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Program Evaluation Report

City of Bakersfield/Kern County Stormwater Program (NPDES Permit No. CA00883399)

Executive Summary

Tetra Tech, Inc., with assistance from U.S. EPA Region 9 and the California Regional Water Quality Control Board, Central Valley Region (Regional Board), conducted a program evaluation of the City of Bakersfield and the County of Kern's (Copermittees) Stormwater Program (Program) in November 2002. The purpose of the evaluation was to determine copermittees compliance with National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Discharge Permit No. CA00883399, and to review the overall effectiveness of the Program with respect to EPA's stormwater regulations. The evaluation team reviewed the copermittees' compliance with the NPDES permit requirements, including conducting an in-field verification of program implementation.

This program evaluation report identifies potential permit violations, program deficiencies, and positive attributes and is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation. Positive attributes are indications of overall progress in implementing the program.

The following potential permit violations and program deficiencies are considered the most significant:

- The copermittee's stormwater management plan has not been updated and does not adequately address all required stormwater program elements.
- The City's and County's corporation yards lack adequate controls to prevent stormwater contamination.
- The City and County do not conduct stormwater inspections at industrial facilities.
- The City and County do not adequately review, track, or inspect construction sites greater than 5 acres for erosion and sediment controls.
- The City does not appear to be adequately enforcing its stormwater system ordinance.
- The City is not collecting notices from industrial facilities and is not providing stormwater outreach information to these facilities

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1.0 Introduction

1.1 Program Evaluation Purpose

The purpose of the program evaluation was to determine the copermittees' compliance with the NPDES permit (CA00883399 and Board Order No. 5-01-130) and to evaluate the current implementation status of the copermittees' stormwater program (Program) with respect to EPA's stormwater regulations. Secondary goals included the following:

- Review the overall effectiveness of the Program.
- Identify and document positive elements of the Program that could benefit other Phase I and Phase II municipalities.
- Acquire data to assist in reissuance of the permit.

40 CFR 122.41(i) provides the authority to conduct the program evaluation.

1.2 Permit History

The NPDES stormwater permit was issued on June 14, 2001, and is scheduled to expire on June 14, 2006. The current permit, the second issued to the copermittees, requires each to develop and implement a stormwater management plan. The permit area includes the entire Bakersfield Metropolitan Area.

1.3 Logistics and Program Evaluation Preparation

Before initiating the on-site program evaluation, Tetra Tech, Inc., reviewed the following Program materials:

- NPDES Permit No. CA00883399
- 2000/01 Annual Report
- Correspondence and reports sent to the Regional Board by the copermittees to comply with requirements in the NPDES permit
- Copermittee web sites

On November 12–14, 2002, Tetra Tech, Inc., with assistance from the Regional Board, conducted the program evaluation. The evaluation schedule was as follows (both copermittees followed the same schedule):

Tuesday, November 12	Wednesday, November 13	Thursday, November 14
<ul style="list-style-type: none"> • Program evaluation kickoff meeting • Wet weather monitoring, public education • Municipal maintenance activities 	<ul style="list-style-type: none"> • New Development, Redevelopment, Site Planning; Construction (office visit) • Private and Public Construction field visits • Illicit Discharges; Dry Weather Screening; Spill Prevention 	<ul style="list-style-type: none"> • Industrial Inspection Program • Outbrief exit interview

Upon completion of the evaluation, an exit interview was held with the copermittees to discuss the preliminary findings. During the exit interview, the attendees were informed that the findings were to be considered preliminary pending further review by EPA and the Regional Board.

1.4 Program Areas Evaluated

The following program areas were evaluated:

- Program Management
- Municipal Maintenance
- Industrial Inspections
- Public Education
- New Development, Redevelopment, Site Planning and Construction Site Controls
- Illicit Discharge Detection and Elimination, Dry Weather Screening and Spill Prevention

1.5 Program Areas Not Evaluated

The following areas were not evaluated in detail as part of the program evaluation:

- Wet-weather monitoring program and monitoring program details (e.g., sample location, types, frequency, parameters).
- Other NPDES permits issued to the copermittees (e.g., industrial or construction NPDES stormwater permits).
- Legal authority.
- Inspection reports, plan review reports, and other relevant files. The program evaluation team did not conduct a detailed file review to verify that all elements of the Program were being implemented as described. Instead, observations by the evaluation team and statements from the copermittees’ representatives were used to assess overall compliance with permit requirements. A detailed file review of specific program areas could be included in a subsequent evaluation.

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1.6 Program Areas Recommended for Evaluation

The evaluation team recommends the following additional program assessments:

- A more intensive review of new development and construction site plan reviews, requirements and inspections for erosion and sediment controls.
- A more intensive review and field visit of best management practices (BMPs) for municipal corporation yards.
- A follow-up on the implementation progress of the industrial stormwater inspection program.

2.0 Program Evaluation Results

This program evaluation report identifies potential permit violations, program deficiencies, and positive attributes and is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation. Positive attributes are indications of a copermittee's overall progress in implementing the program. The evaluation team identified only positive attributes that were innovative (beyond minimum requirements). Some areas were found to be simply adequate; that is, not particularly deficient or innovative.

The evaluation team did not evaluate all components of each copermittee's program. Therefore, the copermittees should not consider the enclosed list of program deficiencies a comprehensive evaluation of individual program elements.

The most significant potential permit violations, program deficiencies, and positive attributes identified during the evaluation are noted in the Executive Summary and are identified with text boxes in the following subsections.

2.1 County of Kern

2.1.1 Evaluation of Program Management and Effectiveness

Deficiencies Noted:

- *The County's stormwater management plan has not been updated and does not adequately address all required stormwater program elements.*

The County's latest stormwater management plan (SWMP) was developed for the stormwater Phase I part 2 permit application process. As required by 40 CFR 122.26(d)(2), the program must address structural and source control measures, illicit discharges, industrial facilities, and construction. The County's plan, dated May 1993, does not have specific information regarding the frequency of plan revisions, training, measurable goals to evaluate the effectiveness of the implemented elements, or procedures for plan review and inspections of erosion and sediment controls on construction sites. The plan also does not contain information submitted to the

Regional Board under the current permit, including a stormwater inspection checklist, a public outreach program targeting users of pesticides and herbicides, and other technical reports. This information should be included in a revised plan.

The SWMP is a critical component of any stormwater management program. In order to be an effective management tool, the SWMP should be a dynamic document that is periodically revised to define the overall program mission and vision and identify the major goals and strategies for implementing the program. The document should also include, for each program element, a mission statement, and identification of all potential pollutant sources and activities to address those sources.

- *The County's program and plan do not contain the measurable goals necessary to quantify and track progress.*
The County's program does not include measurable goals or other mechanisms to describe how the success of the Program will be assessed. In order to measure the effectiveness of the SWMP, the County should track the number of warnings, corrective actions, penalties, stop work orders issued, and the number of illegal non-stormwater discharges reported. The measurable goals should be linked to programmatic, social, or environmental indicators such as those listed in the 1996 Center for Watershed Protection report *Environmental Indicators to Assess Stormwater Control Programs and Practices*.
- *The County lacks an adequate reporting process for program analysis.*
Chapter 6, Program Analysis, of the Joint Permit Annual Report 2000–2001, does not contain language addressing measurable goal achievements. Furthermore, the program analysis section addresses the wet weather monitoring program and not the effectiveness of the public education program, illegal dumping program, wet weather program, illicit discharge program, and other pertinent stormwater programs.
- *The County lacks intra-county and inter-copermittee coordination on stormwater activities.*
There are no institutional agreements between County departments to ensure coordination and collaboration on stormwater management activities. The SWMP does not contain language that explicitly addresses the roles and responsibilities of the departments involved in the implementation of the stormwater program. In addition, the County does not conduct regular meetings to ensure program effectiveness and coordination among County departments. The County should require supporting departments to:
 - Certify acceptance of the SWMP
 - Establish written policies and procedures to implement the SWMP
 - Maintain records as required by the permit
 - Provide staff training
 - Report the status of implementation
 - Provide annual compliance certification will all permit requirements that apply to that department.

There are also no regularly scheduled coordination meetings between the City and the County regarding stormwater-related issues. The formal City-County Agreement, No. 00-128, does not contain language to establish regular stormwater coordination meetings.

- *The County appears to lack adequate legal authority to regulate erosion and sediment controls on construction sites.*

A review of the County's Storm Water Ordinance (No. G-6063, Chapter 14.26) found that it does not specifically require erosion and sediment controls for private and public construction projects. This ordinance addresses general stormwater provisions, industrial stormwater, stormwater system construction, and stormwater violations. It was unclear during the evaluation if the County had other legal authorities or mechanisms to ensure compliance with erosion and sediment control requirements.

2.1.2 Evaluation of Municipal Maintenance

Potential Permit Violation:

- *The County's municipal corporation yard lacks adequate controls to prevent stormwater contamination.*

Provision B of the NPDES permit requires the County to "reduce the discharge of pollutants into the storm drainage system to the maximum extent practicable." The County's Victor Street municipal corporation yard does not implement good housekeeping practices to reduce or eliminate potential stormwater discharges to the adjacent detention basins. The yard inspection revealed exposed paint containers near trash bins outside the paint shop area, three exposed scrap metal bins outside the facility, an exposed aggregate stockpile that shows signs of sediment transport, and storage of oil barrels with no secondary containment. There was a pile of an unknown substance outside the wash rack area. The pile had been extracted from the oil/water separator and placed outside to dewater.

The County should develop a stormwater pollution prevention plan for the yard; implement appropriate stormwater BMPs, including good housekeeping practices; and train maintenance staff on proper stormwater management techniques.

Deficiency Noted:

- *The County does not have written standards, guidance, or training for the maintenance and inspection of structural stormwater controls.*

The County has not developed standards for the maintenance of stormwater facilities, such as storm drain inlets and stormwater basins. The County Engineer and Survey Services (ESS) Department stated that the Road Maintenance Department conducts inspections of all the County jurisdictional storm drain inlets prior to the wet season. The ESS Department is responsible for the maintenance of the County jurisdictional storm drain inlets. There is no written agreement between the two departments for procedures on routine inspections and maintenance. The County also lacks a training program to inform staff regarding procedures for storm drain inlet maintenance.

The County does not have written standards regarding procedures for the maintenance of County jurisdictional stormwater basins. The ESS Department has hired inmates from Kern County's Sheriff Lerdo Jail to conduct routine maintenance on the basins. A deputy sheriff directs and supervises the Lerdo maintenance crew. An inventory has been developed for 175 stormwater basins within the County's jurisdiction. The County ESS Department provides the basin maintenance schedule.

2.1.3 Evaluation of Industrial Inspections

Potential Permit Violation:

- *The County does not conduct stormwater inspections at industrial facilities.*

The County's SWMP states that industrial facility pretreatment inspections conducted by the County Waste Management Department, Liquid Waste Division, will include "an evaluation whether the industry is in compliance with the SWRCB General Industrial Storm Water Permit." Provision D.3 of the NPDES permit requires the copermitees to implement this stormwater management plan. The Kern County Waste Management Department's wastewater treatment facility manager explained that there are two pretreatment inspectors for all industrial facilities. The inspections concentrate on wastewater streams, not stormwater discharges. Provision D.10 of the NPDES permit required the County to submit a "template storm water inspection checklist" by December 15, 2001. A fax from the County to the Regional Board dated June 28, 2002 included a copy of a one-page "Industrial Facility Storm Water NPDES Assessment Checklist." At the time of the evaluation, this checklist had not yet been incorporated into the industrial facility inspection program. The County needs to begin conducting stormwater inspections of industrial facilities.

Deficiency Noted:

- *The County lacks written standards, procedures, and training for industrial facility stormwater inspections.*

As described above, the County does not have a formal stormwater inspection program for industrial facilities. The County needs to develop procedures for conducting industrial stormwater inspections, provide stormwater training to inspectors, and provide stormwater outreach information (such as appropriate stormwater BMPs) to the regulated industries.

2.1.4 Evaluation of Public Education

Deficiency Noted:

- *The County does not address the reduction of pesticide, herbicide, and fertilizer use in its stormwater public education program.*

The County has developed fliers, brochures, and fact sheets regarding hazardous waste disposal, oil recycling, illegal dumping, general recycling, and household green waste, but it does not address pesticide, herbicide, and fertilizer use.

2.1.5 Evaluation of New Development and Construction Site Controls

Deficiency Noted:

- *The County does not adequately review, track, or inspect construction sites greater than 5 acres for erosion and sediment control.*

The County reviews building and grading permits, but does not review plans for erosion and sediment control, nor are County building inspectors tasked to inspect for erosion and sediment controls on new developments. Additionally, the County does not track or verify that construction sites submit Notices of Intent to the State Water Resources Control Board for construction sites disturbing greater than 5 acres.

- *The County lacks an adequate training program for building inspectors.* Field evaluations revealed that building inspectors do not receive training on stormwater protection and/or appropriate ESC BMPs.

2.1.6 Evaluation of Dry Weather Screening and Illicit Discharge Detection and Elimination

Adequate.

2.2 City of Bakersfield

2.2.1 Evaluation of Program Management and Effectiveness

Potential Permit Violation:

- *The City does not appear to be adequately enforcing its stormwater system ordinance.*

Provision D.8.d of the City's NPDES permit requires the discharger to enforce codes, ordinances, and permits, and provision D.21 requires the City to "conduct adequate compliance and enforcement activities to ensure that businesses, industrial and construction activities comply with the County or City stormwater ordinances." The City's two primary stormwater ordinances are Chapter 8.34 (Industrial Stormwater) and Chapter 8.35 (Stormwater System). Chapter 8.35.010.F defines "stormwater system" to mean curbs, inlets, underground conduits, retention/detention basins, outfalls, ditches, and canals used to collect, transport, infiltrate/evaporate, or discharge water flows resulting from precipitation. Chapter 8.35.020 prohibits most types of discharges into any stormwater system. Chapter 8.34 requires industrial activities to comply with the SWRCBs General Industrial Stormwater Permit. The ordinance provides the City the authority to inspect industrial facilities, requires industrial facilities that discharge into the City's storm drain system to comply with the City's municipal stormwater permit, and requires industrial facilities to notify the City that they are subject to the industrial permit.

During the evaluation, the City did not present any evidence or examples that these ordinances were being regularly enforced or followed, and there were no records of relevant code enforcement activities.

Deficiencies Noted:

- *The City's stormwater management plan has not been updated and does not adequately address all required stormwater program elements.*

The City's latest stormwater management plan (SWMP) was developed for the stormwater Phase I part 2 permit application process. As required by 40 CFR 122.26(d)(2), the program must address structural and source control measures, illicit discharges, industrial facilities, and construction. The City's plan, dated May 1993, does not have specific information regarding the frequency of plan revisions, training, measurable goals to evaluate the effectiveness of the implemented elements, or procedures for plan review and inspections of erosion and sediment controls on construction sites. The plan also does not contain information submitted to the Regional Board under the current permit, including a stormwater inspection checklist, a public outreach program targeting users of pesticides and herbicides, and other technical reports. This information should be included in a revised plan.

The SWMP is a critical component of any stormwater management program. In order to be an effective management tool, the SWMP should be a dynamic document that is

periodically revised to define the overall program mission and vision and identify the major goals and strategies for implementing the program. The document should also include, for each program element, a mission statement, and identification of all potential pollutant sources and activities to address those sources.

- *The City's program and plan do not contain the measurable goals necessary to quantify and track progress.*

The City's program does not include measurable goals or other mechanisms to describe how the success of the Program will be assessed. To ensure continued support for the Program and provide a means to measure its effectiveness, the City should establish measurable goals for each program element.

The measurable goals should be linked to programmatic, social, or environmental indicators such as those listed in the 1996 Center for Watershed Protection report *Environmental Indicators to Assess Stormwater Control Programs and Practices*. For example, the City should monitor social indicators such as the public's knowledge of stormwater issues as a measure of success. The City should also set minimum performance standards for each BMP, such as a standard to visit 20 classrooms each year to conduct stormwater presentations.

- *The City lacks intra-city and inter-copermittee coordination on stormwater activities.* There are no institutional agreements between City departments to ensure coordination and collaboration on stormwater management activities. The SWMP does not contain language that explicitly addresses the roles and responsibilities of the departments involved in the implementation of the stormwater program. In addition, the City does not conduct regular meetings to ensure program effectiveness and coordination among departments. The City should require supporting departments to:
 - Certify acceptance of the SWMP
 - Establish written policies and procedures to implement the SWMP
 - Maintain records as required by the permit
 - Provide staff training
 - Report the status of implementation
 - Provide annual compliance certification will all permit requirements that apply to that department.

There are also no regularly scheduled coordination meetings between the City and the County regarding stormwater-related issues. The formal City-County Agreement, No. 00-128, does not contain language to establish regular stormwater coordination meetings.

2.2.2 Evaluation of Municipal Maintenance

Potential Permit Violation:

- *The City's corporation yard lacks adequate controls to prevent stormwater contamination.*

Provision B of the NPDES permit requires the City to “reduce the discharge of pollutants into the storm drainage system to the maximum extent practicable.” The City’s corporation yard lacks even basic stormwater controls, has no stormwater pollution prevention plan (or equivalent), and the City does not adequately train staff on stormwater pollution prevention practices. Most of the corporation yard drains to a detention basin; however, a portion of the yard discharges directly to a canal. The City had received rain less than a week before the program evaluation. The evaluation team observed the following conditions at the yard:

- More than fifty 1-gallon paint cans, which were filled with a mixture of paint and water, had been left open and exposed.
- Several large paint striping containers had been left to drain at the edge of the yard. Dried paint on the pavement next to these containers was approximately ½ inch thick.
- A wash rack discharged directly to the storm drain system without any pretreatment.
- An asphalt cleaning site next to the wash rack was exposed without any stormwater controls.
- Used batteries had been left exposed.
- Debris from a street sweeper or vacuum truck had been dumped about 10 feet from a storm drain inlet.
- The detention pond had filled to within 3 to 4 feet of the top with sediment and debris, decreasing the useful storage volume. An attempt had apparently been made to correct this problem by removing sediment and debris from inside the pond and spreading them around the exterior to increase the freeboard.
- Various road maintenance materials, obviously useless after having been left exposed to stormwater, were dumped in the back of the yard that discharges to the canal.

Brief discussions with one of the staff members at the yard demonstrated that the staff has minimal awareness of proper stormwater management BMPs. The City should develop a stormwater pollution prevention plan for the yard; implement appropriate stormwater BMPs, including good housekeeping practices; and train maintenance staff on proper stormwater management techniques.

A photo log of the above conditions is presented as Attachment A.

2.2.3 Evaluation of Industrial Inspections

Potential Permit Violations:

- *The City does not conduct stormwater inspections at industrial facilities.*

The City's SWMP states that industrial facility inspections conducted as part of the City's Industrial Waste Pretreatment Program will include an industrial stormwater management inspection and audit. Provision D.3 of the NPDES permit requires the copermitees to implement this stormwater management plan. A meeting with the pretreatment staff revealed that the pretreatment inspections do not include a stormwater component other than ensuring that uncontaminated stormwater is not entering the sanitary sewer system. The City should begin conducting stormwater inspections of priority industrial facilities.

- *The City is not collecting notices from industrial facilities and is not providing stormwater outreach information to these facilities.*

The City's ordinance titled "Industrial Stormwater," Chapter 8.34, requires industrial facilities to comply with the SWRCBs General Industrial Stormwater Permit and to comply with the City's MS4 permit. Industrial facilities are also required to notify the Public Works director that they are subject to this permit. The City is not collecting these notices from the industrial facilities and is not providing stormwater outreach information (such as appropriate stormwater BMPs) to these regulated industries.

Deficiency Noted:

- *The City lacks written standards, procedures, and training for industrial facility stormwater inspections.*

As described above, the City does not have a formal stormwater inspection program for industrial facilities. The City needs to develop procedures for conducting industrial stormwater inspections, provide stormwater training to inspectors, and provide stormwater outreach information (such as appropriate stormwater BMPs) to the regulated industries.

2.2.4 Evaluation of Public Education

Adequate.

2.2.5 Evaluation of New Development and Construction Site Controls

Positive Attribute:

- *The City requires new developments to discharge to terminal stormwater basins designed to contain the runoff from a 100-year, 24-hour rainfall event.*

The City requires all new developments to contain and infiltrate all stormwater runoff. Runoff is contained in terminal basins, which are designed to contain the runoff from a 100-year, 24-hour rainfall event and are designed to capture runoff from at least 80 acres. In most cases, these basins are deeded to the City after development.

Deficiency Noted:

- *The City does not require or review erosion and sediment control plans and does not inspect for erosion and sediment controls at construction sites.*

The Public Works, Planning, and Building Departments do not review plans for erosion and sediment control or stormwater BMPs. In addition, building inspectors in the field do not conduct inspections for erosion and sediment control.

Representatives of the City stated that they notify project applicants for projects disturbing greater than 5 acres of the need to apply for the SWRCB's Construction General Permit. However, during the week of the evaluation, the SWRCB's construction database did not list any construction projects over 5 acres within the City, even though the evaluation team observed several projects obviously above this threshold. The City should work with the Regional Board to develop a process that ensures construction projects within the City have applied for and are complying with the SWRCB's Construction General Permit.

2.2.6 Evaluation of Dry Weather Screening and Illicit Discharge Detection and Elimination

Deficiency Noted:

- *The City does not have criteria or standards to determine when a dry weather discharge investigation should occur.*
Once a year during the dry season, the City screens approximately 75 outfalls once a year for dry weather discharges to the river. If water is found, a sample is taken; however, the City has not established criteria or standards to determine what type of sampling result would trigger further investigation.

Attachment A. City Corporation Yard Evaluation Photos



Photo 1: Paint stripping container left open to dry out and drain onto the pavement.



Photo 2: Dry paint on pavement (approximately 1/2 inch thick)

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Photo 3: Paint cans left open and exposed. Rain in the past week has filled most of the cans with a mixture of water and paint.



Photo 4: Asphalt cleaning area next to wash rack. Thick layer of asphalt tar on ground. Area discharges to nearby storm drain.



Photo 5: Asphalt patching compound left exposed and now useless. This area drains to the canal, which runs through the yard.



Photo 6: Debris from street sweeper or vactor truck was deposited about 10 feet away from a storm drain inlet (inlet is circled).



Photo 7: Detention pond in southern corner of yard. Pond is filled with sediment and other debris within about 3-4 feet of the top of the embankment. The pond was apparently recently excavated to remove some of the sediment and debris, which was placed on the embankment (bottom of photo).