MRP. Sampling and analysis will be in keeping with USEPA guidance. The tables below specify each TMDL WLA to which the City is subject.



Table I - San Gabriel River Watershed TMDLs

Wet Weather WLA			
Water Body	Copper	Lead	Zinc
San Gabriel River Reach 2 ²	N/A	81.34 mg/l x daily storm volume (L)	N/A
Coyote Creek ³	24.71 mg/l x daily storm volume (L)	96.99 mg/l x daily storm volume (L)	144.57 mg/l x daily storm volume (L)

Dry Weather			
Water Body	Copper	Selenium	N/A
Coyote Creek	20 mg/l	N/A	N/A
San Gabriel Estuary ⁴	3.7 mg/l	N/A	N/A
San Jose Creek Reach 1	NA	5 mg/l	N/A

1.11 TMDL Compliance Schedule

Tables III through VI below show the following compliance deadlines for: (1) interim and final TMDL waste load allocations (WLAs) for the metals and selenium TMDL for the San Gabriel River; (2) interim and final WLAs bacteria TMDL for Reach 2 of the Rio Hondo; (3) interim and final WLAs for the metals TMDL for the Rio Hondo; (4) interim and final nutrients TMDL WLAs for the Rio Hondo; and (5) trash TMDL for the Los Angeles River.

Table II - San Gabriel River Metals and Selenium TMDL

TMDL Pollutant	Target	Interim WLA
All Metals	<ul style="list-style-type: none"> 30% of the total drainage area meeting dry-weather WLAs & 10% meeting the wet-weather WLAs 	September 30, 2017
	<ul style="list-style-type: none"> 70% of the total drainage area meeting dry-weather WLAs & 35% meeting the wet-weather WLAs 	September 30, 2020

²The City does not drain into Reach 2 of the San Gabriel River.

³According to the 2010 303(d) list relating to Coyote Creek: (1) the source of dissolved copper is “unknown;” (2) the source of lead is “point source municipal waste water; and (3) zinc has been delisted.

⁴According to the 2010 303(d) list, the source of dissolved copper for the San Gabriel River Estuary is unknown.



TMDL Pollutant	Target	Final WLA
	<ul style="list-style-type: none"> 100% of the total drainage area meeting dry-weather WLAs & 65% meeting the wet-weather WLAs 	September 30, 2026

1.12 MAL Monitoring

Stormwater sampling against MAL analytes shall be performed at the same time stormwater monitoring is performed for other purposes and with the same frequency – three times during the wet season. The table below identifies the MAL analytes and their numeric limitations.

Table III - Municipal Action Levels

Metals	Unit	Total	Dissolved
Cadmium	ug/l	2	0.55
Copper	ug/l	32	12.8
Lead	ug/l	30.6	6
Zinc	ug/l	232	104
Nickel	ug/l	9.6	NA
Chromium	ug/l	10.5	1.5

Bacteria	Unit	Geometric Mean	Single Sample
E-Coli	MPN/100mL	126	235
Fecal Coliform	MPN/100mL	200	400

Nutrients	Unit	1 Hour Average	30 Day Average
Total Phosphorus	mg/l	126	235
Total Nitrogen	mg/l	200	400

1.13 Action Level Monitoring

The tables below lists non-stormwater action level analytes for the Los Angeles River and San Gabriel River. As mentioned, the City does not intend to conduct action level or any other non-stormwater monitoring



at the outfall. Such monitoring is not authorized under the Clean Water Act and is contrary to State Board water quality orders. Because non-stormwater discharges are not subject to an iterative process, an exceedance would place a permittee in violation. And, in the case of Reach 2 of the Rio Hondo, non-stormwater outfall sampling is physically impossible because outfalls are covered with heavy metallic flap gates that prevent non-stormwater from leaving the storm drain and entering the river. Further, these structural controls prevent pollutants in non-stormwater runoff from entering the river. Nevertheless, the City shall conduct non-stormwater monitoring to detect and eliminated illicit discharges and connections (see below Section 1.14).

Table IV – Action Levels (Non-Stormwater) for the Los Angeles River

Analyte	Units	Average Monthly	Daily Maximum
pH	Standard units	6.0-9.0 ⁵	
<i>E. coli</i> Bacteria	#/100 ml	126 ⁶	235 ⁷
Chloride	mg/L	0 ⁸	--
Sulfate	mg/L	0 ⁹	--
Total Dissolved Solids	mg/L	5.0 ¹⁰	--
Nitrate Nitrogen, Total (as N)	mg/L	1.0 ¹¹	--
Turbidity	NTU	5.0 ¹²	
Aluminum, Total Recoverable	mg/L	1.0 ¹³	--
Cyanide, Total Recoverable	µg/L	4.3	8.5
Copper, Total Recoverable	µg/L	0 ¹⁴	
Mercury, Total Recoverable	µg/L	0.051	0.10

⁵Within the range of 6.5 to 8.5

⁶*E.coli* density shall not exceed a geometric mean of 126/200 ml

⁷*E.coli* density in a single sample shall not exceed shall not exceed 235/100 ml

⁸In accordance with applicable water quality objectives contained in Chapter 3 of the Basin Plan

⁹Same as Chloride (see footnote 13)

¹⁰Same as Chloride (see footnote 13)

¹¹Applies only to beneficial uses designated for MUN per tables 2-1 and 2-2 of the Basin Plan

¹²Same as N (see footnote 16)

¹³Same as N (see footnote 16)

¹⁴Hardness dependent



Selenium, Total Recoverable	µg/L	4.1	8.2
<i>E. coli</i> Bacteria	#/100 ml	126	235

Table V - Non-stormwater Action Levels San Gabriel River

Analyte	Units	Average Monthly	Daily Maximum
pH	Standard	6.0 – 9.0 ¹⁵	
E.Coli	#/100 ml	126 ¹⁶	235 ¹⁷
Chloride	mg/l	0 ¹⁸	--
Nitrate Nitrogen, Total (as N)	mg/l	0 ¹⁹	--
Sulfate	mg/l	0 ²⁰	--
TDS	Mg/l	0 ²¹	--
Aluminum, Total Recoverable	Mg/l	1.0 ²²	--
Cyanide, Total Recoverable	µg/L	4.3	8.5
Cadmium, Total Recoverable	µg/L	0 ²³	--
Copper, Total Recoverable	µg/L	0 ²⁴	--
Lead, Total Recoverable	µg/L	0 ²⁵	--
Selenium, Total Recoverable		4.1	--
Nickel, Total Recoverable	µg/L	0 ²⁶	--
Silver, Total Recoverable	µg/L	0 ²⁷	--
Zinc, Total Recoverable	µg/L	0 ²⁸	--

1.14 Additional Monitoring Required for WMP Compliance

MRP section VI.C.2.a.i and ii requires additional outfall monitoring tasks for permittees that opt for the WMP. They include pollutants that are currently not TMDLs but are nevertheless 303(d) listed (e.g. cyanide for Reach 2 of the Rio Hondo). Regional Board staff has suggested that other

¹⁵ Same as pH for LAR (see footnote 10)

¹⁶ Same as E.Coli for LAR minimum (see footnote 11)

¹⁷ Same as E. Coli for LAR maximum (see footnote 12)

¹⁸ Same as Chloride for LAR (see footnote 13)

¹⁹ Same as Chloride for LAR (see footnote 13)

²⁰ Same as Chloride for LAR (see footnote 13)

²¹ Same as Chloride for LAR (see footnote 13)

²² See footnote 16

²³ Hardness dependent

²⁴ Hardness dependent

²⁵ Hardness dependent

²⁶ Hardness dependent

²⁷ Hardness dependent

²⁸ Hardness dependent



water quality standards be included that can found in the previous MS4 in attachment U of the Monitoring Program.

The purpose of this monitoring task is to identify non-TMDL pollutants are causing impairments to beneficial uses of receiving waters and to evaluate the effectiveness of BMPs implemented through the SWMP/WMP. They are also included to determine if non-TMDL pollutants are causing or contributing to exceedances of receiving water limitations. The City takes the position that the detection of an exceedance does not constitute a violation. Any persistent exceedance of a TMDL or water quality standard monitored over the term of the permit would not constitute a violation provided that (1) the SWMP/WMP is being implemented in a timely and complete manner; and (2) complies with the iterative process described in MS4 permit section V.A.1-4.

Resulting data generated from WMP-related monitoring will be, along with TMDL monitoring, loaded into the water quality model. These pollutants will be added to the stormwater outfall sampling list.

Table VI - WMP Monitoring for Non-TMDL Water Quality Standards

CONSTITUENTS	USEPA METHOD	Maximum Detection Limits
CONVENTIONAL POLLUTANTS		mg/L
Oil and Grease	1664	5
Total Phenols	420.1	0.1
Cyanide		0.005
pH	150.1	0 – 14
Temperature		None
Dissolved Oxygen		Sensitivity to 5 mg/L
BACTERIA		
Total Coliform	9221B	<20mpn/100ml
Fecal Coliform	9221B	<20mpn/100ml
Enterococcus	9221B	<20mpn/100ml
GENERAL		mg/L
Dissolved Phosphorus	300	0.05
Total Phosphorus	300	0.05



Turbidity	180.1	0.1NTU
Total Suspended Solids	160.2	2
Total Dissolved Solids	160.1	2
Volatile Suspended Solids	160.4	2
Total Organic Carbon	415.1	1
Total Petroleum Hydrocarbon	1664	5
Biochemical Oxygen Demand	405.1	2
Chemical Oxygen Demand	410.4	20-900
Total Ammonia-Nitrogen	350.2	0.1
Total Kjeldahl Nitrogen	351.2	0.1
Nitrate-Nitrite	4110	0.1
Alkalinity	310.1	2
Specific Conductance	120.1	1umho/cm
Total Hardness	130.2	2
MBAS	425.1	<0.5
Chloride	4110	2
Fluoride	4110	0.1
Sulfate	4110	2
Methyl tertiary butyl ether (MTBE)		1

1.15 Non-stormwater Monitoring for IC/ID

As mentioned above, the City proposes to perform non-stormwater monitoring to detect and eliminate illicit connections and discharges in accordance with 40 CFR 122.26. Monitoring will consist of dry weather visual observations at outfalls or field screening points that shall be conducted monthly during the dry season (May 1 to September 30). If flow is detected, grab samples are to be taken within a 24 hour period and measured against fecal coliform, fecal streptococcus, surfactants (MBAS), residual chlorine, fluorides, and potassium. Other constituents may be added later based on USEPA's ICID-DE guidance manual.

1.16 Reporting Requirements

The City shall comply with all reporting requirements specified in the MRP. Currently TMDL reports for trash, nutrients, and TMDL constituents are reported with the MS4 permit annual report, which is due in December



of each year. The City cannot begin to report monitoring results until: (1) the WMP and MRP has been approved by the Regional Board, (expected to happen 4 months after the June 28th WMP submittal date); and (2) one round of monitoring has been conducted during October 2014 to April 2015 wet season. Reporting results to the Regional Board will occur on or before December of 2015. By this time, it is expected that the County of Los Angeles will have developed a standardized annual report form that will include reporting criteria for the MS4 permit, TMDLs, MALs and certain water quality standards.

1.17 **Monitoring Protocols**

The MRP requires a variety of monitoring requirements that are governed by monitoring protocols established by USEPA, which are summarized below.

i. *Toxicity Monitoring/Testing Protocol*

Ceriodaphnia dubia are an EPA recommended freshwater invertebrate used in both acute and chronic toxicity testing. In acute toxicity testing, *Ceriodaphnia* are used at <24 hours old and survival rates are recorded. In chronic toxicity testing, *Ceriodaphnia* are used at <24 hours old and all neonates must have been released within 8 hours of each other. In chronic tests, survival and reproduction are recorded. *Ceriodaphnia dubia* are exposed in a static renewal system to different concentrations of effluent, or to receiving water, until 60% or more of surviving control females have three broods of offspring. Test results are based on survival and reproduction. EPA method 1002.0 use for toxicity testing. The *C. dubia* chronic tests consist of



ten replicate 20 ml glass vials each containing one organism. Tests are initiated with less than 24-hour-old *C. dubia*, born within an 8-hour period. *C. dubia* are fed a mixture of *S. capricornutum* and YCT (a mixture of yeast, organic alfalfa and trout chow) daily. *C. dubia* are transferred into a new vial of fresh solution daily. Sierra Springs™ water amended to EPA moderately hard (SSEPAMH) water is used as the control water for the *C. dubia* test. Tests are conducted at $25 \pm 2^\circ$ C with a 16-hour light: 8-hour dark photoperiod. Mortality and reproduction (number of neonates) are assessed daily and at test termination (day 7).

ii. *USEPA sampling protocol*

For each field screening point, sample shall be collected of storm water discharge from three storm events occurring at least one month apart in accordance with the requirements indicated below:

- For storm water discharges, all samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inch and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. For all applicants, a flow-weighted composite shall be taken for either the entire discharge or for the first three hours of the discharge. The flow-weighted composite sample for a storm water discharge may be taken with a continuous sampler or as a combination of a minimum of three sample aliquots taken in each hour of discharge for the entire discharge or for the first three hours of the discharge, with each aliquot being separated by a minimum period of fifteen minutes. For a flow-weighted composite sample, only one analysis of the



composite of aliquots is required. For all storm water permit applicants taking flow-weighted composites, quantitative data must be reported for all pollutants specified in §122.26 except pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, fecal coliform, and fecal streptococcus.

1.18 Implementation Schedule (Milestones)

The table below provides a schedule for implementing MRP/CIMP tasks.

Table VII – Implementation Schedule

Task	Deadline Date
<ul style="list-style-type: none"> Submit WMP, MRP, and CIMP to Regional Board 	No later than June 28, 2014
<ul style="list-style-type: none"> Using GIS mapping, provide land use overlay of City's storm drain system 	No later than June 28, 2014
<ul style="list-style-type: none"> Using GIS mapping, show City's storm drain system including catch basins and connections to receiving waters 	No later than June 28, 2014
<ul style="list-style-type: none"> Using GIS mapping, identify watersheds and sub-watersheds based on Los Angeles County's HUC 12 equivalent boundaries 	No later than June 28, 2014
<ul style="list-style-type: none"> Using GIS mapping identify groundwater recharge facilities into which City drains 	No later than June 28, 2014
<ul style="list-style-type: none"> Using GIS mapping, identify: stormwater outfalls and field screening points; mass emission and other in-stream monitoring points/stations; and ambient monitoring locations established by the Regional Board's Surface Water Ambient Monitoring Program (SWAMP); and locations established by the Council for Watershed Health. 	No later than June 28, 2014
<ul style="list-style-type: none"> Conduct outfall monitoring for stormwater discharges for TMDLs, other water quality standards, MALs, and toxicity three times beginning during 2015-2016 wet season and annually thereafter. 	Beginning no later than October of 2015
<ul style="list-style-type: none"> During the dry season, conduct monthly non-stormwater visual observations and grab sampling if flow is detected. 	No later than May 1, 2015
<ul style="list-style-type: none"> If no data exists the City shall contract for the CWH to conduct ambient monitoring once during the term of the permit for Reach 2, Rio Hondo and Reach 3 of the San 	No later than June 28, 2015



Gabriel River (costs to be shared with the cities of Irwindale and West Covina).	
<ul style="list-style-type: none"> Review available ambient monitoring data and studies to assess the health of the San Gabriel River (reaches 2 and above) and Reach 2 of the Rio Hondo 	No later than June 28, 2014
<ul style="list-style-type: none"> Submit annual monitoring reports to the Regional Board of any available TMDL or other water quality standards data generated through outfall monitoring. 	Beginning no later than December of 2014
<ul style="list-style-type: none"> Submit new development/redevelopment track form. 	No later than one month following the Regional Board's approval of the CIMP

END SECTION



Appendix A

Maps

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Appendix A-1

Outfall and Field Screening Location Map

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Appendix A-2

In-stream Monitoring Locations

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Appendix A-3

Watershed/Sub-watershed & City Boundary Map

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Appendix A-4
Storm Drain/Catch Basin Map

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Appendix A-5

City Land Use Map

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Appendix A-6

Spreading Grounds Location Map

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Appendix B

2010 303(d) List for Los Angeles and San Gabriel Rivers and Tributaries

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Appendix B

Table I – 303(d) List - San Gabriel River and Tributaries

2010 303 (d) List			
Reach	Parameter	TMDL Status Date	Source
Coyote Creek	Indicator Bacteria	2009	Unknown
	Copper Dissolved	2007	Unknown
	Diazinon	2019	Unknown
	Lead	2019	Unknown
	pH	2019	Unknown
	Toxicity	2019	Unknown
Coyote Creek North Fork	Indicator Bacterial	2021	Unknown
	Selenium	2021	Unknown
SG River Estuary	Copper Dissolved	2007	Unknown
	Dioxin	2007	Unknown
	Nickel	2007	Unknown
	Oxygen Dissolved	2007	Unknown
SG River 1 Estuary to Firestone Blvd)	Coliform Bacteria	2019	Unknown
	pH	2019	Unknown
SG River Reach 2 Firestone Blvd to Whittier Narrows Dam	Coliform Bacteria	2019	Unknown
	Lead	2007	Unknown
	Cyanide	2021	Unknown
SG River Reach 3 Whittier Narrows Dam	Indicator Bacteria	2021	Unknown
	Coliform Bacteria	2009	Unknown
	Toxicity	2019	Unknown



San Jose Creek Reach 1 (SGR Confluence to Temple Street)	Coliform Bacteria	2009	Unknown
	Toxicity	2019	Unknown
	TDS	2021	Unknown
	pH	2021	Unknown
	Ammonia	2019	Non-point and Point Source
San Jose Creek Reach 2 (Temple to 1-10 at White Avenue)	Coliform Bacteria	2019	Unknown
	pH	2007	Unknown
Walnut Creek (Drains from Puddingstone Reservoir)	Indicator Bacteria	2021	Unknown
	Benthic-Macro invertebrate Bioassessment	2012	Unknown
Puddingstone Reservoir	Chlordane (tissue)	2019	Non-point
	DDT (tissue)	2019	Non-point
	Mercury (tissue)	2019	Non-point
	Organic Enrichment (Nutrient)	2019	Non-point
	PCBs	2019	Non-point
Los Cerritos Channel	Ammonia	2015	Non-point/Point Source
	Bis(2ethylhexyl)phthalate (DEHP)	2019	Unknown
	Chlordane (sediment)	2019	Unknown
	Coliform Bacteria	2019	Nonpoint
	Copper	2015	Nonpoint
	Lead	2015	Nonpoint
	Trash	2015	Nonpoint
	Zinc	2015	Nonpoint
	pH	2015	Unknown Nonpoint



Appendix C

Total Maximum Daily Loads

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Appendix C-1

San Gabriel River Metals and Selenium TMDL

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