1998-99
ANNUAL REPORT
SUMMARY

Title: RESIDENTIAL & COMMERCIAL ACTIVITIES
Short description: General Program Ele
Long description: There are 13 Best Management Practices that define this program element. The BMP A x.x are the goals to be accomplished to complete this element of the program.

BMP -- 4 Existing Programs
BMP -- 8 Modifications to existing programs
BMP -- 3 Studies

Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: ALEX BAILLIE;DON KING;GLEN BIRDZELL;MIKE GUTTERRES

Progress data history
- None -

Title: BMP A1.1 CHANNEL AND DETENTION BASIN MAINTENANCE
Short description: MAINTENANCE
Long description: Continuation of the City current maintenance program for channels and detention basins.

MEASURE OF SUCCESS: (PI, VI)
Documentation of Maintenance activities in the Stormwater Annual Report.
Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: ALEX BAILLIE

Progress data history
Date: 6/3/98
Name: Progress data for ALEX BAILLIE on Jun 3, 1998
Comment: I inspected the Stockton Airport Retention Basin following the closure of the wet season. The basin floor has weeds and cattails growing in it. There are several places along the floor of small ponds of standing water . Trash can be seen scattered along the basin floor. Some minor gully erosion was noted on the south wall.

I noted that mud had been deposited in front of the pump station bar gate again. I also found small plastic pellets deposited around the pump gate.

Date: 6/3/98
Name: Progress data for ALEX BAILLIE on Jun 3, 1998
Comment: I inspected the Western Pacific Retention Basin following the closure of the wet season. The basin floor is still covered with about 6 inches of water. Weeds are starting to grow on the basin walls. I noted the north wall had some gully erosion by the north inlet pipe. In addition, the west wall had some gully erosion by the UPRR fence line. The south and east wall had some minor gully erosion most notably in the southeast and southwest corners.

Date: 6/3/98
Name: Progress data for ALEX BAILLIE on Jun 3, 1998
Comment: I inspected the Arch Road Retention Basin following the close of the wet season. The basin foor is still covered with around 1-foot of water. The area around the inlet pipe is over grown with cattails.

There is some minor gully erosion on all the basin walls. I noted several squirrel holes along the west wall. The walls are presently fairly clear of weeds. However, some weeds have started growing along the water line edge of the basin.

Date: 6/3/98
Name: Progress data for ALEX BAILLIE on Jun 3, 1998
Comment: I inspected the Charter Way Retention Basin following the close of the wet season. The basin floor is covered with cattails and weeds. There is about 6 inches of standing water on the basin floor.

The basins walls are also covered with weeds. I noted some minor gully erosion on the south wall. Some plastic trash was found scattered along the west basin wall.

Date: 12/30/97
Name: Progress data for ALEX BAILLIE on Dec 30, 1997
Comment: Inspected the condition of the Charter Way Retention Basin and noted that no erosion of the basin walls had occurred. Cattails have started to grow in the basin floor that is still partly covered with water.

Date: 11/17/97
Name: Progress data for ALEX BAILLIE on Nov 17, 1997
Comment: Inspected Stockton Airport Business Retention Basin and noted silt deposited in front of bar gate. Inlet pipe that had been full of mud earlier this summer has been scoured clean.

Date: 10/6/97
Name: Progress data for ALEX BAILLIE on Oct 6, 1997
Comment: Conducted inspection of the Union Pacific Industrial Park Retention Basin and noted that basin walls have been graded and repaired. The basin floor has been disced free of weeds and graded. The basin appears to be in good shape for the start of the wet season.

Date: 9/23/97
Name: Progress data for ALEX BAILLIE on Sep 23, 1997
Comment: Inspected the Stockton Airport Retention Basin and noted that the basin walls had been graded. The soil mound next to the south fence is still exposed and sediment from it may erode into the basin.

Date: 9/23/97
Name: Progress data for ALEX BAILLIE on Sep 23, 1997
Comment: Inspected the Arch Road Retention Basin and noted that basin walls have been graded and repaired. Straw has been placed around the outlet to prevent erosion. The basin appears to be in good shape for the start of the wet season.

Date: 9/16/97
Name: Progress data for ALEX BAILLIE on Sep 16, 1997
Comment: Inspection of the Charter Way Retention Basin found that the weeds along the basin floor have been cut down.

Date: 9/5/97
Name: Progress data for ALEX BAILLIE on Sep 5, 1997
Comment: Roto Rooter has completed removing the mud from in front of the pump station bar gate and has started cleaning out the wet well.

I noted a very small flow entering the basin from the eastern inlet pipe. The water was clear and with no visible solids.

Date: 9/3/97
Name: Progress data for ALEX BAILLIE on Sep 3, 1997
Comment: A follow-up inspection was conducted on the Stockton Airport Retention Basin to view the progress Roto Rooter was making at clearing the mud/sediment deposited in front of the bar gate. Roto Rooter has cleared the majority of the mud/sediment, but some still remains along the norther side. No work has been done on the wet well yet.

Water was seen flowing into the basin from the eastern inlet pipe. I estimate the flow rate to be around 50-80 g.p.m. The water was light brown in color with some visible sediment particles.

Date: 8/22/97
Name: Progress data for ALEX BAILLIE on Aug 22, 1997
Comment: Conducted inspections and created a photograph log of the City Retention Basins. An overview of the basins is listed below:

Stockton Airport Basin- Basin floor is covered with weeds and has several small pools of water in it. Basin walls appear to be in good condition.

Roto Rooter is working on cleaning out the pump station wet well. A thick layer of mud was found deposited in front of the bar gate. The inlet pipe was also found to be roughly half-full of mud. Water seen flowing into the basin at around 75-150 gpm.

Roto Rooter reported removing around 81 yards of mud from in front of the bar gate. More mud still remains to be removed.

Arch Road Industrial Park Basin- Weeds on the basin floor have been cut down recently with the exception of the cattails around inlet pipe.

Some trash and scum found on water in the inlet pipe. Water could be heard flowing in the inlet pipe but the rate could not be determined due to surcharged condition at the inlet pipe's outfall. A small pond exists in front of the inlet pipe.

Western Pacific Industrial Park Basin- Inspection of the basin has found that Union Pacific Railroad has cut a small 6 inch wide trench across the west basin wall. The trench appears to be for draining the rail yard in this area.

Several small erosion gullies found on the east and west basin walls. Some weed growth on basin floor by basin pipe.

The south side inlet pipe was found to be discharging water with white colored foam into the basin. The flow rate of the discharge is estimated at around 10-15 gpm.

Charter Way Industrial Park Basin- The floor of the basin is covered with dead cattails. Plastic trash was found along the west basin wall. The trash appears to be mainly peices of plastic packaging material.

Some small potholes found in pavement in front of the pump station.

Title: BMP A1.2 CATCHBASIN,PIPLINE,& PUMP STATION MAINTENANCE
Short description: MAINTNENACE
Long description: Continuation of the existing maintenance efforts for catch basins, pipelines, and pump stations.

MEASURE OF SUCCESS: (PI,VI)
Summarize maintenance activities in the Stormwater Annual Report.
Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: MIKE GUTTERRES

Progress data history

Date: 6/8/98
Name: Progress data for MIKE GUTTERRES on Jun 8, 1998
Comment: Total cost of collection system maintenance for FY1997/98 was $599,614.

Date: 6/8/98
Name: Progress data for MIKE GUTTERRES on Jun 8, 1998
Comment: The City Strom Water Maintenance Crews responded to emergency situations in 29 storm events correcting conditions at 8 stormwater pump stations, 40 sur-charged or plugged storm water sewer mainlines, and cleaning debris from 3430 catch basins during the 1997/98 storm season.

Date: 6/8/98
Name: Progress data for MIKE GUTTERRES on Jun 8, 1998
Comment: Storm water pump station sump cleaning program removed 1124 tons of debris at a cost of $78,710 FY 1997/98

Date: 6/8/98
Name: Progress data for MIKE GUTTERRES on Jun 8, 1998
Comment: Routine maintenance of storm water collection system FY 1997/98 amounted to 47 catch basins repaired or replaced; 53 storm water manholes repaired or replaced; 647 catchbsins cleaned; 88,294 feet of catch basin laterals cleaned; 149,036 feet of storm sewer mainline cleaned; 175 storm water manholes cleaned; 4665 feet of storm water sewers televised for future repair.

Date: 6/8/98
Name: Progress data for MIKE GUTTERRES on Jun 8, 1998
Comment: Total cost of stormwater pump station maintenance for FY 1997/98 was $667,250

Date: 11/24/97
Name: Progress data for MIKE GUTTERRES on Nov 24, 1997
Comment: Bob Howard from CDS (Continous Deflection Seperation) Technologies demonstrated their product (Cyclone Seperator).

Date: 11/13/97
Name: Progress data for MIKE GUTTERRES on Nov 13, 1997
Comment: Attended a meeting with MUD and P/W to discuss the maintenance of storm detention basins and the various departmental responsibilities.

Title: BMP A2.5 DEVELOPMENT REVIEW PROCEDURES
Short description: DEV. PROCEDURES
Long description: The revision of the review process to ensure that stormwater quality BMPs are incorporated into new developments.

MEASURE OF SUCCESS: (VI)
Staff level adoption of procedures to handle development projects with respect to stormwater
Type: Result
Start date: 7/3/95 Due Date: 7/1/98
Who: MIKE GUTTERRES

Progress data history

Date: 7/8/98
Name: Progress data for ALEX BAILLIE on Jul 8, 1998
Comment: Attended a ERC meeting for the 7303 Pacific Ave. construction project. Discussed stormwater requirements for constrcution activites.

Date: 6/9/98
Name: Progress data for ALEX BAILLIE on Jun 9, 1998
Comment: I attended the ERC meeting for A-1 Plating that proposed constructing a large plating facility doing zinc and chrome plating of computer parts in Stockton. Discussed stormwater requirements and regulation for such a facility.

Date: 6/9/98
Name: Progress data for ALEX BAILLIE on Jun 9, 1998
Comment: I attended the ERC meeting for the development of a residential care facility.

Date: 6/9/98
Name: Progress data for MIKE GUTTERRES on Jun 9, 1998
Comment: As of this date, 52 projects have been reviewed for storm water compliance issues. Appendix A2.5 lists the projects

Date:	5/29/98
Name:	Progress data for ALEX BAILLIE on May 29, 1998
Comment:	I attended an ERC meeting for Timbron International. Timbron manufactures plastic fixtures from recycled and virgin materials. I informed Timbron that they would need to comply with the Industrial Storm Water Permit and file a NOI given their SIC and potential sources of exposure. I provided Timbron with a Model Storm Water Pollution Prevention Plan for Industrial Actvities. Timbron plans to have some discharge of wastewater associated with cleaning and cutting of intermediate plastic materials. I informed MUD Environmental Control of the potential categorical discharger locating in town.
Date:	3/23/98
Name:	Progress data for MIKE GUTTERRES on Mar 23, 1998
Comment:	Attended a meeting with MUD staff regarding the Airport Expansion Environmental Impact Report. Relayed the Stormwater Division's concerns and position.
Date:	1/27/98
Name:	Progress data for MIKE GUTTERRES on Jan 27, 1998
Comment:	Met with MUD, P/W, and Kjeldsen Sinnock & Neudeck (KSN) (design consultant) and presented the Stormwater Division's requirements for the Taft Area Detention Basin, specifically storm water treatment capabilities.
Date:	1/23/98
Name:	Progress data for MIKE GUTTERRES on Jan 23, 1998
Comment:	Glen Birdzell (Deputy Director/Stormwater) sent a letter to Wayne Smith (T:\STORMWAT\MEMOS\PW0123. WAY) informing him that the project was in need of a Storm Water Quality Control Criteria Plan and that SJAFCA would have to come up with a treatment in accordance with Chapter 7 of the Stockton Municipal Code Section 7-859 (Division 7) relating to storm water quality control criteria plan.
Date:	1/22/98
Name:	Progress data for MIKE GUTTERRES on Jan 22, 1998
Comment:	Spoke with Wayne Smith (Project Manager SJAFCA) regarding Mosher Creek Quarry Basin No. 2 and possible storm water treatments.
Date:	1/13/98
Name:	Progress data for MIKE GUTTERRES on Jan 13, 1998
Comment:	Held a meeting with Guy Petzold, Deputy City Attorney, to discuss the due process required by ordinance for post-construction BMP administration items that were not considered in the SWQCCP. This meeting was in referance to the denial of a proposed bypass of a wet detention basin of dry weather flows.
Date:	11/21/97
Name:	Progress data for MIKE GUTTERRES on Nov 21, 1997
Comment:	Attended the design kick off meeting for the Taft Area Detention Basin. MUD and P/W were present. Presented the Stormwater Division's requirements for the Taft Area Detention Basin, specifically storm water treatment capabilities.
Date:	11/10/97
Name:	Progress data for MIKE GUTTERRES on Nov 10, 1997
Comment:	Met with Mark Madison, Senior Civil Engineer MUD, to discuss the Stormwater Division's requirements for the Taft Area Detention Basin, specifically storm water treatment capabilities.
Date:	10/17/97
Name:	Progress data for ALEX BAILLIE on Oct 17, 1997
Comment:	Attended ERC meeting for Auto Zone, an auto parts retail shop. Auto Zone will need to complete a SWPPP for the City Grading and Erosion Control Permit. Auto Zone was provided a copy of the City's booklet, "Model SWPPP for Construction Sites."

Date: 9/17/97
Name: Progress data for ALEX BAILLIE on Sep 17, 1997
Comment: Attended Economic Review Committee for American Sunny Foods expansion project. American Sunny Foods is adding a broken rice line at their Stockton rice milling facility. American Sunny Foods has outdoor process loading and storage areas including a waste treatment system. In addition, rice dust from the milling operation is often carried outside. A review of the City storm water database found that American Sunny Foods does not have a Waste Dischargers Identification number for storm water discharges from the State Water Quality Control Board. American Sunny Foods was informed of the requirement to obtain coverage under the state storm water permit program for industrial activities. American Sunny Foods was given a "Model Storm Water Pollution Prevention Plan for Industrial Activities" at the meeting.

Date: 9/16/97
Name: Progress data for ALEX BAILLIE on Sep 16, 1997
Comment: Attended Economic Review Committee for Sumiden Wire Products expansion project. Sumiden Wire plans to add a new warehouse and coating line for wire strand. Sumiden was advised to update the current SWPPP to incorporate changes to the site. Overall project will be under 5 acres in size.

Date: 9/15/97
Name: Progress data for ALEX BAILLIE on Sep 15, 1997
Comment: Attended the Economic Review Committee meeting for CommuCom clean room expansion project.

Date: 9/10/97
Name: Progress data for ALEX BAILLIE on Sep 10, 1997
Comment: Attended the Economic Review Committee for Heinz plant expansion project. Heinz plans to add three additional process lines to the Stockton facility. Storm water concerns for outside storage tanks of sugar and vinegar will be addressed by installing secondary containment. Heinz's current SWPPP will have to be modified to be reflective of the new plant.

Title: BMP A3.1 STREET SWEEPING
Short description: MAINTNENACE
Long description: Continuation of the existing street sweeping and litter removal programs.

MEASURE OF SUCCESS: (PI;VI)
Annual reporting of the quantity of material removed by street sweeping and liter removal programs.
Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: MIKE GUTTERRES

Progress data history

Date: 6/8/98
Name: Progress data for MIKE GUTTERRES on Jun 8, 1998
Comment: Litter removal from flood channels and streets totaled approximately 28,349 tons FY 1997/98

Date: 6/8/98
Name: Progress data for MIKE GUTTERRES on Jun 8, 1998
Comment: City street sweeping program removed approximately 3,483 tons of debris at a cost of apporximately $845,000.

Date: 1/21/98
Name: Progress data for MIKE GUTTERRES on Jan 21, 1998
Comment: Memo to Jim Giottonini and Jim Escobar requesting comments on the Brown and Caldwell report (T:\STORMWAT\MEMOS\PW0121.JIM).

Date: 12/16/97
Name: Progress data for MIKE GUTTERRES on Dec 16, 1997
Comment: I sent a report by Brown and Caldwell to the Director of Public Works that discussed the benefits of Street Sweeping in the reduction of Pollutants.

Title: BMP A3.2 STREET AND PAVEMENT MAINTENANCE
Short description: ROADWAY O&M
Long description: The City will operate its street maintenance program under the State General Permit for Construction Activities.

MEASURE OF SUCCESS: (VI)
Annual verification of re-certification and a copy of a annual report verifying compliance with the provisions of Street Maintnenance SWPPP.

Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: ALEX BAILLIE

Progress data history

Date: 6/12/98
Name: Progress data for ALEX BAILLIE on Jun 12, 1998
Comment: The Street Department responded to my question regarding the current status of the stormwater program by reporting "No change since last year."

Date: 9/8/97
Name: Progress data for ALEX BAILLIE on Sep 8, 1997
Comment: Received compliance certification statement from Dennis Kong for the Street Paving SWPPP.

Date: 7/30/97
Name: Progress data for ALEX BAILLIE on Jul 30, 1997
Comment: Reviewed the City SWPPP for the Street & Paving Division with Dennis Kong Street Maintenance Supervisor. The City SWPPP was found to contain areas that required further improvement or more descriptive narrative for clarification. The following sections of the SWPPP were selected to be revised.

1. Site map to include entire City area
2. Toxic materials storage, handling and disposal
3. Construction material loading and unloading
4. Equipment cleaning and storage
5. Training for Seniors
6. Public Access to include a copy at Storm Water building

Revised SWPPP will be E-Mailed to Storm Water Section next week after the modifications have been completed.

Date: 7/24/97
Name: Progress data for ALEX BAILLIE on Jul 24, 1997
Comment: Reviewed Street and Paving Divisions revisions to SWPPP for construction activities with Dennis Kong, Street Maintenance Supervisor. All SWPPP revisions to be completed by 7-30-97.

Date: 7/22/97
Name: Progress data for ALEX BAILLIE on Jul 22, 1997
Comment: Street Department still working on completeing the amendments to the SWPPP for street and maintenance. Storm Water Program needs to review the SWPPP and comment. E-mail sent to arrange meeting date for reviewing the file.

Date: 7/16/97
Name: Progress data for ALEX BAILLIE on Jul 16, 1997
Comment: Received billing invoice from Street Maintenance showing the payment of $250.00 to the State Water Resources Board for the 1996/97 construction permit. Copy made for annual report.

Title: BMP A4.1 EXISTING STRUCTURAL CONTROLS
Short description: FLOOD CONTROL
Long description: 1. City studied the feasibility of modifying detention basins to improve treatment capabilities (feasibility study was completed and sent to the Regional Board FY1995/96)

2. City to work with the lakeside homeowners associations to put in place source controls at residential lakes.

MEASURE OF SUCCESS: (VI)
Annual report of the progress with the lakeside property owners association.
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: MIKE GUTTERRES;OUT REACH

Progress data history
- None -

Title: BMP A4.2 PROPOSED FLOOD MANAGEMENT PROJECTS
Short description: FLOOD MANAGEMENT
Long description: All flood management projects must consider stormwater quality issues according to the SWQCCP.

MEASURE OF SUCCESS: (VI)
Adoption of policies and procedures that ensure all flood mamagement projects assess the impact of a project on receiving waters (CEQA) and comply with the SWQCCP.
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: MIKE GUTTERRES

Progress data history
Date: 6/19/98
Name: Progress data for MIKE GUTTERRES on Jun 19, 1998
Comment: Reviewed 100% design of the Taft area SD pump station and detention basin. Storm water quality is addressed in the design.

Date: 6/4/98
Name: Progress data for MIKE GUTTERRES on Jun 4, 1998
Comment: As of this date, final design of the Taft Area Detention Basin, the Airport Gateway Detention Basins, and Mosher Creek Quarry Basin No. 2 are progressing with storm water quality issues being addressed appropriately.

Date: 3/23/98
Name: Progress data for MIKE GUTTERRES on Mar 23, 1998
Comment: Attended a meeting with MUD staff regarding the Airport Expansion Environmental Impact Report. Relayed the Stormwater Division's concerns and position.

Date: 1/27/98
Name: Progress data for MIKE GUTTERRES on Jan 27, 1998
Comment: Met with MUD, P/W, and Kjeldsen Sinnock & Neudeck (KSN) (design consultant) and presented the Stormwater Division's requirements for the Taft Area Detention Basin, specifically storm water treatment capabilities.

Date: 1/26/98
Name: Progress data for MIKE GUTTERRES on Jan 26, 1998
Comment: Letter has been sent to City Public Works Engineers clearly stating that the proposed design of the Taft Area Detention basin does not contain any of the concepts for storm water quality improvements contained in the City Standard Specifications and Plans. The Storm Water Division rejected the proposed plans for the basin until such time as they conform to standards.

Date: 1/23/98
Name: Progress data for MIKE GUTTERRES on Jan 23, 1998
Comment: Glen Birdzell (Deputy Director/Stormwater) sent a letter to Wayne Smith (T:\STORMWAT\MEMOS\PW0123.WAY) informing him that the project was in need of a Storm Water Quality Control Criteria Plan and that SJAFCA would have to come up with a treatment in accordance with Chapter 7 of the Stockton Municipal Code Section 7-859 (Division 7) relating to storm water quality control criteria plan.

Date:	1/23/98
Name:	Progress data for MIKE GUTTERRES on Jan 23, 1998
Comment:	A letter was sent to the engineers for the Airport Gateway Park rejecting the proposed design for the dentention basin. It was proposed to have a low flow by-pass around the dentention basin that would directly discharge storm water to the receiving waters without taking advantage of Storm water quality benefits of the detention basin.
Date:	1/22/98
Name:	Progress data for MIKE GUTTERRES on Jan 22, 1998
Comment:	Spoke with Wayne Smith (Project Manager SJAFCA) regarding Mosher Creek Quarry Basin No. 2 and possible storm water treatments.
Date:	1/20/98
Name:	Progress data for MIKE GUTTERRES on Jan 20, 1998
Comment:	Returned plans and plan review comments to Nader Shareghi (Senior Civil Engineer) and George Chen in the form of a memo detailing the SW Division's concerns (T:\STORMWAT\MEMOS\PW0120.MEM), recommending changes be made to coincide with the SWQCC Plan and the BMP specs, and standard drawings in the COS std. specs. and plans.
Date:	1/16/98
Name:	Progress data for MIKE GUTTERRES on Jan 16, 1998
Comment:	George called and spoke to Glen Birdzell (Deputy Director/Stormwater Division) regarding the project and the two proposed alternatives. Glen explained that the alternatives still did not address SW concerns due to the bypass.
Date:	1/14/98
Name:	Progress data for MIKE GUTTERRES on Jan 14, 1998
Comment:	Received plan review for Taft Area SD Pumping Station and Detention Basin from George Chen (Assistant Engineer).
Date:	12/18/97
Name:	Progress data for MIKE GUTTERRES on Dec 18, 1997
Comment:	Paul Sensibaugh, City Engineer, has called a meeting because he does not like the concept that detention basins should not have low flow bypasses. He is using the argument that if a basin is built, but not as a storm water BMP, it can be by-passed. I have explained to him that bypassing the detention basin is not addressing storm water quality to the maximum extent practicable.
Date:	12/18/97
Name:	Progress data for MIKE GUTTERRES on Dec 18, 1997
Comment:	Taft Area Storm Drain Pumping Station And Detention Basin: Public Works Engineering section is designing a new facility for the protection of this area. The design effectively by-passes the detention basin under low flow conditions. The proposed design is in conflict with the standard Plans and Specifications of the City by not addressing storm water quality in the design. I recommended that the engineers redesign the facility to conform to Standards and to address water quality.
Date:	11/21/97
Name:	Progress data for MIKE GUTTERRES on Nov 21, 1997
Comment:	Attended the design kick off meeting for the Taft Area Detention Basin. MUD and P/W were present. Presented the Stormwater Division's requirements for the Taft Area Detention Basin, specifically storm water treatment capabilities.
Date:	11/10/97
Name:	Progress data for MIKE GUTTERRES on Nov 10, 1997
Comment:	Met with Mark Madison, Senior Civil Engineer MUD, to discuss the Stormwater Division's requirements for the Taft Area Detention Basin, specifically storm water treatment capabilities.

Title: BMP A6.1 PESTICIDES, HERBICIDES,&FERTILIZERS
Short description: PESTICIDES,HERBICID
Long description: 1. City will control pestcides used on public lands
2. City has named a Pest Control Manager

MEASURE OF SUCCESS: (VI)
Annual report of the amount of material used from the Pest Control Manager.
Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: ALEX BAILLIE

Progress data history

Date: 7/28/98
Name: Progress data for ALEX BAILLIE on Jul 28, 1998
Comment: Pest Control manager's annual report of City of STockton use of Pestcides, fetilizers and Herbicides is contained in Appendex A6.1

Date: 7/31/97
Name: Progress data for ALEX BAILLIE on Jul 31, 1997
Comment: Contacted Scott Essins, Pesticide Manager, regarding the status of the pesticide report for the annual storm water report to the Regional Board. Pesticide report should be delivered to the Storm Water Section either today or tomorrow.

Date: 7/23/97
Name: Progress data for ALEX BAILLIE on Jul 23, 1997
Comment: The Parks and Recreation Department of the City has retained a consultant (Tom Howse) to review all the City pesticide storage and mixing areas for compliance with pesticide regulations. The consultant is scheduled to check the pesticide storage sites on 7-29-97. Jan Staszewski , Arborist, will be coordinating the review with the City pesticide applicators.

Date: 7/18/97
Name: Progress data for ALEX BAILLIE on Jul 18, 1997
Comment: Received draft report for BMP pesticide and fertilzers from Scott Essins.

Date: 7/1/97
Name: Progress data for ALEX BAILLIE on Jul 1, 1997
Comment: Received E-mail information on monthly reporting requirements for vaporooter used by sewer crew. Monthly reports to include the total feet of sewer treated with the pesticide and location description as city sanitary sewers.

Title: IMPROPER DISCHARGE ACTIVITES
Short description: Discharge
Long description: Within this category of the Stormwater Management Program, there are a total of 12 Best Management Practices.
BMPs -- 8 exiting programs
BMPs -- 1 modified program
BMPs -- 1 study
BMPs -- 5 new programs
Type: Result
Start date: 7/1/95 Due Date: 1/1/99
Who: GLEN BIRDZELL;ALEX BAILLIE;
DON KING;MIKE GUTTERRES;
OUT REACH

Progress data history
- None -

Title: BMP B1.1 PREVENTION OF ILLICIT DISCHARGES
Short description: SW PLAN CHECKING
Long description: The continuation of the City's existing plan checking and inspection programs to prevent illicit discharges to the storm drain system.

MEASURE OF SUCCESS: (VI)
Annual reporting of the volume of work directed at this effort.
Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: MIKE GUTTERRES;DON KING

Progress data history

Date: 6/1/98
Name: Progress data for MIKE GUTTERRES on Jun 1, 1998
Comment: The Stormwater Division has reviewed 5657 plans (extrapolated from 11 months of data) to prevent illicit discharges to the storm drain system.

Date: 3/18/98
Name: Progress data for ALEX BAILLIE on Mar 18, 1998
Comment: I conducted an inspection of 2036 W. Harding Way after receiving a complaint of a possible connection of a washing machine to the storm drain system. An inspection of the address found no connection to the storm drain.

Date: 8/13/97
Name: Progress data for ALEX BAILLIE on Aug 13, 1997
Comment: Alex completed his annual report narratives on time and the quality of his work was acceptable

Title: BMP B2.1 ONGOING FIELD SCREENING
Short description: DRAINAGE MONITORING
Long description: A dry weather field screening program in whch about 20% of the major outfalls will be surveyed annually for potential illicit discharges to the storm drain system.

MEASURE OF SUCCESS: (VI)
Annual report of inspections
Type: Result
Start date: 12/1/98 Due Date: 1/1/99
Who: ALEX BAILLIE

Progress data history

Date: 7/31/98
Name: Progress data for ALEX BAILLIE on Jul 31, 1998
Comment: The first thirty basins selected based on the priority ranking are being monitored this summer. The results of the tests conducted on these basins will be complied and submitted with the next annual report. See attachment B2. 1 for a list of the selected basins. The late storm season delayed the implamentation of this program. Numerical information is not complet at this time.

Date: 7/6/98
Name: Progress data for ALEX BAILLIE on Jul 6, 1998
Comment: Conducted dry weather field screening at DW-112 Lindsay and Yosemite West Manhole 1B (photo 21B). Afternoon sampling occurred at this Manhole because a car was parked over the East Manhole, which was sampled in the morning. Flow had lowered considerably to about 705 gpm by the afternoon. The water seemed more clear in the afternoon and the sampling consisted of a grab test using three discrete samples.

Date: 7/6/98
Name: Progress data for ALEX BAILLIE on Jul 6, 1998
Comment: Conducted dry weather field screening on DW-113 Edison and Lindsay Manhole - the fourth Manhole from the outlet (photos 20A and 22B). A sewer-type odor, plastic and stryra-foam trash, an oily sheen, and sediment was observed. Grab test was performed with three discrete samples.

Date: 7/6/98
Name: Progress data for ALEX BAILLIE on Jul 6, 1998
Comment: Conducted dry weather field screening on DW-116 Van Buren Manhole 4 (photos 17A and 24B). Low flow was observed along with a musty odor, surface organic material, a thin oil sheen, and some trash. There was considerable sediment in the line, and thus, the samples contained large quantities of sediment. Gas meter reported a high oxygen warning in the Manhole in the afternoon. The grab test was performed with three discrete samples.

Date: 7/6/98
Name: Progress data for ALEX BAILLIE on Jul 6, 1998
Comment: Conducted dry weather field screening on DW-115 Harrison Manhole 1 (photos 18A and 23 B). The hole had surcharged and was draining slowly. Minor trash and surface organic material was observed. There was a lot of sediment in the line, and in turn, the discrete samples contained a fairly large quantity of sediment (the samples were very dark in color). Gas meter reported a high oxygen warning in the Manhole in the afternoon.

Date: 7/6/98
Name: Progress data for ALEX BAILLIE on Jul 6, 1998
Comment: Conducted dry weather field screening and DW-109 1351 Oak (photos 20A and 25B). A slightly rancid odor, minor trash, and an oily sheen were observed. Gas meter reported a high oxygen warning during afternoon sampling in both the ambient air and Manhole air. Grab test was performed using three discrete samples.

Date: 7/6/98
Name: Progress data for ALEX BAILLIE on Jul 6, 1998
Comment: Conducted dry weather field screening on DW-112 Lindsay and Yosemite East MH 1A (photo16A). The line has surcharged and was draining at flow of 4200 gpm. Minor organic material was noted on the surface. Sampling consisted of two discrete alloquats.

Date: 7/1/98
Name: Progress data for ALEX BAILLIE on Jul 1, 1998
Comment: Conducted dry weather field screening on WK-64 Turnpike Westline Manhole #4 (photos 9A and 13B). Nothing especially unusuall was observed.

Date: 7/1/98
Name: Progress data for ALEX BAILLIE on Jul 1, 1998
Comment: Conducted dry weather field screening on WK-64 Turnpike Eastline Manhole #1 (photos 8A and 12B). Flow increased slightly throughout the day and some trash and sediment was observed in the line.

Date: 7/1/98
Name: Progress data for ALEX BAILLIE on Jul 1, 1998
Comment: Conducted dry weather field screening on LJ-80 Airport Retention Basin East Inlet Pipe (photos 11A and 14B). Flow was significant (100 gpm) and the water was filled with suspended solids and topical organic material. In the afternoon, the flow dropped considerably, and the amount of TSS, relative to the amount observed upon the first sampling period, dropped. An additional TSS was taken for analysis.

Date: 7/1/98
Name: Progress data for ALEX BAILLIE on Jul 1, 1998
Comment: Conducted dry weather field screening on DC-69 Stagecoach and Duch Creek Pump Station (photos 10A and 15B). A significant amount of trash was observed (plastics and styra-foam) as well as an oily sheen and some sediment.

Date: 6/29/98
Name: Progress data for ALEX BAILLIE on Jun 29, 1998
Comment: I conducted dry weather field screening on the 165 Duck Creek Basin.

Date: 6/29/98
Name: Progress data for ALEX BAILLIE on Jun 29, 1998
Comment: I conducted dry weather field screening on the Arch Road Industrial Retention Basin.

Date: 6/29/98
Name: Progress data for ALEX BAILLIE on Jun 29, 1998
Comment: I conducted dry weather field screening at the Western Pacific Retention Basin. Sampling was performed at both the north and south inlet.

Date: 6/23/98
Name: Progress data for ALEX BAILLIE on Jun 23, 1998
Comment: Conducted dry weather field screening at Bieghle Alley and Mormon Slough. I found some oil stains and oil filter in the gutter upstream of this outfall.

Date: 6/23/98
Name: Progress data for ALEX BAILLIE on Jun 23, 1998
Comment: Conducted Dry weather field screening on Diamond Street and Mormon Slough. Some trash scattered around outfall.

Date: 6/23/98
Name: Progress data for ALEX BAILLIE on Jun 23, 1998
Comment: Conducted dry weather field screening on 7th street and Union Pacific outfall (DC-165). No flow observed at outfall but some sludge found in first manhole.

Date: 6/17/98
Name: Progress data for ALEX BAILLIE on Jun 17, 1998
Comment: I conducted dry weather field screening on Holman pump station.

Date: 6/15/98
Name: Progress data for ALEX BAILLIE on Jun 15, 1998
Comment: I conducted dry weather field screening on Grupe Industrial Park pump Station.

Date: 6/15/98
Name: Progress data for ALEX BAILLIE on Jun 15, 1998
Comment: I conducted dry weather field screening on the Airport Way/ Duck Creek pump station. I found a discharge of oily water at 12th and Airport Way. In addition to the normal dry field screening test, a sample was collected for oil/ grease testing. The pump station was shut down pending further investigation.

Date: 6/15/98
Name: Progress data for ALEX BAILLIE on Jun 15, 1998
Comment: I conducted dry weather field screening on Weston Ranch pump station.

Date: 6/10/98
Name: Progress data for ALEX BAILLIE on Jun 10, 1998
Comment: No dry weather field screening performed to date due to rain in May and June.

Date: 8/6/97
Name: Progress data for ALEX BAILLIE on Aug 6, 1997
Comment: Completed the form for field screening sample evaluation log of major outfalls. The form incorporates the minimum required sample parameters of pH, copper, total chlorine, total phenol, and surfactants along with a description of the estimated flow rate.

Title: BMP B3.1 INVESTIGATION AND ELIMINATION OF ILLICIT DISCHARGES
Short description: ILLICIT DISCHARGES
Long description: A program for the investigation and mitigation of potential illicit discharges.

MEASURE OF SUCCESS: (VI)
Annual investigation and mitigation report.
Type: Result
Start date: 12/1/98 Due Date: 1/1/99
Who: ALEX BAILLIE

Progress data history
Date: 6/26/98
Name: Progress data for ALEX BAILLIE on Jun 26, 1998
Comment: I investigated a complaint of white powder in the gutter at 208 East Peral. I spoke to the resident who informed me the white powder was soap used to absorb an oil leak. I instructed him to clean up the soap out of the gutter. I also instructed him that he could not wash it down the storm drain.

Date: 6/23/98
Name: Progress data for ALEX BAILLIE on Jun 23, 1998
Comment: I issued a Notice of Correction to Delta Bluegrass Company for washing trucks and equipment to the storm drain.

Date: 6/16/98
Name: Progress data for ALEX BAILLIE on Jun 16, 1998
Comment: I investigated the stormwater system around 12th and Airport Way to determine the source of the oily water discharge discovered yesterday during the dry weather field screening of this area. The discharge had stopped and no source was discovered during a search of the storm drains.

The storm water pump station at Airport Way will be diverted and pumped to the sewer.

Date: 6/9/98
Name: Progress data for ALEX BAILLIE on Jun 9, 1998
Comment: I inspected 200 E. Weber to verify that Pauls Painting had cleaned out the paint chips from the storm gutter. I found the sidewalk area and gutter to be clean and free of paint chips.

Date: 6/5/98
Name: Progress data for ALEX BAILLIE on Jun 5, 1998
Comment: I received a complaint of paint chips being washed into the gutter at 200 E. Weber. I inspected the site and found that Paul's Painting has high pressure cleaned the building. The cleaning operation had caused paint chips off the building to be washed into the storm gutter. I spoke with Paul's Painting and instructed them not to hose paint into the gutter. Paul's Painting will sweep up the paint chips deposited in the gutter.

Date: 5/12/98
Name: Progress data for ALEX BAILLIE on May 12, 1998
Comment: I investigated a complaint regarding waste oil being stored next to a dumpster at 7400 Shoreline Drive. I found six 1-gallon plastic containers full of a black oil like substance sitting next to the dumpster. I notified San Joaquin County Hazardous Waste Section about the waste .

Date: 5/11/98
Name: Progress data for ALEX BAILLIE on May 11, 1998
Comment: I investigated a complaint regarding pool water discharge to the storm gutter at 3147 Dartmouth Court. I found the pool was being drained to the gutter by JC & Sons pool maintnenace company. I informed the pool maintenance worker about the Code prohibiting the discharge of pool water to the storm system. I also left a transmittal form for the residents and an informational booklet on pool maintenance.

Date: 5/7/98
Name: Progress data for ALEX BAILLIE on May 7, 1998
Comment: I investigated a complaint regarding a blue colored waste at 1201 Wilson Way. The waste was from a latex paint from a contractor that had cleaned his paint brushes. The water had been poured out in the lot to dry. No paint found in gutter. Spoke to contractor regarding proper disposal practices.

Date: 5/7/98
Name: Progress data for ALEX BAILLIE on May 7, 1998
Comment: I investigated a compliant regarding unknown discharge source being pumped into the gutter at 1566 Tillie Lewis. The stormwater pump for the parking lot had failed which caused the loading dock's parking area to become flooded. A portable pump had been started to relieve the flooding.

Date: 5/4/98
Name: Progress data for ALEX BAILLIE on May 4, 1998
Comment: I investigated a complaint about pool water being pumped into the gutter from 17 Pardee. I found that the water reported was from a plastic drain line connected to the resident's gutter to drain stormwater away from the house. The resident was aware that his spa had to be discharged into the sewer and not the gutter. The resident informed me that a cleanout had been installed by the spa for this reason.

Date: 5/4/98
Name: Progress data for ALEX BAILLIE on May 4, 1998
Comment: I investigated a complaint of oil dumping into the gutter at 2854 W. Rose. ABC Mobile Mechanic works out of this residential site. I found a full oil catch pan in the driveway on the back of a pickup truck. I spoke to the residents about oil disposal practices and had them remove the oil pan.

Date:	5/1/98
Name:	Progress data for ALEX BAILLIE on May 1, 1998
Comment:	I investigated a compliant of oil dumping at 735 Terry Court. I found that the resident at 735 Terry Court had spilled transmission fluid while working on his car. I spoke to the resident regarding proper handling and disposal of car fluids. Resident was in the process of cleaning up the front yard area.
Date:	4/13/98
Name:	Progress data for ALEX BAILLIE on Apr 13, 1998
Comment:	Investigated a compliant regarding oil leaking into the gutter from parked cars at 2438 Presidente. The inspection found no free oil, but I did note lots of oil like stains along the gutter. The catchbasin was free of any oil residual.
Date:	4/9/98
Name:	Progress data for ALEX BAILLIE on Apr 9, 1998
Comment:	Investigated complaint of pool being pumped out and discharged into the backyard of 2003 Ladd Track.
Date:	1/13/98
Name:	Progress data for ALEX BAILLIE on Jan 13, 1998
Comment:	Inspected 6155 Huntingdale Circle in response to a complaint of discharge from pumping out a basement to the storm water system. The house is under construction and has a sump pump set up for handling storm water runoff from the site. The site was muddy and some sediment may be discharged with the pump. I noted some mud in the gutter. I notified Mike Gutterres to include the house in the construction site inspections and review the SWPPP for possible modifications if necessary.
Date:	1/12/98
Name:	Progress data for ALEX BAILLIE on Jan 12, 1998
Comment:	Maintenance crew reported discharge of aqua blue colored water from the Quail Lakes Storm Water pump station. The color orginated upstream from the residental lake that discharge into the station. The maintenance lead person, Lonnie Lobosco obtained the name of the person responsible for treating the residential lakes, Todd Luke 339-8701. I called Todd to obtain more information of the type of product being used in the lakes. Todd informed me that the material used in the lakes is a dye. The dye is used to control light pentration in the lakes to suppress aquatic plant growth. Todd told me that the material is used in all the residential lakes and is regularly discharged. According to Todd, the substance does not contain any herbicide materails. I had Todd fax me the MSDS and fact sheet on this product.
Date:	12/10/97
Name:	Progress data for ALEX BAILLIE on Dec 10, 1997
Comment:	Responded to a reported spill from the Fire Department at GATX company located at 4547 Frontier. A truck trailer carrying batteries had caught fire and around 300-500 gallons of fire water had entered the storm drain. The pH of the water tested with pH strip indicated that the water had a pH of around 1. The flow was damed off downstream of the fire location. The storm drain is scheduled to be pumped out and cleaned by GATX.
Date:	11/19/97
Name:	Progress data for ALEX BAILLIE on Nov 19, 1997
Comment:	Inspected gutter along 120-142 Aurora Street in response to a complaint of possible illicit discharge from Advance Milk Company . The company manufactures milk feed products for dairy cattle. Sample collected from the gutter.
Date:	11/7/97
Name:	Progress data for ALEX BAILLIE on Nov 7, 1997
Comment:	Soil samples collected from Charter Way Basin to check for possible contamination from QB Rebuilders storm water discharges. Sample report from QB Rebuilders indicated high levels of asbestos being discharged into storm water system that feeds the basin. Sampling was also done for possible metal contamination due to past practices and sample reports from QB Rebuilders. QB Rebuilders does not have a Sotrm Water Permit and has been instructed to get one.
Date:	10/30/97
Name:	Progress data for ALEX BAILLIE on Oct 30, 1997
Comment:	Investigated complaint of steam cleaning wastewater from furniture being discharged to the storm drain at 7273 Murray Drive. Community Thirft was found washing used furniture off with a high pressure washer next to a storm drain. Citation issued to Cease and Desist operation of furniture washing over the storm drain.

Date: 10/16/97
Name: Progress data for ALEX BAILLIE on Oct 16, 1997
Comment: Compliant received again for illicit connection at Kiltie/Iris. Followup inspection found a flexible hose running from the parking lot of the apartment complex at 8037 El Dorado to a washing machine on the patio of apartment #1. The washing machine belongs to the tenants of apartment #1.

The City Code Enforcement Section issued a citation to have the hose and washing machine disconnected.

Date: 10/15/97
Name: Progress data for MIKE GUTTERRES on Oct 15, 1997
Comment: Investigated compliant received for illicit connection at Kiltie/Iris. Followup inspection found a flexible hose running from the parking lot of the apartment complex at 8037 El Dorado to a washing machine on the patio of apartment #1. Pictures were taken and Alex Baillie, Environmental Control Officer MUD, was notified.

Date: 10/8/97
Name: Progress data for ALEX BAILLIE on Oct 8, 1997
Comment: Investigated a complaint that laundry water was being discharged to the City storm drain at Kiltie/Iris. An inspection of the storm drains on the corner of Kiltie/Iris found no drainage hoses leading to the gutter. A sample for pH was collected from the manhole and test results found the pH to be around 7.

Date: 9/25/97
Name: Progress data for ALEX BAILLIE on Sep 25, 1997
Comment: Responded to spill of oil like substance at Ryde Storm Water Pump Station. A light sheen of oil was found entering the station. Station to be pumped out to the sewer and not discharged.

Date: 9/19/97
Name: Progress data for ALEX BAILLIE on Sep 19, 1997
Comment: Drafted memo for City Attorney to review questions raised by Scrubbie Car Wash regarding charity operated car washing events.

Date: 9/17/97
Name: Progress data for ALEX BAILLIE on Sep 17, 1997
Comment: Meet with John Frey of Scrubbies Car Wash to discuss concerns regarding discharges from charity car wash events. John raised the following questions regarding charity car wash operations in Stockton.

1. Are charity organizations that operate car wash events on a daily basis at multiple locations around the City required to obtain a business license or peddler/vendor license from the City?

2. Do commerical facilities that allow car wash events to operate regularly (several times per month) at their sites have any requirements for land use codes, sand/oil traps or permits similar to those of a commerical car wash?

3. Where do high school fund raising events fall with respect to car washes.

Scubbies questions will be forwarded to the City Attorney's Office for legal review.

Date: 8/8/97
Name: Progress data for ALEX BAILLIE on Aug 8, 1997
Comment: Meet with the MUD Engineer Section to discuss putting all the Level-1 and Level-2 industries from the Storm Water database onto the GIS mapping system. A storm water basin map, showing the trunk lines in relation to the industrys' locations on the storm system within a basin, will enhance investigation efforts into illicit connects.

In addition, the Office of Emergency Services was contacted for information on the database handling the Hazardous Material Management Plan (HMMP). Industries must report all chemicals stored on site in their HMMP. The chemical inventory lists would be helpful in identifying the types of chemicals utilized with a storm water basin. This information, like the industrial map, would be useful in the investigation of illicit connects.

Date: 8/1/97
Name: Progress data for ALEX BAILLIE on Aug 1, 1997
Comment: The fire water from Cal Cedar fire entered the storm water pump station at Orange/Sonora at around 15:10 hours. The water looked to contain a lot of organic material, saw dust, and wood chips. A slight sheen like oil was noticed on the surface of the incoming water. The City Maintenance crew shut off the pump to the station until the water could be more closely examined.

Date: 7/16/97
Name: Progress data for ALEX BAILLIE on Jul 16, 1997
Comment: Heavy oil type waste found at Orange and Sonora pump station by City maintenance crew. Investigated storm drain line serving the Orange/Sonora pump station for possible sources of oil type waste. Oil found in manholes back to Washington Street. There are two sites which have storm water connections in this area, McCormick & Baxter (super fund site) and Cal Cedar. Samples collected for testing from the pump sump and the Washington Street manhole.

Pump had been removed from the station last month for maintenance work so no discharge occurred from the pump station. Waste oil hauler contacted to clean out the pump station. Site inspections to be conducted tomorrow at Cal-Cedar and McCormick & Baxter.

Date: 7/16/97
Name: Progress data for ALEX BAILLIE on Jul 16, 1997
Comment: I sorted storm water database for selecting dry weather screening for illicit connects in the City using the total basin score. Developed report query for the annual report.

Title: BMP B4.1 SWPPPs FOR MUNICIPAL FACILITIES
Short description: CITY'S SWPPP
Long description: The development and implementation of SWPPP by the Municipal Service Center and the two City operated land fills.

MEASURE OF SUCCESS: (VI)
An annual report on the implementation of the SWPPP at those municipal facilities.
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: ALEX BAILLIE

Progress data history

Date: 7/28/98
Name: Progress data for ALEX BAILLIE on Jul 28, 1998
Comment: Analytical results of samples taken during a storm event are in Appendex B4.1

Date: 4/9/98
Name: Progress data for ALEX BAILLIE on Apr 9, 1998
Comment: Sent list of certified laboratories to Jay Holman, Fleet Maintenance Supervisor, at corporation yard so samples could be collected and analysis done on storm water samples.

Date: 1/8/98
Name: Progress data for ALEX BAILLIE on Jan 8, 1998
Comment: Received SWPPP from Jay for Municipal Corporation Yard.

Date: 1/5/98
Name: Progress data for ALEX BAILLIE on Jan 5, 1998
Comment: Jay Hoffman sent a copy of Municipal Corporation Yard SWPPP for storm water file created to address this BMP.

Title: BMP B4.2 INDUSTRIAL INSPECTIONS FOR SPILL PREVENTION AND RESPONSE
Short description: SPILL PREVENT.
Long description: The intigration of the spill prevention and response into the City Fire Department Industrial Inspection Program.

MEASURE OF SUCCESS: (VI)
Annual report of the effort made by the Fire Department.
Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: ALEX BAILLIE

Progress data history

Date: 7/28/98
Name: Progress data for ALEX BAILLIE on Jul 28, 1998
Comment: List of inspections made by the fire department staff are in Appendex B4.2

Date: 2/11/98
Name: Progress data for ALEX BAILLIE on Feb 11, 1998
Comment: Updated Fire Checks database with latest set of fire inspection reports.

Date: 1/13/98
Name: Progress data for ALEX BAILLIE on Jan 13, 1998
Comment: Input latest fire inspection reports into the Storm Water data "firechk" table.

Date: 12/9/97
Name: Progress data for ALEX BAILLIE on Dec 9, 1997
Comment: Deliver revised list of industries to the Fire Department for conducting fire inspection checks.

Date: 12/4/97
Name: Progress data for ALEX BAILLIE on Dec 4, 1997
Comment: The latest fire inspections for storm water have been updated and added to the "Fire Checks" database.

Date: 9/19/97
Name: Progress data for ALEX BAILLIE on Sep 19, 1997
Comment: Provide Fire Department with more storm water inspection forms for industrial site visits. Fire Department is still working on the level 2 industries.

Date: 9/9/97
Name: Progress data for ALEX BAILLIE on Sep 9, 1997
Comment: Spoke to Ray Call, Fire Department, regarding the storm water industrial inspections conducted by the Fire Department. The Fire Department is still working off the second list of industries.

Title: BMP B4.3 HAZARDOUS MATERIALS EMERGENCY RESPONSE PLAN
Short description: HAZMAT
Long description: The adoption and implementation of a Hazardous Materials Emergency Response Plan by the City.

MEASURE OF SUCCESS; (VI)
Annual report on the number of responses to hazardous material spills and the training and education provided City work force.

Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: OUT REACH

Progress data history

Date: 8/6/98
Name: Progress data for OUT REACH on Aug 6, 1998
Comment: The City Fire Department has trained 172 First Responders, 16 hazmat Techs, and 17 hazmat specialists

Date: 6/8/98
Name: Progress data for OUT REACH on Jun 8, 1998
Comment: The City of Stockton Fire Department responded to 405 Hazardous Material spill incidences. These responses were each handled in accordance with the City of Stockton Hazardous Materials Response Plan. Documentation of the Plan and spill responses are on file at the administrative offices of the Stockton Fire Department.

Title: BMP B5.1 PUBLIC REPORTING PROGRAM
Short description: PUBLIC REPORTING
Long description: 1. City will continue the existing 911 public reporting system
2. City will evaluate the feasibility of alternative programs to encourage public reporting

MEASURE OF SUCCESS: (VI)
Annual report on the number of 911 calls and the evaluation of alternative reporting systems.
Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: DON KING;OUT REACH

Progress data history
Date: 6/8/98
Name: Progress data for DON KING on Jun 8, 1998
Comment: As of this date there have been 405 Hazmat calls from July 1, 1997 to 911.

Title: BMP B6.1 PUBLIC EDUCATION
Short description: PUBLIC EDUCATION
Long description: 1. City will continue the use of the Help brochure
2. City will develop and implement the Auntie Pollution Program
3. City will participate in the TOPPS program

MEASURE OF SUCCESS: (VI)
Annual report on the efforts expended in each of the areas mentioned above.
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: DON KING;OUT REACH

Progress data history
Date: 6/9/98
Name: Progress data for DON KING;OUT REACH on Jun 9, 1998
Comment: 397 stormwater pollution prevention commercials were aired on cable television at a total cost of $1,088. Oil and pesticides were the subject matter of commercials.

Date: 6/9/98
Name: Progress data for DON KING;OUT REACH on Jun 9, 1998
Comment: The Sally-Save-Water "Stormwater Pollution Prevention Program" was presented to 24 fifth grade classes at 6 Stockton Unified Elementary Schools. Each school received a "Sally-Save-Water Don't Abuse Mother Earth ... Stop Stormwater Pollution" video along with coordinating activity booklets, stickers, and posters. Total cost for the school intervention program was $2,400.

Date: 4/23/98
Name: Progress data for DON KING;OUT REACH on Apr 23, 1998
Comment: TOPPS Solutions For Compliance Workshop was held. 78 individuals attended and there were 25 booths set up by various venders.

Date: 3/17/98
Name: Progress data for DON KING;OUT REACH on Mar 17, 1998
Comment: Glen Birdzell Attended TOPPS meeting this month. Ag Expo survey indicated the two most sought after bits of information by the Ag community was where to recycle oil and the do's and don't of NO TRESPASSING signs. The Solutions for Compliance Main Mailer was approved. 2000 On the Safe Side Newsletters were sent out to county wide businesses.

Date: 2/18/98
Name: Progress data for DON KING;OUT REACH on Feb 18, 1998
Comment: Glen Birdzell Attended the TOPPS meeting this month. AG Expo was considered a success by all. Edison High School Selected a name for their Adopt-A-Stream project-- LEAP-- Let Eduction Attack Pollution. Annual TOPPS awards for Environmental Excellence by committee was assigned -- Diane Parks, League of Women Voters, is Chair person. Solution for Compliance Workshop's speakers list was finalized. Location of workshop was confirmed as Elkhorn Country Club.

Date: 2/9/98
Name: Progress data for DON KING;OUT REACH on Feb 9, 1998
Comment: City of Stockton and County of San Joaquin entered a contract with Montoya Communications for the development of a Multi-ethnic public outreach strategy. The cost of the first year of this effort is approximately $ 33,000. county of San Joaquin Public Works Department is administering this program, and the City is financially supporting the effort at 75% of the total cost.

Date: 1/22/98
Name: Progress data for MIKE GUTTERRES on Jan 22, 1998
Comment: Attended Ag Expo and handed out material at TOPPS booth.

Date: 1/21/98
Name: Progress data for ALEX BAILLIE on Jan 21, 1998
Comment: Attended Ag Expo and handed out material at TOPPS booth.

Date: 1/14/98
Name: Progress data for DON KING;OUT REACH on Jan 14, 1998
Comment: Glen Birdzell Attended the regular meeting for TOPPS for this January. The Compliance Workshop for 1998 was the main topic discussed. Glen is to prepare an outline of the changes in the Storm Water Porgram brought about by draft Phase II regs. as a topic for the workshop. The positive economic impacts recycling tires through Air Products Co-Gen facitlity will be a panel discussion. Safe Side Newsletter will be out later this month. This newsletter contained several ideas for the prevention of errosion on a construction site, and spill prevention at an industrial site. Edison High School selected Walker Slough for its Adop-A-Stream project. TOPPS is going to contact the Manufacturers Round Table of San Joaquin County to solicit donations from the Business community for the Edision Project.

Date: 12/17/97
Name: Progress data for DON KING;OUT REACH on Dec 17, 1997
Comment: Glen Birdzell attended a TOPPS meeting. Up-dates to the TOPPS web site were discussed. It was recognized that maintenance of the site was critical if it were to be of use to the business community of Stockton and San Joaquin County. Alison Hudson, County recycle coordinator, wanted information for the next Safe Side newsletter. The 2000 name mailing list for the Solutions For Compliance Workshop was approved and the Teaser Card was targeted for mailing in early January. TOPPS has been donated a booth at the Ag Expo by Joe Bagley enterprises. He will also provide fuel cans as give-aways. It was mentioned that Edison High School was interested in an Adopt-A-Stream type program. City and County Staff will work with Edision on this project. TOPPS can support.

Date: 12/11/97
Name: Progress data for DON KING;OUT REACH on Dec 11, 1997
Comment: City and County are starting to develop an environmental awarness program with Edison Highschool that could be a model for the other high schools in the community. First phase will be inter high school competition in the adopt the stream program. Program will have daily events during Earth Week.

Date: 12/10/97
Name: Progress data for DON KING;OUT REACH on Dec 10, 1997
Comment: Attended meeting with San Joaquin County to discuss the development of a strategic plan for community outreach.

Date: 12/3/97
Name: Progress data for DON KING;OUT REACH on Dec 3, 1997
Comment: The TOPPS sub- committee responsible for the Compliance Workshop held its first meeting. Every effort will be made to have the event, Earth Week (April 1998). Judith Buethe will report the cost of various locations for the event at the next TOPPS Council meeting.

Date: 12/1/97
Name: Progress data for DON KING;OUT REACH on Dec 1, 1997
Comment: Attended City/County coordination meeting

Date: 11/19/97
Name: Progress data for DON KING;OUT REACH on Nov 19, 1997
Comment: Attend TOPPS Council Meeting. Discussion centered on the selection of co-chair and the committees for the various program elements this coming year.

Top level goals - Details with Progress data

Date: 10/22/97
Name: Progress data for DON KING;OUT REACH on Oct 22, 1997
Comment: Attend TOPPS council Meeting. Discussion was on the programs to be presented the next year. The Compliance Workshop will be the main event again this coming year. Ag Expo will also be one of the main events for TOPPS participation.

Date: 10/2/97
Name: Progress data for DON KING;OUT REACH on Oct 2, 1997
Comment: Attend the Central Valley Storm Water Permitee coordination Meeting. Program highlights were shared.

Date: 9/25/97
Name: Progress data for DON KING;OUT REACH on Sep 25, 1997
Comment: Attend City County coordination meeting.

Date: 9/17/97
Name: Progress data for DON KING;OUT REACH on Sep 17, 1997
Comment: Attended TOPPS Council Meeting. The discussions centered on the Compliance Workshop and the survey taken at the end of the program.

Date: 8/20/97
Name: Progress data for DON KING;OUT REACH on Aug 20, 1997
Comment: TOPPS Advisory Board Meeting was held. Budget report indicated that the Mayor's award breakfast netted $70 for other TOPPS projects. (The restaurant gave several free meals) There was a general discussion on updates to the TOPPS Website.

Date: 8/12/97
Name: Progress data for ALEX BAILLIE on Aug 12, 1997
Comment: TOPPS Advisory Committee met to review industrial awards program. Methods of improving the participation of the industrial and commercial community were discussed as well as the use of the current year's winners in advertising this program.

Date: 7/29/97
Name: Progress data for ALEX BAILLIE on Jul 29, 1997
Comment: Attended the TOPPS awards breakfast for the 1996 TOPPS winners.

Date: 7/21/97
Name: Progress data for ALEX BAILLIE on Jul 21, 1997
Comment: Picked up TOPPS awards for upcoming Mayor's breakfast.

Date: 7/18/97
Name: Progress data for ALEX BAILLIE on Jul 18, 1997
Comment: Reviewed TOPPS Awards Announcement for Mayor's Breakfast.

Date: 7/8/97
Name: Progress data for DON KING on Jul 8, 1997
Comment: Held meeting for the TOPPS Awards Committee to select 1996 winners in air, water, and land pollution prevention. The committee selected Air Products for land, Corn Products for air, and San Joaquin Vector Control District for water.

I placed an order for three trophy plates from Kens Trophy that will be finished by 7-22-97. I also contacted the three winners and informed them that they had won the award in the specified category. I arranged with Judith Buethe to write a short letter describing the pollution prevention items/actions taken by each of the TOPPS applicants.

Date: 7/2/97
Name: Progress data for DON KING;OUT REACH on Jul 2, 1997
Comment: Attended City/County coordination meeting

Date: 7/1/97
Name: Progress data for ALEX BAILLIE on Jul 1, 1997
Comment: Setup TOPPS awards judging event for July 8 at 09:00 with Newark Sierra, ASCO, and Concrete INC.

Title: BMP B6.2 STORM DRAIN STENCILING
Short description: DI STENCILING
Long description: City authorized the Vector Control District to stencil the City's storm drains.

MEASURE OF SUCCESS; (VI)
Annual report indicating the extent of this effort by the Vector Control.
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: OUT REACH

Progress data history

Date: 6/22/98
Name: Progress data for DON KING on Jun 22, 1998
Comment: Received progress report from San Joaquin County Mosquito & Vector Control District on the storm drain stenciling program. For the period of July 1, 1997 through June 1998, the District stenciled 2090 storm drains in the unincorporated area of San Joaquin County and in the incorporated area of the City of Stockton. Approximately 70% of the storm drains were in the City. The esitmated cost for stenciling a storm drain is around $1.06 per drain.

Date: 7/22/97
Name: Progress data for DON KING on Jul 22, 1997
Comment: The Girl Scout Troop was not responsive to attempts at setting up a time before the City council to receive a proclamation.

Date: 7/16/97
Name: Progress data for ALEX BAILLIE on Jul 16, 1997
Comment: Received progress report from San Joaquin County Mosquito & Vector Control District on the storm drain stenciling program. For the period of January 1997 through June 1, 1997, the District stenciled 2275 storm drains in the unincorporated area of San Joaquin County and in the incorporated area of the City of Stockton. The esitmated cost for stenciling a storm drain drain is around $1.06 per drain.

In addition, the District assisted several groups, Cal-Trans, a Stockton-based Girl Scout troop, Stockton-based Eagle Scout, and University of the Pacific environmental group with a similar stenciling campaign. The total number of basins stenciled by these groups is not known.

The District is contemplating for 1997-98 expanding the stenciling program to include the posting of permanent signs at urban and rural creeks with a similar message to the stenciled storm drains.

Title: BMP B6.3 HOUSEHOLD HAZARDOUS WASTE COLLECTION
Short description: H. H. WASTE COL.
Long description: City will assist the County of San Joaquin to integrate stormwater quality issues into the public education programs for the County's Household Hazardous Waste Program.

MEASURE AOF SUCCESS: (VI)
Annual report evaluating this effort.
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: OUT REACH

Progress data history

Date: 8/6/98
Name: Progress data for OUT REACH on Aug 6, 1998
Comment: The City of Stockton supports the household hazardous waste program through a tx of $4 per year per parcel. 29,000 pounds of hazardous wastes were collected this past year in the metropolitan Stockton area. Appendex B6.3

Date: 6/15/98
Name: Progress data for OUT REACH on Jun 15, 1998
Comment: Allison Hudson, Soild Waste Coordinator for San Joaquin County has indicated information will be available after July 1, 1998 quantifying the amount of Hazardous wastes that were collected at local collection events.

Title: BMP B6.4 USED OIL RECYCLING
Short description: OIL RECYCLING
Long description: Continuation of advertisment of the locations of used oil recycling centers and public information encouraging the proper management of used oil.

MEASURE OF SUCCESS: (PI;VI)
Annual reporting of the amount of used oil collected within the city of stockton and the extent of public education efforts.
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: OUT REACH

Progress data history
Date: 8/6/98
Name: Progress data for OUT REACH on Aug 6, 1998
Comment: The Voluntary oill collection program collected 104,880 gallons of oil. See Appendex B6.3

Date: 10/31/97
Name: Progress data for ALEX BAILLIE on Oct 31, 1997
Comment: Developed questions on sewage, grey water, and paint from boat and marina operations. Questions to be included in oil recycling boater survey to be conducted by Research Institute at San Francisco University.

Title: BMP B7.1 SANITARY SEEPAGE/OVERFLOW COORDINATION
Short description: SEEPAGE SURVEY
Long description: Continuation of the existing program City I/I inspections and the coordination of the identification and elimination sanitary seepage overflow between the City and County.

MEASURE OF SUCCESS: (VI)
Annual report identifying incidents and mitigation.
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: OUT REACH

Progress data history
Date: 6/15/98
Name: Progress data for OUT REACH on Jun 15, 1998
Comment: Ed Formosa, Deputy Director Municipal Utilites/Water Sewer, reported 42 sanitary sewer over flows FY 1997/98. This information has been provided to the Regional Board on a monthly basis.

Title: INDUSTRIAL ACTIVITES
Short description: INDUSTRY
Long description: A program to monitor and control pollution form industrial activities. Seven Best Management Practices are to be implemented in this program

BMP -- 1 study
BMP -- 6 new programs

Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: GLEN BIRDZELL;ALEX BAILLIE; DON KING;MIKE GUTTERRES

Progress data history
Date: 7/22/97
Name: Progress data for ALEX BAILLIE on Jul 22, 1997
Comment: Complied addendium material for 1996 annual report to the Regional Water Quality Control Board for listed BMPs in the Industrial Activities. Reviewed the BMPs data sheets for 1996-97 and revised comments for the annual report.

Title: BMP C1.1 PRIORITY INDUSTRIAL FACILITY IDENTIFICATION
Short description: PIF ID
Long description: Ongoing identification of major and minor Priority Industrial Facilities for the purpose of inspections.

MEASURE OF SUCCESS: (VI)
Annual update of the PIF list.
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: ALEX BAILLIE

Progress data history
Date: 7/28/98
Name: Progress data for ALEX BAILLIE on Jul 28, 1998
Comment: City Council has adopted a resolution " Industrial Facilities Monitoring Plan" that describes the methods and proceedures for indentification and prioitizing Priotiy Industrial Facilites. See Appendex C1.4

Date: 12/4/97
Name: Progress data for ALEX BAILLIE on Dec 4, 1997
Comment: The latest WDID permit numbers from the Water Resources database for industrial users has been incorporated into the City storm water database.

Date: 11/14/97
Name: Progress data for ALEX BAILLIE on Nov 14, 1997
Comment: Received latest printout of businesses around Stockton that have filed NOI with the state water resources board and received a waste discharge identification number. The storm water database can be updated to reflect the new list.

Date: 8/15/97
Name: Progress data for ALEX BAILLIE on Aug 15, 1997
Comment: Research report quanities for chemical releases for the Industrial Advisory Committee. Copied SARA reportable release and reportable quanities of hazardous substances designated pursuant to the Clean Water Act.

Contacted the Office of Emergency Services for information on reporting releases within San Joaquin County.

Title: BMP C1.2 INDUSTRIAL CONDITION OF ACCEPTANCE
Short description: INDUSTRIAL PERMIT
Long description: A program for the development and implementation of Conditions of Approval to supplement the State of CA General Permit of Industrial Activities.(develop 1997/98)

MEASURE OF SUCCESS: (VI)
The adoption by the City Council Administrative Guidelines for the Conditions of Approval
Type: Result
Start date: 7/1/97 Due Date: 7/1/98
Who: ALEX BAILLIE

Progress data history

Date: 6/16/98
Name: Progress data for ALEX BAILLIE on Jun 16, 1998
Comment: I picked up the copies of the Storm Water Guidelines from Duplicating. The pages in the book had been put together backwards and will have to be printed over again.

Date: 6/9/98
Name: Progress data for ALEX BAILLIE on Jun 9, 1998
Comment: The City Council adopted the Stormwater Industrial Monitoring Program Guidelines today. See Appendex C1.4

Date: 5/14/98
Name: Progress data for ALEX BAILLIE on May 14, 1998
Comment: Attended the IAC meeting and reviewed the guidelines with committee. I edited the guidelines to meet the committee comments. The guidelines are scheduled to go before the City Council in June.

Date: 4/10/98
Name: Progress data for ALEX BAILLIE on Apr 10, 1998
Comment: Worked on developing the Industrial Conditions of Acceptance manual for the IAC.

Date: 4/9/98
Name: Progress data for ALEX BAILLIE on Apr 9, 1998
Comment: Worked on development document for the Industrial Conditions of Acceptance.

Date: 4/8/98
Name: Progress data for ALEX BAILLIE on Apr 8, 1998
Comment: Worked on development of guidelines and enforcement response plan for ordinance modifications for 3 hours.

Date: 2/5/98
Name: Progress data for ALEX BAILLIE on Feb 5, 1998
Comment: I attended the IAC meeting #8. The group discussed outreach activities for the industrial sector and how to get small business to comply with storm water regulations. The group also reviewed the revised fact sheet.

Date: 1/7/98
Name: Progress data for ALEX BAILLIE on Jan 7, 1998
Comment: I attended the IAC meeting.

Date: 11/20/97
Name: Progress data for ALEX BAILLIE on Nov 20, 1997
Comment: Attended sixth Industrial Advisory Committee meeting and reviewed draft guidelines for determining Level-1 industries and guidelines for determining major and minor classification. CDM is making the committee's suggested changes, and next meeting is scheduled for January 7, 1998.

Date: 9/19/97
Name: Progress data for ALEX BAILLIE on Sep 19, 1997
Comment: Sent CDM fax letter with the list of modifications needs for the guideline for deterimining level-1 and major/minor facilities. CDM to run new matrix using level-1 and top level 2 facilities from City old matrix list.

Date: 9/16/97
Name: Progress data for ALEX BAILLIE on Sep 16, 1997
Comment: Received draft guidelines for determining Leve-1 and Major/Minor facilities from CDM. For scoring, the existing framework is kept in place with some minor changes such as size of facility; and the number of PIFs per water shed has been dropped.

Date: 9/4/97
Name: Progress data for ALEX BAILLIE on Sep 4, 1997
Comment: Attended the fourth Industrial Advisory Committee meeting. The committee approved having the City direct CDM to develop a matrix for determining level-1 from level-2 facilities based on the SARA reporting limits. The committee will review the proposal at the next meeting. The committee will also consider using the reporting critera for the Clean Water Act to determine major and minor level-1 facility.

Date: 8/27/97
Name: Progress data for ALEX BAILLIE on Aug 27, 1997
Comment: Met with Ken Payne and Pete Tobia of CDM to discuss implementation of Task 7. The task specifications include development of definition for level 1 PIFs, major and minor classification, outreach education for industries and monitoring exemption.

Date: 8/20/97
Name: Progress data for ALEX BAILLIE on Aug 20, 1997
Comment: Assembled and mailed meeting material for the Industrial Advisory Committee upcoming September 4, 1997 meeting.

Date: 8/19/97
Name: Progress data for ALEX BAILLIE on Aug 19, 1997
Comment: Setup meeting Camp, Dresser and McKee to review Task-7S Development of Monitoring Exemption Certifcation Program. The first task will be to assist in the development of criteria for determining level-1 PIF.

Date: 8/7/97
Name: Progress data for ALEX BAILLIE on Aug 7, 1997
Comment: Reviewed taped minutes of the Industrial Advisory Committee meeitng. The Industrial Adivisory Committee requested that information on procedures used by the Office of Emergency Services prioritize Hazardous Material Management Plan inspections.

The Office of Emergency Services was contacted regarding procedures for selecting industries for inspection. The law mandates that HMMP are to be inspected once every three years. The agency does not have any set procedures for prioritizing inspections. Industrial inspections are conducted on a revolving basis every three years or when a compliant is received by the agency.

Date: 7/30/97
Name: Progress data for ALEX BAILLIE on Jul 30, 1997
Comment: Completed Industrial Advisory Committee package for third meeting scheduled on August 7, 1997. Meeting agenda for group will contain reviewing determination of criteria for level 1 PIF. Industrial Advisory Committee review of classification for major and minor listing of PIF also placed on the agenda.

Minutes from second meeting included with package and sent to the committee members along with updated roster.

Title: BMP C1.3 INDUSTRIAL FACILITIES INSPECTION PROGRAM
Short description: INDUSTRIAL INSPECT.
Long description: Development and implementation of an inspection program for Priority Industrial Facilities (Develop 1997/98)

MEASURE OF SUCCESS: (VI)
Annual report of inspections made and the enforcement actions taken.
Type: Result
Start date: 11/1/96 Due Date: 3/1/98
Who: ALEX BAILLIE

Progress data history

Top level goals - Details with Progress data

Date:	6/9/98
Name:	Progress data for ALEX BAILLIE on Jun 9, 1998
Comment:	The City Council adopted the Stormwater Industrial Monitoring Program Guidelines today. See Appendex C1.4
Date:	6/1/98
Name:	Progress data for ALEX BAILLIE on Jun 1, 1998
Comment:	I inspected Advance Recycling's new location on 1815 S. Union Street. Advance Recycling plans to have no outside storage of materials at this site.
Date:	4/22/98
Name:	Progress data for ALEX BAILLIE on Apr 22, 1998
Comment:	I attended the Annual CWEA conference in Oakland. Topics of discussion included phase-2 stormwater regulations.
Date:	4/20/98
Name:	Progress data for ALEX BAILLIE on Apr 20, 1998
Comment:	Inspected Ultimate Container for compliance with Notice to Clean. Ultimate Container is a good candidate for storm water monitoring.
Date:	3/27/98
Name:	Progress data for ALEX BAILLIE on Mar 27, 1998
Comment:	I assisted San Joaquin County Health inspectors at Ultimate Container. Showed inspector some of the drums that contained residual material. County sampled drums for hazardous waste determination of the waste residual. Some of the pesticide drums noted during earlier inspections were gone.
Date:	3/26/98
Name:	Progress data for ALEX BAILLIE on Mar 26, 1998
Comment:	Conducted follow-up inspection to Ultimate Container with Larry Williams, MUD, to collect samples from sump and storm drains. Residual pesticide found in some drums. MUD issued C&D order to Ultimate Container to stop receiving drums with residual material. More stain and spilled material found and photographed during the inspection. Ultimate Container has signifcant source of non-storm runoff.
Date:	3/24/98
Name:	Progress data for ALEX BAILLIE on Mar 24, 1998
Comment:	Inspected Ultimate Container, a plastic recycling facility for storm water compliance. The inspection found numerous spills and residual material in drums including pesticide containers and plating products. I issued a Notice to Clean to Ultimate Container.
Date:	3/24/98
Name:	Progress data for ALEX BAILLIE on Mar 24, 1998
Comment:	I attended the City class on CPR and first aid training.
Date:	3/20/98
Name:	Progress data for ALEX BAILLIE on Mar 20, 1998
Comment:	I assisted Code Enforcement with an inspection of Center Street Body Shop at 1705 South Center Street. Business informed that wastewater from sanded and paint stripped cars cannot be washed into the gutter. Several 55-gallon drums and two 5-gallon buckets of waste oil were found open without waste labeling or secondary containment. Oil staining noted on the ground around the containers. I notified San Joaquin County Health Hazardous Waste Section about the condition of the waste oil at this site.
Date:	3/18/98
Name:	Progress data for ALEX BAILLIE on Mar 18, 1998
Comment:	I assisted Code Enforcement with an inspection of the property at 2402 S. California for storm water compliance. Several drums of waste oil like substances were found along with pallets of batteries. I contacted San Joaquin Environmental Health regarding the waste problems on the site.
Date:	3/16/98
Name:	Progress data for ALEX BAILLIE on Mar 16, 1998
Comment:	I assisted in a joint inspection with Code Enforcemnt of Advance Recycling Technology. This facility recycles plastic material and some cardboard. The site is extremely messy and it has a variety of sources for nonstorm water discharges.

Date: 2/27/98
Name: Progress data for ALEX BAILLIE on Feb 27, 1998
Comment: I attended the City training class for testifying and presenting evidence in court. The class reviewed adminstrative hearings and court procedures.

Date: 2/23/98
Name: Progress data for ALEX BAILLIE on Feb 23, 1998
Comment: I attended the Department of Toxics class on the revision of California Hazardous Waste Codes.

Date: 12/16/97
Name: Progress data for ALEX BAILLIE on Dec 16, 1997
Comment: I inspected Vanco Truck Stop in response to a complaint of excessive mud being tracked into the street. I spoke to Vanco about the mud being tracked into Navy Drive at their rear entrance.

Date: 12/16/97
Name: Progress data for ALEX BAILLIE on Dec 16, 1997
Comment: I inspected Delta Blue Grass in response to a complaint of excessive mud being tracked into the roadway. I spoke to Delta Blue Grass regarding the mud being tracked into the street from their truck parking lot. I also observed a steam cleaning unit that was used for cleaning trucks. I informed Delta Blue Grass that they must have a wash rack equipped with a sand/oil unit and connected to the sewer to use the steam cleaner. Delta Blue Grass cannot continue to discharge wastewater from the steam cleaning operation to the storm drain.

Date: 12/16/97
Name: Progress data for ALEX BAILLIE on Dec 16, 1997
Comment: Inspected Alegre Trucking in response to a complaint of excessive mud being tracked into the roadway. I spoke to Alegre regarding the compliant and observed mud being tracked into the street from their rock operation.

Date: 11/18/97
Name: Progress data for ALEX BAILLIE on Nov 18, 1997
Comment: Conducted an inspection of Berberian Nut Factory for compliance with storm water regulations. Berberian Nut has an SIC of 2068 and has outdoor storage, loading and unloading, and manufacturing areas for nut fumigation with methyl bromide. Berberian Nut did not have a SWPPP on site at the time of this inspection and a review of the City data base shows that a NOI has not been filed.

Date: 11/14/97
Name: Progress data for ALEX BAILLIE on Nov 14, 1997
Comment: Attended training class on Flood Fighting put on by Department of Water Resources.

Date: 11/3/97
Name: Progress data for ALEX BAILLIE on Nov 3, 1997
Comment: Conducted an inspection of QB Rebuilders for storm water regulations. QB Rebuilders remanufactures brakes from old brake parts and has a SIC 3714. QB Rebuilders has several manufacturing areas outside as well as large parts storage areas. Inspectors noted staining from past spillage around both the parts washer and the brake oven. This facility is a good canidate for storm water monitoring and is likely to produce nonstorm runoff. QB Rebuilders was not able to produce either a copy of their SWPPP or NOI during the inspection visit.

Date: 10/24/97
Name: Progress data for ALEX BAILLIE on Oct 24, 1997
Comment: Inspected Advanced Recycling Technologies at 2402 S. California street for storm water regulations. Advanced Recycling Technologies recycles plastic materials such as bags, crates, and bottles. In addition, Advanced Recycling Technologies recycles paper and cardboard waste. The site is very messy and has a lot of loose trash and plastic . The facility is primarily engaged in scrap and waste recycling and has an SIC of 5093.

Date: 10/23/97
Name: Progress data for ALEX BAILLIE on Oct 23, 1997
Comment: An inspection of Stockton Unified School District Maintenance Yard (Distirct) was conducted to investigate a reported oil spill into the storm line at the lube shop. The District has plugged the storm line just east of the steam cleaning station and covered the drain inlets with plastic and sand bags. The contamination appears to have been contained on site. City sewer crew inspected the City storm water pump station and no contamination was observed.

Date:	10/21/97
Name:	Progress data for ALEX BAILLIE on Oct 21, 1997
Comment:	An inspection visit to Universal Services Recycling has determined that this facility is primarily engaged in sorting, assembling, and breaking up of scrap and waste materials for ferrous and non-ferrous metal recycling. Universal Services would have an SIC 5093 for Scrap and Waste Materials and as such is subject to storm water regulations.
Date:	9/18/97
Name:	Progress data for ALEX BAILLIE on Sep 18, 1997
Comment:	Conducted inspection visit at Diamond Truck Body Company. Diamond fabricates utility truck bodies from steel components. Diamond does not have a SWPPP and has not filed a NOI with the state. I gave information on filing the NOI to Mike Wutzke.
Date:	9/12/97
Name:	Progress data for ALEX BAILLIE on Sep 12, 1997
Comment:	Attended the Storm Water Quality Task Force Meeting in Sacramento. Presentations on Cal Trans monitoring projects and California Toxic Rule given at the meeting.
Date:	9/3/97
Name:	Progress data for ALEX BAILLIE on Sep 3, 1997
Comment:	An inspection was conducted at PDM to determine compliance with storm water regulations. PDM fabricates steel plates and beams for construction projects. PDM has a large outside storage area and conducts some welding operations outside. PDM has a filed a NOI and has implemented a SWPPP. PDM could improve housekeeping in some areas of the site.
Date:	8/21/97
Name:	Progress data for ALEX BAILLIE on Aug 21, 1997
Comment:	Compared and contrasted test results of oil samples from Cal Cedar with oil sample removed from the storm water sump at Orange/Sonora. Contacted OES for query request form to check database for reported spills and chemicals stored in the area.
Date:	8/13/97
Name:	Progress data for ALEX BAILLIE on Aug 13, 1997
Comment:	Inspection conducted at Cal Cedar and collected samples of oils used on site.
Date:	8/11/97
Name:	Progress data for ALEX BAILLIE on Aug 11, 1997
Comment:	Conducted an inspection of Valley Tomato Products with other City Department inspectors. Valley Tomato Products has installed a new tomato peeling and dicing operation at their facility. The inspection found that no building permits for the construction of the new process line had been taken out with the City. Some of the process line extends outside the building such as the water bath for the tomato bag cooling operation. Valley Tomato Products has also installed a new sump to handle the wastewater and runoff to their storm water system. Wastewater collected in the new sump is either recirculated as flume transport water for the tomatoes or is sent to the primary receiving sump for treatment.
Date:	7/23/97
Name:	Progress data for ALEX BAILLIE on Jul 23, 1997
Comment:	Conducted inspection of McCormick & Baxter for compliance with storm water regulations. McCormick & Baxter has complied with the Notice to Clean by hiring a street sweeper to clean the road during the construction operation.
Date:	7/23/97
Name:	Progress data for ALEX BAILLIE on Jul 23, 1997
Comment:	Conducted site inspection of Lipton for compliance with storm water regulations. Lipton has filed a NOI and has a SWPPP on site. Most process operations conducted during canning season from July to September.

Date: 7/22/97
Name: Progress data for ALEX BAILLIE on Jul 22, 1997
Comment: Conducted inspection of McCormick & Baxter in response to complaint of excessive dirt being tracked into the street. Inspection found excessive dirt and sediment was being tracked off the site and onto Washington Street. Notice To Clean issued to the site to remove dirt from Washington Street.

Date: 7/17/97
Name: Progress data for ALEX BAILLIE on Jul 17, 1997
Comment: Site inspections conducted in response to oil waste found in Orange/Sonora pump station on 7-16-97.

Site inspection conducted at Cal-Cedar. Storm water interceptor was found to have 2 feet of sludge in the first compartment. Samples collected from effluent side of inceptor. Discharge found occurring from inceptor.

Richard Stiffler conducted inspection of McCormick and Baxter.

Date: 7/9/97
Name: Progress data for ALEX BAILLIE on Jul 9, 1997
Comment: Meeting for Stockton Flea Market to review Locational Use Permit conditions. Storm Water problems with restaurants and food waste in the storm drains will be addressed by requiring wash rack for outside food vendors.

Date: 7/8/97
Name: Progress data for ALEX BAILLIE on Jul 8, 1997
Comment: I provided the violation time chronology for Stockton Flea Market to the Planning Department. The Flea Market's use permit will be reviewed at the end of the month by the Planning Commission. I informed Richard with the planning of the storm water problems relating to this site.

Date: 7/3/97
Name: Progress data for ALEX BAILLIE on Jul 3, 1997
Comment: Attended Storm Water Industrial Advisory Committee meeting for the development of criteria for Level 1 industry classification.

Date: 7/2/97
Name: Progress data for ALEX BAILLIE on Jul 2, 1997
Comment: Drafted memo for SWPPP requirements to be attached to Ultimate Container use permit for outside storage. Ultimate Container is a plastic drum recycling facility.

Date: 7/1/97
Name: Progress data for ALEX BAILLIE on Jul 1, 1997
Comment: Conducted storm water compliance inspection at Seirra Chemical Company which manufactures bleach and repacks acid and chlorine. Seirra Chemical is a SARA facility.

Title: BMP C1.4 INDUSTRIAL FACILITIES ENFORCEMENT PROGRAM
Short description: INDUSTRIAL ENFORCE.
Long description: Development and implementation of industrial enforcement program that will insure compliance with the Conditions of Approval

MEASURE OF SUCCESS: (VI)
The Adoption of the Administrative Guidelines for the conditions of approval by the City council.
Type: Result
Start date: 12/1/97 Due Date: 7/1/98
Who: ALEX BAILLIE

Progress data history

Date: 6/9/98
Name: Progress data for ALEX BAILLIE on Jun 9, 1998
Comment: The City Council adopted the Stormwater Industrial Monitoring Program Guidelines today. See Appendex C1.4

Date: 3/2/98
Name: Progress data for ALEX BAILLIE on Mar 2, 1998
Comment: Completed draft enforcement response guidelines

Title: BMP C1.5 INDUSTRIAL OUTREACH PROGRAM
Short description: INDUSTRIAL OUTREACH
Long description: The City will develop a program to educate the local industries about stormwater pollution prevention and proper use of BMPs.

MEASURE OF SUCCESS: (VI)
Annual report of the extent of this effort.
Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: OUT REACH;ALEX BAILLIE

Progress data history

Date: 6/9/98
Name: Progress data for ALEX BAILLIE on Jun 9, 1998
Comment: The City Council adopted the Stormwater Industrial Monitoring Program Guidelines today. See Appendex C1.4

Date: 4/9/98
Name: Progress data for ALEX BAILLIE on Apr 9, 1998
Comment: Picked up the donations from Del Monte for the LEAP project.

Date: 10/21/97
Name: Progress data for ALEX BAILLIE on Oct 21, 1997
Comment: Storm Water Alert-4 newsletter sent to all level 1 and level 2 industries as part of informational mailing.

Date: 10/16/97
Name: Progress data for ALEX BAILLIE on Oct 16, 1997
Comment: Finished articles for Storm Water Alert newsletter of the sample requirements for the industrial facilities covered under the state's general permit. Notification of sampling requirements and changes to the general permit were discussed in the newsletter.

Date: 7/31/97
Name: Progress data for ALEX BAILLIE on Jul 31, 1997
Comment: City newsletter called "Storm Water Alert" was mailed to all the level 1 and 2 PIF industries within the City. The newsletter addressed regulations that could effect storm water related issues. Reminder to industries that new State storm water permits due by August 1, 1997 also was included with the newsletter.

Title: BMP C2.1 INDUSTRIAL MONITORING PROGRAM
Short description: MONITORING
Long description: 1. The City will develop an investigative compliance monitoring program for level one PIFs

2. City will also develop an Exemption Certification Program

MEASURE OF SUCCESS: (VI)
Adoption of Administrative Guidelines for the Conditions of Approval by the City council
Type: Result
Start date: 12/1/97 Due Date: 7/1/98
Who: ALEX BAILLIE

Progress data history

Date: 6/9/98
Name: Progress data for ALEX BAILLIE on Jun 9, 1998
Comment: The City Council adopted the Stormwater Industrial Monitoring Program Guidelines today. See Appendex C1.4

Title: CONSTRUCTION ACTIVITES
Short description: CONSTRUCTION
Long description: A program to implement and maintain structural and non-structural best management practices at construction sites. 4 BMPs were developed to implement this program.

BMP -- 3 modified programs
BMP -- 1 new program

Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: GLEN BIRDZELL;ALEX BAILLIE; DON KING;MIKE GUTTERRES

Progress data history

Date: 12/19/97
Name: Progress data for CONSTRUCTION ACTIVITES on Dec 19, 1997
Comment: Mike has given this material to Paul for input on Access.

Date: 12/19/97
Name: Progress data for CONSTRUCTION ACTIVITES on Dec 19, 1997
Comment: Need to check with Michael - no information forthcoming at this time

Date: 7/28/97
Name: Progress data for MIKE GUTTERRES on Jul 28, 1997

Date: 7/9/97
Name: Progress data for MIKE GUTTERRES on Jul 9, 1997
Comment: 12th meeting of the Stormwater Program Implementation Committee - S/W, PW, and CD present. Discussed the personal liability of the authorized enforcement officers. City Attorney relayed that there was no more than that normally associated with a City inspector. For City CIP projects, the determination was made to have the contractor prepare the NOI and SWPPP for approval via the specifications.

Next meeting will be scheduled for 2 1/2 to 3 weeks since no pressing issues are in the forefront.

Title: BMP D1.1 REVIEW OF CONSTRUCTION ACTIVITIES
Short description: SITE PLANNING
Long description: The review of building site plans to insure that source and treatment control BMPs are incorporated into a proposed construction project.

MEASURE OF SUCCESS: (VI)
The number of Storm Water Pollution Prevention Plans (SWPPPs) approved and/or amended annually.
Type: Result
Start date: 7/1/96 Due Date: 7/1/97
Who: MIKE GUTTERRES;DON KING

Progress data history

Date: 7/28/98
Name: Progress data for MIKE GUTTERRES;DON KING on Jul 28, 1998
Comment: A totasl of 89 SWPPPs were approved and are listed in Appendex D1.1

Date: 6/26/98
Name: Progress data for MIKE GUTTERRES on Jun 26, 1998
Comment: As of this date, the Stormwater Division has attended: one monthly utility coordination meeting at P/W; 5 meetings of the Stormwater Program Implementation Committee to develop policies and procedures to smoothly implement the stormwater program; several Pre-Construction meetings to present Stormwater and SWPPP requirements to builders; 36 meetings with developers and contractors to present Stormwater and SWPPP requirements.

Date:	6/8/98
Name:	Progress data for MIKE GUTTERRES on Jun 8, 1998
Comment:	Met with Paul Chapman, Chapman Development, and reviewed and accepted his SWPPP for the Spanos Park project.
Date:	6/4/98
Name:	Progress data for MIKE GUTTERRES on Jun 4, 1998
Comment:	Met with Ken Brown, KENCOR Development, and reviewed and accepted KENCOR's SWPPP for their Brookside project.
Date:	6/3/98
Name:	Progress data for MIKE GUTTERRES on Jun 3, 1998
Comment:	Pre-Construction Meeting for L.E. Wentz Co. at 6810 McKinley. Presented SWPPP requirements and Model SWPPP to representatives.
Date:	5/28/98
Name:	Progress data for MIKE GUTTERRES on May 28, 1998
Comment:	Spoke with Michael Brown, Phoenix Pacific Company developing property at Hammer and Don, and mailed him a model SWPPP.
Date:	5/14/98
Name:	Progress data for MIKE GUTTERRES on May 14, 1998
Comment:	Met with Paul Chapman, Chapman Development, and discussed the Stormwater and SWPPP requirements.
Date:	5/11/98
Name:	Progress data for MIKE GUTTERRES on May 11, 1998
Comment:	Met with Adam Scott Kessler, Kessler Development, and discussed stormwater and SWPPP requirements.
Date:	5/8/98
Name:	Progress data for MIKE GUTTERRES on May 8, 1998
Comment:	16th meeting of the Stormwater Program Implementation Committee. Discussed Grading and Erosion Control Permits and their applicability to various projects.
Date:	5/1/98
Name:	Progress data for MIKE GUTTERRES on May 1, 1998
Comment:	Met with Coy Elvis, Coy Elvis Development, and discussed SWPPP amendment requirements.
Date:	4/16/98
Name:	Progress data for MIKE GUTTERRES on Apr 16, 1998
Comment:	Met with Will, DSS Engineering Contractors, and discussed stormwater and SWPPP requirements.
Date:	4/13/98
Name:	Progress data for MIKE GUTTERRES on Apr 13, 1998
Comment:	Met with Ken Brown, Kencore Development, and discussed stormwater and SWPPP requirements.
Date:	3/20/98
Name:	Progress data for MIKE GUTTERRES on Mar 20, 1998
Comment:	Pre-Construction Meeting for Feralloy. Presented SWPPP requirements and Model SWPPP to representatives.
Date:	3/19/98
Name:	Progress data for MIKE GUTTERRES on Mar 19, 1998
Comment:	Attended a monthly utility coordination meeting at P/W. Spoke to different utility representatives regarding stormwater issues and requirements.
Date:	1/20/98
Name:	Progress data for MIKE GUTTERRES on Jan 20, 1998
Comment:	Pre-Construction Meeting for U.S. Sprint Communications. Presented SWPPP requirements and Model SWPPP to representatives.

Date:	1/8/98
Name:	Progress data for MIKE GUTTERRES on Jan 8, 1998
Comment:	Pre-Construction Meeting for Grant Village Townhomes. Presented SWPPP requirements and Model SWPPP to representatives.
Date:	1/8/98
Name:	Progress data for MIKE GUTTERRES on Jan 8, 1998
Comment:	15th meeting of the Stormwater Program Implementation Committee. Discussed P/W West Lane rehabilitation project (96-25) and how stormwater compliance would be implemented.
Date:	12/2/97
Name:	Progress data for MIKE GUTTERRES on Dec 2, 1997
Comment:	Met with Coy Elvis, Coy Elvis Development, and discussed stormwater and SWPPP requirements.
Date:	12/1/97
Name:	Progress data for MIKE GUTTERRES on Dec 1, 1997
Comment:	14th meeting of the Stormwater Program Implementation Committee. Discussed utility company easements and construction projects.
Date:	11/25/97
Name:	Progress data for MIKE GUTTERRES on Nov 25, 1997
Comment:	Met with Chris Miller, Miller - Klein Development, and discussed stormwater and SWPPP requirements.
Date:	11/18/97
Name:	Progress data for MIKE GUTTERRES on Nov 18, 1997
Comment:	Met with Jim Nylen, Nylen Homes, and discussed stormwater and SWPPP requirements.
Date:	10/15/97
Name:	Progress data for MIKE GUTTERRES on Oct 15, 1997
Comment:	Met with Steve Muser, DSS Engineering Contractors, and discussed stormwater and SWPPP requirements.
Date:	10/8/97
Name:	Progress data for MIKE GUTTERRES on Oct 8, 1997
Comment:	Met with Jeff Sanguinetti and reviewed various SWPPPs for the Spanos Park Subdivision.
Date:	9/29/97
Name:	Progress data for MIKE GUTTERRES;DON KING on Sep 29, 1997
Comment:	The City is considering adoption of a Landscape Ordinance. Comments have been sent for inclusion in the ordinance of the use of Best Available Technology for landscape appurtenances that are intended to reduce stormwater pollution.
Date:	9/16/97
Name:	Progress data for MIKE GUTTERRES on Sep 16, 1997
Comment:	Met with Jerry Schmidt, Victorian Development, and discussed stormwater and SWPPP requirements.
Date:	9/16/97
Name:	Progress data for MIKE GUTTERRES on Sep 16, 1997
Comment:	Met with Jeff Sanguinetti and reviewed various SWPPPs for the Spanos Park Subdivision.
Date:	9/5/97
Name:	Progress data for MIKE GUTTERRES on Sep 5, 1997
Comment:	Met with Greenbriar and discussed stormwater and SWPPP requirements.
Date:	9/3/97
Name:	Progress data for MIKE GUTTERRES on Sep 3, 1997
Comment:	Met with Doug Caresco, President of Caresco Development, and discussed stormwater and SWPPP requirements.
Date:	9/3/97
Name:	Progress data for MIKE GUTTERRES on Sep 3, 1997
Comment:	Met with Jeff Sanguinetti and reviewed several SWPPPs for Spanos Park.

Date:	8/29/97
Name:	Progress data for MIKE GUTTERRES on Aug 29, 1997
Comment:	Met with Kimball Hill Homes and reviewed their SWPPP.
Date:	8/21/97
Name:	Progress data for MIKE GUTTERRES on Aug 21, 1997
Comment:	Met with Jeff Sanguinetti and reviewed the first draft of several SWPPPs for Spanos Park Development.
Date:	8/20/97
Name:	Progress data for MIKE GUTTERRES on Aug 20, 1997
Comment:	Met with Jeff Sanguinetti, engineer for Spanos Park Development Company, and discussed the stormwater and SWPPP requirements.
Date:	8/20/97
Name:	Progress data for MIKE GUTTERRES on Aug 20, 1997
Comment:	Met with Todd Aarvig to review his SWPPP and issued him a SWPPP number.
Date:	8/15/97
Name:	Progress data for MIKE GUTTERRES on Aug 15, 1997
Comment:	Met with Kaufman and Broad to review a SWPPP and then issued a SWPPP number.
Date:	8/13/97
Name:	Progress data for MIKE GUTTERRES on Aug 13, 1997
Comment:	Met with Wayne LeBaron, President of LeBaron Development, to discuss stormwater and SWPPP requirements.
Date:	8/12/97
Name:	Progress data for MIKE GUTTERRES on Aug 12, 1997
Comment:	Met with California Homes to discuss SWPPP requirements.
Date:	8/8/97
Name:	Progress data for MIKE GUTTERRES on Aug 8, 1997
Comment:	Met with Ron Rugani to approve SWPPP for Grupe and to issue SWPPP number.
Date:	8/7/97
Name:	Progress data for MIKE GUTTERRES on Aug 7, 1997
Comment:	Met with Ron Rugani, V.P. Grupe, and Paul Brooks to review draft SWPPP.
Date:	8/1/97
Name:	Progress data for MIKE GUTTERRES on Aug 1, 1997
Comment:	Met with Kaufman and Broad to discuss SWPPP requirements.
Date:	7/31/97
Name:	Progress data for MIKE GUTTERRES on Jul 31, 1997
Comment:	Met with Kimball Hill Homes to discuss SWPPP requirements.
Date:	7/31/97
Name:	Progress data for MIKE GUTTERRES on Jul 31, 1997
Comment:	Met with Greg Jackson, of Pacific Design Development Construction, and discussed SWPPP requirements.
Date:	7/31/97
Name:	Progress data for MIKE GUTTERRES on Jul 31, 1997
Comment:	Pre-Construction Meeting for Lever Brothers. Presented SWPPP requirements and Model SWPPP to representatives.
Date:	7/30/97
Name:	Progress data for MIKE GUTTERRES on Jul 30, 1997
Comment:	Met with Russ Harrison, P.E. for Florsheim Brothers, and reviewed the SWPPP requirments.

Date: 7/28/97
Name: Progress data for MIKE GUTTERRES on Jul 28, 1997
Comment: 13th meeting of the Stormwater Program Implementation Committee. - S/W, P/W, and CD present. Presented 2nd S/W alert memo which discussed Regional Air Board's dust req's, the construction program's implementation, and the development of the industrial program.

Date: 7/18/97
Name: Progress data for MIKE GUTTERRES on Jul 18, 1997
Comment: Met with Lenord Powell, COS Building Inspector and AEO, and California Homes representative to discuss SWPPP requirements.

Date: 7/17/97
Name: Progress data for MIKE GUTTERRES on Jul 17, 1997
Comment: Met with Nancy, of Florsheim Brothers, and told her of the stormwater and SWPPP requirements. Issued a Conditional Issuance Memo for the Florsheim project in Brookside.

Date: 7/16/97
Name: Progress data for MIKE GUTTERRES on Jul 16, 1997
Comment: Met with Paul Brooks, superintendent for Grupe Construction, and finalized the agreed upon changes to the Brookside "Master SWPPP" to create the "Builder's Version" of the Brookside Master SWPPP.

Date: 7/15/97
Name: Progress data for MIKE GUTTERRES on Jul 15, 1997
Comment: Met with Todd Aarvig, custom home builder, to discuss S/W requirements, including SWPPP requirements.

Date: 7/9/97
Name: Progress data for MIKE GUTTERRES on Jul 9, 1997
Comment: 12th meeting of the Stormwater Program Implementation Committee.

Date: 7/9/97
Name: Progress data for MIKE GUTTERRES on Jul 9, 1997
Comment: Met with California Homes to review their first draft SWPPP

Date: 7/8/97
Name: Progress data for MIKE GUTTERRES on Jul 8, 1997
Comment: Pre-Construction Meeting for Noll Manufacturing. Presented SWPPP requirements and Model SWPPP to representatives.

Title: BMP D3.1 INSPECTION AND ENFORCEMENT
Short description: INSPECTION/ENFORCE.
Long description: The City is required to develop and implement a construction site inspection and enforcement policy.

MEASURE OF SUCCESS: (VI)
Development of a handbook for construction site inspections.
Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: MIKE GUTTERRES;ALEX BAILLIE;DON KING

Progress data history

Date: 6/22/98
Name: Progress data for MIKE GUTTERRES on Jun 22, 1998
Comment: As of this date, over 1100 construction site inspections have been conducted since July 1, 1997.

Date: 5/20/98
Name: Progress data for MIKE GUTTERRES on May 20, 1998
Comment: Met Steve Saccone, Saccone Construction, on site in Brookside and discussed SWPPP requirements. Later met with Lenord Powell, COS AEO, and confirmed same.

Date: 4/20/98
Name: Progress data for MIKE GUTTERRES on Apr 20, 1998
Comment: Conducted refresher training class for Authorized Enforcement Officers (Public Works and Building inspectors).

Date: 3/6/98
Name: Progress data for MIKE GUTTERRES on Mar 6, 1998
Comment: Met Mike Leal, Superintendent of Kimball Hill Homes' project in the Weston Ranch Area (Sierra Meadows), on site and discussed how compliance with the approved SWPPP will improve immediately. Also discussed amending the SWPPP to include newly purchased lots.

Date: 1/13/98
Name: Progress data for MIKE GUTTERRES on Jan 13, 1998
Comment: Met Harvey Kemple, Superintendent of Bright Development's project in the 8th Street Area (Steamboat Junction), and his boss on site, and discussed how compliance with the approved SWPPP will improve immediately.

Date: 9/11/97
Name: Progress data for ALEX BAILLIE on Sep 11, 1997
Comment: Conducted construction site inspections at Weston Ranch, Bright Development's Coral Ridge project SWPPP # 97-WR001-0, Florsheim's Belleterra project SWPPP #97-WR002-0, and Kimball Hill Homes' project Sierra Meadows SWPPP # 97-WR005-0.

All areas were found to be relatively clean and the streets and gutters were free of sediment.

Date: 8/29/97
Name: Progress data for ALEX BAILLIE on Aug 29, 1997
Comment: Inspected construction site at Spanos Park for compliance with storm water regulations. Construction of model homes and street improvements progressing. Streets and sidewalks were clean and free of sediment. No dirt was found in the public street. A water truck was being used for dust control in the grading areas.

Date: 8/19/97
Name: Progress data for MIKE GUTTERRES on Aug 19, 1997
Comment: Began regular inspection of construction sites for SWPPP implementation and compliance. Started by going through Weston Ranch and Spanos Park.

Date: 8/5/97
Name: Progress data for ALEX BAILLIE on Aug 5, 1997
Comment: A compliance inspection was conducted at Kimball Hill Homes in Sperry Ranch for determination of compliance with storm water regulations. The inspection found that Kimball Homes did not have a Storm Water Pollution Prevention Plan on site for the construction activities. Kimball Homes' Sperry Ranch project is greater than 5 acres in size and is part of a larger community development called Sperry Ranch.

I gave Kimball Hill Homes a Letter of Transmittal that notified them of the requirement for construction sites of this size to have a Storm Water Pollution Prevention Plan. Kimball Hill Homes was given until September 4, 1997 to develop a Storm Water Pollution Prevention Plan for the Sperry Ranch project.

Date: 8/4/97
Name: Progress data for ALEX BAILLIE on Aug 4, 1997
Comment: Conducted site inspection of Bright Development construction site in Weston Ranch for compliance with SWPPP permit conditions (permit# 97-WR001-0). No constuction work being performed yet on site. Streets and roadways were found free of dust and sediment.

Date: 8/1/97
Name: Progress data for ALEX BAILLIE on Aug 1, 1997
Comment: An inspection of the Teichert Construction site at March Lane/Feather River was conducted for compliance with stormwater regulations. Groundwater pumping from construction was reviewed and found to be clear and free of sediment.

Date: 7/31/97
Name: Progress data for ALEX BAILLIE on Jul 31, 1997
Comment: Conducted inspection of Little John Creek Subdivision for compliance with SWPPP permit conditions (permit# 97-LJ001-0). Construction of street and sewer improvements progressing. No dust was observed at the site from the construction work. Site entrances at 2800 Wausa and 2800 Toginnal were inspected and found to be free of sediment.

Date: 7/29/97
Name: Progress data for ALEX BAILLIE on Jul 29, 1997
Comment: Inspected storm drains for inlet protection devices in Weston Ranch. Some inlet protection installed at locations along Gordon Verner Circle. Inlet device used was a filter bag constructed of plastic material with a pore size of approximately 1/16 inch.

Date: 7/28/97
Name: Progress data for ALEX BAILLIE on Jul 28, 1997
Comment: Meet with Grupe Development to discuss SWPPP and construction site at March Lane and Deer Park. Was informed that the RIM corporation is handling development of Marriott/Brookside.

Date: 7/24/97
Name: Progress data for ALEX BAILLIE on Jul 24, 1997
Comment: Conducted inspection of Brookside/Marriott for compliance with the Notice to Clean issued to the site on 7-23-97. Street appears to have been swept but entrance dirve way into site is messy. The BMP for reducing the tracking of sediment on the public street is not being implemented.

Date: 7/23/97
Name: Progress data for MIKE GUTTERRES on Jul 23, 1997
Comment: Conducted inspection of Brookside/Marriott construction site for compliance with storm water regulations. Site inspection found excessive dirt and soil being tracked into the street at Deer Park and March Lane. Storm Water Program issued Notice To Clean for soil tracked into the roadway.

Date: 7/15/97
Name: Progress data for ALEX BAILLIE on Jul 15, 1997
Comment: Construction database upgraded to include date sorting of construction permits for storm water inspection after final approval of site proposed SWPPP. Database will be used to select construction sites for storm water compliance inspections.

Date: 7/8/97
Name: Progress data for ALEX BAILLIE on Jul 8, 1997
Comment: I called Buzz Oates Construction as follow-up for SWPPP needed for Gold River construction site. I spoke with Greg Schubert who informed me that the NOI had been mailed along with a copy of the SWPPP.

Title: BMP D4.1 EDUCATION AND TRAINING PROGRAM
Short description: OUTREACH
Long description: The City is required to train the construction site operators and city staff.

MEASURE OF SUCCESS: (VI)
Annual report of the training efforts
Type: Result
Start date: 7/1/96 Due Date: 7/1/98
Who: OUT REACH

Progress data history

Date: 6/24/98
Name: Progress data for MIKE GUTTERRES on Jun 24, 1998
Comment: Attended a meeting with Public Works, AT&T, Sprint, Cal. Water, and PG &E. Discussed utility companies complying with MEP standards of the City as well as compliance with the General Permit for 5 Ac jobs.

Decided to try and write a general "Utility SWPPP" common to all of the utilities which do work in the City. First comments are due back to Glen D. Birdzell, Deputy Director, Stormwater Division, by July 29, 1998.

Date:	5/12/98
Name:	Progress data for ALEX BAILLIE on May 12, 1998
Comment:	I watched a video tape on concrete truck cleaning that had been developed by Teichert.
Date:	4/20/98
Name:	Progress data for MIKE GUTTERRES on Apr 20, 1998
Comment:	Refresher class for COS AEOs was conducted at the Council Chambers. The City Manager stressed the need for permit holders to properly implement their SWPPPs.
Date:	4/20/98
Name:	Progress data for MIKE GUTTERRES on Apr 20, 1998
Comment:	Conducted a refresher training class for Authorized Enforcement Officers (Public Works and Building inspectors).
Date:	3/11/98
Name:	Progress data for MIKE GUTTERRES on Mar 11, 1998
Comment:	Sparkle Service demonstrated their mobile car washing system.
Date:	1/27/98
Name:	Progress data for MIKE GUTTERRES on Jan 27, 1998
Comment:	Met with MUD, P/W, and Kjeldsen Sinnock & Neudeck (KSN) (design consultant) and presented the Stormwater Division's requirements for the Taft Area Detention Basin, specifically storm water treatment capabilities.
Date:	9/5/97
Name:	Progress data for MIKE GUTTERRES on Sep 5, 1997
Comment:	Met with Amy McCord of McLaren Hart, consultant to the Port of Stockton, to discuss the Stormwater Quality Control Criteria Plan, SWPPPs, and training issues regarding staff and the development community.
Date:	9/2/97
Name:	Progress data for OUT REACH on Sep 2, 1997
Comment:	Completed Storm Water Alert 3 newsletter and distributed to Building Industry Association of the Delta members and the job site superintendants. Theme of the newsletter was preparing job sites for the rainy season.
Date:	7/28/97
Name:	Progress data for MIKE GUTTERRES on Jul 28, 1997
Comment:	Attended a meeting at Grupe Headquarters to discuss SWPPP issues.
Date:	7/28/97
Name:	Progress data for OUT REACH on Jul 28, 1997
Comment:	Distributed the second Stormwater Alert newsletter to the building community and industry. Highlighted the Air Board Rule # 8020, Fugitive dust requirements for Control of Fine Particulate Matter (PM10) From Construction, Demolition, and Excavation Activities. Also reminded the industrial community that August I, 1997 was the deadline for revising SWPPPs and Monitoring Programs.
Date:	7/22/97
Name:	Progress data for MIKE GUTTERRES on Jul 22, 1997
Comment:	Attended Economic Review Committee Meeting for Don Norten Truck Terminal. Made owners aware of stormwater requirements.
Date:	7/21/97
Name:	Progress data for MIKE GUTTERRES on Jul 21, 1997
Comment:	REM Corporation presented a demonstration of their catch basin insert for pollution prevention.
Date:	7/7/97
Name:	Progress data for MIKE GUTTERRES on Jul 7, 1997
Comment:	Presentation to the custom home builders in Brookside Estates at Grupe's Building to explain the new stormwater and SWPPP requirements. Carey Development, Caresco Development, California Homes, and Grupe were present.

Title: MONITORING PROGRAM
Short description: MONITORING
Long description: Monitoring the quality of the ambient waters and storm water discharges.
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: GLEN BIRDZELL;ALEX BAILLIE; MIKE GUTTERRES

Progress data history
- None -

Title: M1 – DISCHARGE MONITORING
Short description: DISCHARGE
Long description: Conduct the discharge monitoring program approved by the State of California.

MEASURE OF SUCCESS; (WQ;PI;VI)
Annual report summarizing the monitoring effort
Type: Result
Start date: 7/1/95 Due Date: 7/1/98
Who: MIKE GUTTERRES

Progress data history

Date: 8/17/98
Name: Progress data for MIKE GUTTERRES on Aug 17, 1998
Comment: Annual report on discharge monitoring is located in Appendix M1

Date: 2/20/98
Name: Progress data for ALEX BAILLIE on Feb 20, 1998
Comment: Collected storm water samples from monitoring stations. This storm was the last monitoring event for the season. Some problems sampling at Thorton station resulted in low percent capture. Broken sample jug for Kelly station will also reduce percent capture at this station.

Date: 2/10/98
Name: Progress data for ALEX BAILLIE on Feb 10, 1998
Comment: I setup the sampling station for a possible storm monitoring event.

Date: 1/28/98
Name: Progress data for MIKE GUTTERRES on Jan 28, 1998
Comment: Reviewed sample data from first rain event 11-10-97. In general, concentrations are much higher than last year's sample data.

Date: 1/6/98
Name: Progress data for ALEX BAILLIE on Jan 6, 1998
Comment: Turn on storm water sampling stations for possible storm event believed to be coming this week.

Date: 12/16/97
Name: Progress data for ALEX BAILLIE on Dec 16, 1997
Comment: Setup all five sampling stations and engaged ISCO samplers for possible rain event tommorrow. Data still needs to be dumped from the last event.

Date: 11/10/97
Name: Progress data for MIKE GUTTERRES on Nov 10, 1997
Comment: The first storm with a rainfall greater than 0.03" (first flush) occurred and was sampled.

Date: 10/10/97
Name: Progress data for MIKE GUTTERRES on Oct 10, 1997
Comment: The first storm event was 10/8 and 10/9 and lasted for 12 hours. The total precep. at National Weather Station SFS (Stockton Fire Station) was .28 inches. This storm was not monitored.

Date:	10/9/97
Name:	Progress data for ALEX BAILLIE on Oct 9, 1997
Comment:	Setup sampling stations to capture possible rain event. The sampling event was cancelled later in the afternoon when the storm event broke up.
Date:	9/24/97
Name:	Progress data for MIKE GUTTERRES on Sep 24, 1997
Comment:	Held 2nd refresher training class for field crews doing storm water monitoring project.
Date:	9/23/97
Name:	Progress data for MIKE GUTTERRES on Sep 23, 1997
Comment:	Held refresher training class for field crews doing storm water monitoring project.
Date:	9/22/97
Name:	Progress data for MIKE GUTTERRES on Sep 22, 1997
Comment:	Pre-Storm season meeting with Terry Hinkle, MUD Lab, Larry Huber, MUD Lab, Larry Williams, MUD Environmental Control, and Stormwater Division. Discussed manpower requirements as well as laboratory requirements.
Date:	9/8/97
Name:	Progress data for ALEX BAILLIE on Sep 8, 1997
Comment:	Calibrated Duck Creek monitoring station sample pump to take 500 mls per aliquot.
Date:	9/5/97
Name:	Progress data for ALEX BAILLIE on Sep 5, 1997
Comment:	Pacific Bell is working on installing a phone line into the Duck Creek monitoring station. The line should be completed today according to the Pacific Bell construction crew. The phone modem will be connected after the line installation is completed.
Date:	8/26/97
Name:	Progress data for ALEX BAILLIE on Aug 26, 1997
Comment:	The monitoring stations sampler tubing has been replaced with new tubing and clean probes installed. An equipment blank was collected on one station for QA/QC.
Date:	8/26/97
Name:	Progress data for ALEX BAILLIE on Aug 26, 1997
Comment:	The monitoring station at Western Pacific Industrial Park retention basin has been relocated to the street corner of Zephyr/Producers. The monitoring station is now on power from PG&E and is no longer on batteries. The flow meter has been installed similarly to its original location setup. The station is ready to sample the first storm event of the season.
Date:	8/14/97
Name:	Progress data for MIKE GUTTERRES on Aug 14, 1997
Comment:	Attended a meeting with Morris Allen, Director of Municipal Utilities, Edward Formosa, Deputy, Glen Birdzell, Deputy, Larry Huber, Lab Supervisor, Bob Castelli, Tech Services Supervisor, and Mike Gutterres, Associate Civil Engineer. The meeting was to discuss the Stormwater Monitoring Program and its effects on various staff, lab time, and materials.
Date:	8/14/97
Name:	Progress data for MIKE GUTTERRES on Aug 14, 1997
Comment:	Inspected the changes made to the sampler location and set up at the Duck Creek sample site. Concrete pad was placed for the sampler, power was supplied by PG&E, and a phone line was wired into the site.

Title:	M2 -- AMBIENT MONITORING		
Short description:	AMBIENT		
Long description:	River and Stream Monitoring Program as described in the Stormwater Ambient Monitoring Program.		
Type:	Result		
Start date:	7/1/96	Due Date:	7/1/98
Who:	MIKE GUTTERRES;ALEX BAILLIE		

Top level goals - Details with Progress data

Progress data history

Date:	1/28/98
Name:	Progress data for ALEX BAILLIE on Jan 28, 1998
Comment:	Reviewed sample data from first rain event 11-10-97. In general, concentrations are much higher than last year's sample data.
Date:	12/3/97
Name:	Progress data for ALEX BAILLIE on Dec 3, 1997
Comment:	Reviewed ambient water data and sent copy to KLI.
Date:	11/11/97
Name:	Progress data for ALEX BAILLIE on Nov 11, 1997
Comment:	Delivered storm water composite samples to Anlab for testing. Low sample volume on Duck Creek station (around 4L) will have to drop some test parameters.
Date:	11/10/97
Name:	Progress data for ALEX BAILLIE on Nov 10, 1997
Comment:	Storm Water sampling conducted at five monitoring stations for first flush. Problems at Duck Creek station with flow meter showing negative flows resulted in low volume collected in the composite sampler. Based on time duration of the storm event, Duck Creek station composite sampler missed over 50% of the storm event due to problems with the flow meter. The percent capture may even be less because the greatest flow in the system occurred early in the event.
Date:	9/23/97
Name:	Progress data for ALEX BAILLIE on Sep 23, 1997
Comment:	Meet with laboratory personnel to discuss upcoming sample requirements for monitoring the next storm.
Date:	9/23/97
Name:	Progress data for ALEX BAILLIE on Sep 23, 1997
Comment:	Held refresher training class for field crews doing storm water monitoring project.
Date:	9/22/97
Name:	Progress data for MIKE GUTTERRES on Sep 22, 1997
Comment:	Pre-Storm season meeting with Terry Hinkle, MUD Lab, Larry Huber, MUD Lab, Larry Williams, MUD Environmental Control, and Stormwater Division. Discussed manpower requirements as well as laboratory requirements.
Date:	9/9/97
Name:	Progress data for ALEX BAILLIE on Sep 9, 1997
Comment:	Samples collected for ambient background at the ambient stations of Bear Creek, Calveras River, and Stockton Diverting Canal. No samples were collected at Bear Creek due to the no flow condition at the time of sampling.
Date:	8/14/97
Name:	Progress data for MIKE GUTTERRES on Aug 14, 1997
Comment:	Attended a meeting with Morris Allen, Director of Municipal Utilities, Edward Formosa, Deputy, Glen Birdzell, Deputy, Larry Huber, Lab Supervisor, Bob Castelli, Tech Services Supervisor, and Mike Gutterres, Associate Civil Engineer. The meeting was to discuss the Stormwater Monitoring Program and its effects on various staff, lab time, and materials.

Title:	M3 -- WATERSHED PROGRAM		
Short description:	WATERSHED		
Long description:	Develop a watershed management organization to promote pollution prevention as a means of ecosystem restoration -- improve water quality at or near Stockton.		
Type:	Result		
Start date:	3/15/97	Due Date:	7/1/98
Who:	GLEN BIRDZELL;ALEX BAILLIE;MIKE GUTTERRES		

Progress data history

Date:	9/29/97
Name:	Progress data for GLEN BIRDZELL;ALEX BAILLIE;MIKE GUTTERRES on Sep 29, 1997
Comment:	A mission statement has been adopted. A draft Resolution of Support has been readied for use. A Preliminary Points of Consensus document has been drafted for consideration at the next meeting.
Date:	9/12/97
Name:	Progress data for MIKE GUTTERRES on Sep 12, 1997
Comment:	Held the third meeting of the East Delta Watershed Program. Reached agreement on the mission/goal statement and on the MOU.
Date:	8/21/97
Name:	Progress data for GLEN BIRDZELL;ALEX BAILLIE;MIKE GUTTERRES on Aug 21, 1997
Comment:	Contacted Leroy Ornelas, Chair of the County Farm Advisory Board, and arranged to make a presentation at that board's October meeting. The purpose of making the presentation is to enlist the aid of the board to recommend to the Board of Supervisors this Water Shed Program. Also invited Leroy to the September 12 Watershed meeting.
Date:	8/18/97
Name:	Progress data for GLEN BIRDZELL;ALEX BAILLIE;MIKE GUTTERRES on Aug 18, 1997
Comment:	At the direction of the East Delta Water Shed at large committee, assisted in the drafting of a Memorandum of Understanding, and up-dated the Mission Statement. Drafts of both documents were sent out to interested individuals for review.
Date:	8/8/97
Name:	Progress data for MIKE GUTTERRES on Aug 8, 1997
Comment:	Held the second meeting of the East Delta Watershed Program. Presented a draft mission statement and agreed that an MOU would be beneficial.
Date:	7/28/97
Name:	Progress data for GLEN BIRDZELL;ALEX BAILLIE;MIKE GUTTERRES on Jul 28, 1997
Comment:	Walt Sadler delivered the EDWMP Inquiry Submittal to CALFED for Category III Funding.
Date:	7/25/97
Name:	Progress data for GLEN BIRDZELL;ALEX BAILLIE;MIKE GUTTERRES on Jul 25, 1997
Comment:	Had a meeting with Bill Jennings to remind him that the formation of the EDWMP was at a delcate juncture and that how he presented his points was very important to the continuation of the program.
Date:	7/24/97
Name:	Progress data for GLEN BIRDZELL;ALEX BAILLIE;MIKE GUTTERRES on Jul 24, 1997
Comment:	Approved the survey form for the next meeting of EDWMP. The survey requests that participants list three issues that agreement could be reached and three that agreement could never be reached. Also listed a project for each issue that they felt an agreement could be reached.
Date:	7/22/97
Name:	Progress data for GLEN BIRDZELL;ALEX BAILLIE;MIKE GUTTERRES on Jul 22, 1997
Comment:	Attended the Stockton East Water Distric Meeting to present the EDWMP. The SEWD Board voted that they should participate in the program, and that they wished to be named as one of the applicants on the EDWMP Inquiry Submittal.
Date:	7/11/97
Name:	Progress data for GLEN BIRDZELL;ALEX BAILLIE;MIKE GUTTERRES on Jul 11, 1997
Comment:	Held the organizational meeting of the East Delta Watershed Management Program. Thirty-four agencies or individuals were represented. It was agreed that future meetings would be held to formulate an organization structure. Also the attendees felt it would be appropriate to submit an inquiry submittal to CALFED for Catagory III funds. This submittal was to let CALFED know that EDWMP was forming and that in January a proposal would be made for funds to administer the program.
Date:	7/10/97
Name:	Progress data for MIKE GUTTERRES on Jul 10, 1997
Comment:	Held strategy meeting for the first stakeholders meeting at the Farm Bureau on 7/11/97.

Date: 7/7/97
Name: Progress data for MIKE GUTTERRES on Jul 7, 1997
Comment: Attended a meeting in Sacramento at Boyle. Consultant team of CDM, Boyle, and Larry Walker and Associates was present as well as MUD. Decided that Paul Sanguinetti, of the Farm Bureau, would be the moderator. Identified a program with four phases. Phase one, a current assessment looking at chemical and biological indicators as well as current pollution prevention practices being used. Phase two, design potential projects both urban and agricultural. Phase three, implement some or all of the projects. Phase four, assess the impacts of the project(s) and redesign through monitoring and re-evaluation.

Would try and get pollitical support from the San Joaquin County Board of Supervisors, the State Assembly, Senate, and U.S. House of Representatives.

Title: M4 -- SMITH CANAL PROJECT
Short description: SMITH
Long description: This is a negotiated sampling and water quality evaluation program to determine the reason for dissolved oxygen sags in Smith Canal and the subsequent fish kills.

Measure of Success: (WQ, VI)
Annual report on water quality in study area
Type: Result
Start date: 2/1/97 Due Date: 7/1/98
Who: MIKE GUTTERRES;ALEX BAILLIE

Progress data history

Date: 6/5/98
Name: Progress data for ALEX BAILLIE on Jun 5, 1998
Comment: I replaced the YSI probes in Smith Canal today. The computer is scheduled to be repaired.

Date: 6/4/98
Name: Progress data for ALEX BAILLIE on Jun 4, 1998
Comment: I retrieved the YSI monitoring probes from Smith Canal for calibration. The computer has a keyboard problem and the YSI probes cannot be reinstalled today. I will try to replace the probes tomorrow.

Date: 5/19/98
Name: Progress data for ALEX BAILLIE on May 19, 1998
Comment: I collected the ambient water samples for Smith Canal. The DO level at all four stations is up to around 10 mg/L.

Date: 5/18/98
Name: Progress data for ALEX BAILLIE on May 18, 1998
Comment: I collected the YSI probes from Smith Canal for monitoring calibration. The pH and DO probes were replaced with new probes. The data indicated a low DO condition in Smith Canal since the last calibration check.

Date: 5/5/98
Name: Progress data for ALEX BAILLIE on May 5, 1998
Comment: I sent Dr. Chen the TSS monitoring data for the Smith Canal Project. This task completes the monitoring portion of the project for the 1997-98 wet season.

Date: 4/16/98
Name: Progress data for ALEX BAILLIE on Apr 16, 1998
Comment: Picked up signs from Mark-Ease for LEAP project and delivered them to the Corp Yard for posting.

Date: 4/16/98
Name: Progress data for ALEX BAILLIE on Apr 16, 1998
Comment: I conducted routine calibration checks on the YSI probes located in Smith Canal. The dissolved oxygen probe from Pershing Bridge appears to be bad. In addition, the pH probe from this site also apppears to be in error. The millivolts did not match the pH buffers.

Date:	4/8/98
Name:	Progress data for ALEX BAILLIE on Apr 8, 1998
Comment:	I collected the ambient water samples from Smith Canal today. I also collected the TSS sample requested by Dr. Chen to calibrate the City sediment model for Smith Canal.
Date:	4/3/98
Name:	Progress data for ALEX BAILLIE on Apr 3, 1998
Comment:	I conducted monitoring on Smith Canal for the special TSS sampling needed to test the sediment transport model for Dr. Chen. The dissolved oxygen levels are up around 5.0 mg/L.
Date:	3/27/98
Name:	Progress data for ALEX BAILLIE on Mar 27, 1998
Comment:	Collected YSI probes from Smith Canal for check and calibration. Pershing Bridge D.O. probe shown to be reading low during probe check. The Pershing probe also had diffculty calibrating. Both probes replaced after calibration.
Date:	3/17/98
Name:	Progress data for ALEX BAILLIE on Mar 17, 1998
Comment:	I conducted ambient monitoring of Smith Canal. The disssolved oxygen levels have increased along the canal. A petroleum sheen was observed along the bank by the Buena Vista station.
Date:	3/13/98
Name:	Progress data for ALEX BAILLIE on Mar 13, 1998
Comment:	Calibrated the YSI monitoring meters for Smith Canal. After about 1-week the meters are holding calibration very well. Started conducting meter checks with standardized solutions prior to recalibration.
Date:	2/20/98
Name:	Progress data for ALEX BAILLIE on Feb 20, 1998
Comment:	Collected samples from Smith Canal for storm water monitoring project.
Date:	2/19/98
Name:	Progress data for ALEX BAILLIE on Feb 19, 1998
Comment:	Collected samples from Smith Canal for storm water monitoring project.
Date:	1/29/98
Name:	Progress data for ALEX BAILLIE on Jan 29, 1998
Comment:	YSI meters calibrated and reinstalled in Smith Canal.
Date:	1/21/98
Name:	Progress data for MIKE GUTTERRES on Jan 21, 1998
Comment:	Ambient water sampling done at Smith Canal. The pH meter was not working properly and was unable to get accurate pH levels.
Date:	1/16/98
Name:	Progress data for ALEX BAILLIE on Jan 16, 1998
Comment:	Collected samples for the Smith Canal Project.
Date:	1/15/98
Name:	Progress data for ALEX BAILLIE on Jan 15, 1998
Comment:	Collected samples during low tide from Smith Canal for storm water monitoring project.
Date:	1/14/98
Name:	Progress data for ALEX BAILLIE on Jan 14, 1998
Comment:	Collected samples from Smith Canal for storm water monitoring project. Legion park discharging during sample collect. A petroleum sheen was noted in the Legion Park discharge and a sample for TPH was also collected.
Date:	1/13/98
Name:	Progress data for ALEX BAILLIE on Jan 13, 1998
Comment:	Sent E-mail to laboratory reminding them to log the calibration work done to the YSI meters. The last calibration check was not recorded.

Date: 1/9/98
Name: Progress data for ALEX BAILLIE on Jan 9, 1998
Comment: Compiled data reports from Smith Canal monitoring project for October, November, December 1997 to be sent to Carl Chen.

Date: 1/8/98
Name: Progress data for ALEX BAILLIE on Jan 8, 1998
Comment: Removed the YSI probes for calibration check from Smith Canal. I noted that the both probes had not been installed on the retaining cables properly. The meters were found sitting on the bottom in the mud. This may impact some of the data such as turbidity.

The meters were reinstalled following the calibration check.

Date: 12/4/97
Name: Progress data for ALEX BAILLIE on Dec 4, 1997
Comment: YSI meters removed from Smith Canal sites and data down loaded to computer file. Pershing Bridge site meter was found to have the turbidity lens wiper missing. Turbidity reading may have been effected due to fouling on the lens. YSI meters cleaned and calibrated before being installed back into Smith Canal. New turbidity probes installed in both meters.

Date: 12/2/97
Name: Progress data for ALEX BAILLIE on Dec 2, 1997
Comment: Collected ambient water samples from Smith Canal monitoring sites. QA/QC samples collected at Buena Vista sample site. Water looked very dark in color at Legion Park and Pershing Bridge. The dissolved oxygen levels were also low with reading at Legion Park and Pershing Bridge less than 1.0 mg/L.

Reviewed calibration procedures for Smith Canal monitoring equipment with Environmental Control Officer, Toni Duncan.

Date: 11/26/97
Name: Progress data for ALEX BAILLIE on Nov 26, 1997
Comment: Checked dissolved oxygen, pH, and temperature at Smith Canal monitoring sites. No samples were collected during the monitoring trip. The dissolved oxygen level appears to have risen slightly since the last monitoring trip.

Date: 11/20/97
Name: Progress data for ALEX BAILLIE on Nov 20, 1997
Comment: Collected and calibrated YSI monitoring meters from Smith Canal. Monitoring data showed dissolved oxygen depleted at Pershing Bridge to 0 mg/L and at I5 down to under 1.0 mg/l following the rain event.

Date: 11/14/97
Name: Progress data for ALEX BAILLIE on Nov 14, 1997
Comment: Collected monitoring data for dissolved oxygen, temperature, and pH at Smith Canal monitoring stations. Low dissolved oxygen levels still persistent in Smith Canal. The level of dissolved oxygen appears to be starting to increase slowly.

Date: 11/13/97
Name: Progress data for ALEX BAILLIE on Nov 13, 1997
Comment: Took dissolved oxygen, pH, and temperature readings at Smith Canal monitoring stations. The low dissolved oxygen levels are still present at three of the stations.

Date: 11/12/97
Name: Progress data for ALEX BAILLIE on Nov 12, 1997
Comment: Sampling conducted at low tide on Smith Canal monitoring stations. Low dissolved oxygen (less than 1) detected at three stations.

Date: 11/11/97
Name: Progress data for ALEX BAILLIE on Nov 11, 1997
Comment: Samples collected at low tide from Smith Canal monitoring stations. An oily sheen was observed on the water at Legion park and Pershing Bridge. A slight drop in dissloved oxygen levels (less than 5) was detected at two stations.

Date:	11/10/97
Name:	Progress data for ALEX BAILLIE on Nov 10, 1997
Comment:	Collected samples for first flush at Smith Canal monitoring stations. Inspectors noted strong oily odor at Legion Park and observed heavy white foam from Ryde Avenue storm water pump station.
Date:	11/4/97
Name:	Progress data for ALEX BAILLIE on Nov 4, 1997
Comment:	Conducted monthly ambient water sampling on Smith Canal. Trained EC officers T Duncan and L Williams in sampling protocol for Smith Canal. Duplicate sample done on Legion Park for QA/QC.
Date:	10/31/97
Name:	Progress data for ALEX BAILLIE on Oct 31, 1997
Comment:	Developed draft calibration check list for YSI probes being used for continuous monitoring.
Date:	10/29/97
Name:	Progress data for ALEX BAILLIE on Oct 29, 1997
Comment:	Cleaned and calibrated Smith Canal probes at I-5 bridge and Pershing bridge.
Date:	10/15/97
Name:	Progress data for ALEX BAILLIE on Oct 15, 1997
Comment:	First monthly ambient water testing done on Smith Canal. Monitoring time scheduled to monitor low tide in Smith Canal. I trained Laboratory Tech. Victor in Smith Canal sampling stations.
Date:	10/10/97
Name:	Progress data for ALEX BAILLIE on Oct 10, 1997
Comment:	Smith Canal sampling and monitoring equipment assembled and is currently being stored at MUD laboratory. Sampling containers for first storm event received from Analab. The containers are stored in the storm water conference room.
Date:	10/10/97
Name:	Progress data for MIKE GUTTERRES;ALEX BAILLIE on Oct 10, 1997
Comment:	October 9, 1997 about 1230 hours toured Smith Canal form Ryde avenue to Pixie Woods by Car and Foot. There was no visible fish kill in that reach of the canal. This was 4 hours after the storm event of 10/8 and 10/9 that yielded a precip of .28 inches.
Date:	10/8/97
Name:	Progress data for ALEX BAILLIE on Oct 8, 1997
Comment:	Conducted tour of the Smith Canal Sampling Sites for the Environmental Control Officers. Each of the four monitoring sites was visited and safety concerns discussed with the officers who will be collecting the samples for the project. The sample site at Legion Park was moved to the pump station discharge pipe because of muddy and rocky ground around the orginal sample site by the flag pole.
Date:	10/7/97
Name:	Progress data for ALEX BAILLIE on Oct 7, 1997
Comment:	Conducted monitoring at Legion Park, Pershing Bridge, Buena Vista, and I-5 pedestrian bridge for DO, pH, and temp.
Date:	10/1/97
Name:	Progress data for MIKE GUTTERRES on Oct 1, 1997
Comment:	Placed samplers at the Pershing Avenue Bridge and at the Pedestrian Bridge west of I-5 in accordance with the Regional Board's approved plan.
Date:	9/30/97
Name:	Progress data for MIKE GUTTERRES on Sep 30, 1997
Comment:	Robert DiNatalie, Sharman rep. for Indeco YSI, set up the two YSI samplers for Smith Canal.
Date:	9/25/97
Name:	Progress data for ALEX BAILLIE on Sep 25, 1997
Comment:	Attended YSI and pH training class for Smith Canal monitoring group. Procedures for calibrating meters and reading back data results reviewed.

Date: 9/25/97
Name: Progress data for ALEX BAILLIE on Sep 25, 1997
Comment: Picked up the Smith Canal Log books from duplicating.

Date: 9/23/97
Name: Progress data for MIKE GUTTERRES on Sep 23, 1997
Comment: Refresher training for field DO meters and field pH meters.

Date: 9/22/97
Name: Progress data for MIKE GUTTERRES on Sep 22, 1997
Comment: Pre-Storm season meeting with Terry Hinkle, MUD Lab, Larry Huber, MUD Lab, Larry Williams, MUD Environmental Control, and Stormwater Division. Discussed manpower requirements as well as laboratory requirements.

Date: 8/28/97
Name: Progress data for ALEX BAILLIE on Aug 28, 1997
Comment: Selected sampling sites along Smith Canal for the Smith Canal monitoring project. Sampling points are located 50 yards south of Legion Park Pump Station (station 1), middle of Pershing Bridge on the west side (station 2), west side of Buena Vista Pump Station (station 3), and southern piling on the west side of the pedestrian bridge at I5 (station 4).

Date: 8/21/97
Name: Progress data for ALEX BAILLIE on Aug 21, 1997
Comment: Revised sample field log form to include calibration check for pH meter and dissolved oxygen meter.

Received GIS map of Smith Canal monitoring sites from Engineer Section.

Date: 8/20/97
Name: Progress data for MIKE GUTTERRES on Aug 20, 1997
Comment: Received a FAX from Marty Stevenson, Kinnetic Laboratories, Inc., detailing the sediment analysis.

Date: 8/19/97
Name: Progress data for MIKE GUTTERRES on Aug 19, 1997
Comment: Tasked Ken Payne, CDM, with writing a task order to have a firm get the required samples and deliver them to MUD lab for analysis. Ken will also talk to Marty Stevenson, KLI, to define the sediment analysis parameters and methods for the sediment analysis.

Date: 8/19/97
Name: Progress data for ALEX BAILLIE on Aug 19, 1997
Comment: Developed sample log form for the Smith Canal Project.

Date: 8/19/97
Name: Progress data for MIKE GUTTERRES on Aug 19, 1997
Comment: Tasked Dee Pulver, office assistant C.O.S., with requesting a P.O. for the samplers and appurtenances per quote.

Date: 8/14/97
Name: Progress data for MIKE GUTTERRES on Aug 14, 1997
Comment: Attended a meeting with Morris Allen, Director of Municipal Utilities, Edward Formosa, Deputy, Glen Birdzell, Deputy, Larry Huber, Lab Supervisor, Bob Castelli, Tech Services Supervisor, and Mike Gutterres, Associate Civil Engineer. The meeting was to discuss the Stormwater Monitoring Program and its effects on various staff, lab time, and materials.

Date: 8/7/97
Name: Progress data for MIKE GUTTERRES on Aug 7, 1997
Comment: YSI local distributor Sharman Inc. demonstrated their automatic sampler.

Date: 7/30/97
Name: Progress data for MIKE GUTTERRES;ALEX BAILLIE on Jul 30, 1997
Comment: Regional Board has received a sampling plan for Smith Canal. This Sampling Plan is the result of negotiations with the Regional Board.

Title:	M5 -- TOXICITY PROJECT		
Short description:	TOXIC		
Long description:	This is a sampling and testing program negotiated with the Regional Board		
Type:	Result		
Start date:	7/1/96	Due Date:	7/1/98
Who:	MIKE GUTTERRES;ALEX BAILLIE		

Progress data history

Date:	11/10/97
Name:	Progress data for MIKE GUTTERRES on Nov 10, 1997
Comment:	The first storm with rainfall greater than 0.03" (first flush) occurred and was sampled. Toxicity samples were taken and sent to Toxscan for testing in accordance with the California Regional Water Quality Control Board, Central Valley Region's approved plan.
Date:	8/19/97
Name:	Progress data for MIKE GUTTERRES on Aug 19, 1997
Comment:	Sent memo to Edward Formosa, Deputy Director MUD, detailing task in order to get MUD support.
Date:	8/14/97
Name:	Progress data for MIKE GUTTERRES on Aug 14, 1997
Comment:	Attended a meeting with Morris Allen, Director of Municipal Utilities, Edward Formosa, Deputy, Glen Birdzell, Deputy, Larry Huber, Lab Supervisor, Bob Castelli, Tech Services Supervisor, and Mike Gutterres, Associate Civil Engineer. The meeting was to discuss the Stormwater Monitoring Program and its effects on various staff, lab time, and materials.

1998-99
STORMWATER PROGRAM
GOALS AND OBJECTIVES

Title: BMP A3.1 STREET SWEEPING
Short description: MAINTNENACE
Long description: Continuation of the existing street sweeping and litter removal programs.

MEASURE OF SUCCESS: (PI;VI)
Annual reporting of the quantity of material removed by street sweeping and liter removal programs.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: GLEN BIRDZELL
Priority: 3
Status: On track

Title: BMP A3.2 STREET AND PAVEMENT MAINTENANCE
Short description: ROADWAY O&M
Long description: The City will operate its street maintenance program under the State General Permit for Construction Activities.

MEASURE OF SUCCESS: (VI)
Annual verification of re-certification and a copy of a annual report verifying compliance with the provisions of Street Maintnenance SWPPP.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: ALEX BAILLIE
Priority: 2
Status: On track

Title: BMP A4.2 PROPOSED FLOOD MANAGEMENT PROJECTS
Short description: FLOOD MANAGEMENT
Long description: All flood management projects must consider stormwater quality issues according to the SWQCCP.

MEASURE OF SUCCESS: (VI)
Adoption of policies and procedures that ensure all flood mamagement projects assess the impact of a project on receiving waters (CEQA) and comply with the SWQCCP.
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: GLEN BIRDZELL
Priority: 1
Status: On track

Title: BMP A6.1 PESTICIDES, HERBICIDES,&FERTILIZERS
Short description: PESTICIDES,HERBICID
Long description: 1. City will control pestcides used on public lands
2. City has named a Pest Control Manager

MEASURE OF SUCCESS: (VI)
Annual report of the amount of material used from the Pest Control Manager.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: ALEX BAILLIE
Priority: 2
Status: On track

Title: RESIDENTIAL & COMMERCIAL ACTIVITIES
Short description: General Program Ele
Long description: There are 13 Best Management Practices that define this program element. The BMP A x.x are the goals to be accomplished to complete this element of the program.

BMP -- 4 Existing Programs
BMP -- 8 Modifications to existing programs
BMP -- 3 Studies

Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: ALEX BAILLIE;DON KING;GLEN BIRDZELL
Priority: 2
Status: On track

Title: BMP A1.1 CHANNEL AND DETENTION BASIN MAINTENANCE
Short description: MAINTENANCE
Long description: Continuation of the City current maintenance program for channels and detention basins.

MEASURE OF SUCCESS: (PI, VI)
Documentation of Maintenance activities in the Stormwater Annual Report.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: ALEX BAILLIE
Priority: 2
Status: On track

Title: BMP A1.2 CATCHBASIN,PIPLINE,& PUMP STATION MAINTENANCE
Short description: MAINTNENACE
Long description: Continuation of the existing maintenance efforts for catch basins, pipelines, and pump stations.

MEASURE OF SUCCESS: (PI,VI)
Summarize maintenance activities in the Stormwater Annual Report.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: GLEN BIRDZELL
Priority: 1
Status: On track

Title: BMP A2.5 DEVELOPMENT REVIEW PROCEDURES
Short description: DEV. PROCEDURES
Long description: The revision of the review process to ensure that stormwater quality BMPs are incorporated into new developments.

MEASURE OF SUCCESS: (VI)
Staff level adoption of procedures to handle development projects with respect to stormwater
Type: Result
Start date: 7/3/95 Due Date: 7/1/99
Who: GLEN BIRDZELL
Priority: 2
Status: On track

Title: IMPROPER DISCHARGE ACTIVITES
Short description: Discharge
Long description: Within this category of the Stormwater Management Program, there are a total of 12 Best Management Practices.
BMPs -- 8 exiting programs
BMPs -- 1 modified program
BMPs -- 1 study
BMPs -- 5 new programs
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: GLEN BIRDZELL;ALEX BAILLIE;
DON KING;OUT REACH
Priority: 2
Status: On track

Title: BMP B1.1 PREVENTION OF ILLICIT DISCHARGES
Short description: SW PLAN CHECKING
Long description: The continuation of the City's existing plan checking and inspection programs to prevent illicit discharges to the storm drain system.

MEASURE OF SUCCESS: (VI)
Annual reporting of the volume of work directed at this effort.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: DON KING
Priority: 1
Status: On track

Title: BMP B2.1 ONGOING FIELD SCREENING
Short description: DRAINAGE MONITORING
Long description: A dry weather field screening program in whch about 20% of the major outfalls will be surveyed annually for potential illicit discharges to the storm drain system.

MEASURE OF SUCCESS: (VI)
Annual report of inspections
Type: Result
Start date: 12/1/98 Due Date: 1/1/99
Who: ALEX BAILLIE
Priority: 1
Status: On track

Title: BMP B3.1 INVESTIGATION AND ELIMINATION OF ILLICIT DISCHARGES
Short description: ILLICIT DISCHARGES
Long description: A program for the investigation and mitigation of potential illicit discharges.

MEASURE OF SUCCESS: (VI)
Annual investigation and mitigation report.
Type: Result
Start date: 12/1/98 Due Date: 1/1/99
Who: ALEX BAILLIE
Priority: 2
Status: On track

Title: BMP B4.1 SWPPPs FOR MUNICIPAL FACILITIES
Short description: CITY'S SWPPP
Long description: The development and implementation of SWPPP by the Municipal Service Center and the two City operated land fills.

MEASURE OF SUCCESS: (VI)
An annual report on the implementation of the SWPPP at those municipal facilities.
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: ALEX BAILLIE
Priority: 2
Status: On track

Title: BMP B4.2 INDUSTRIAL INSPECTIONS FOR SPILL PREVENTION AND RESPONSE
Short description: SPILL PREVENT.
Long description: The intigration of the spill prevention and response into the City Fire Department Industrial Inspection Program.

MEASURE OF SUCCESS: (VI)
Annual report of the effort made by the Fire Department.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: ALEX BAILLIE
Priority: 2
Status: On track

Title: BMP B4.3 HAZARDOUS MATERIALS EMERGENCY RESPONSE PLAN
Short description: HAZMAT
Long description: The adoption and implementation of a Hazardous Materials Emergency Response Plan by the City.

MEASURE OF SUCCESS; (VI)
Annual report on the number of responses to hazardous material spills and the training and education provided City work force.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: OUT REACH
Priority: 2
Status: On track

Title: BMP B5.1 PUBLIC REPORTING PROGRAM
Short description: PUBLIC REPORTING
Long description: 1. City will continue the existing 911 public reporting system
2. City will evaluate the feasibility of alternative programs to encourage public reporting

MEASURE OF SUCCESS: (VI)
Annual report on the number of 911 calls and the evaluation of alternative reporting systems.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: DON KING;OUT REACH
Priority: 2
Status: On track

Title: BMP B6.1 PUBLIC EDUCATION
Short description: PUBLIC EDUCATION
Long description: 1. City will continue the use of the Help brochure
2. City will develop and implement the Auntie Pollution Program
3. City will participate in the TOPPS program

MEASURE OF SUCCESS: (VI)
Annual report on the efforts expended in each of the areas mentioned above.
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: DON KING;OUT REACH
Priority: 3
Status: Done

Title: BMP B6.2 STORM DRAIN STENCILING
Short description: DI STENCILING
Long description: City authorized the Vector Control District to stencil the City's storm drains.

MEASURE OF SUCCESS; (VI)
Annual report indicating the extent of this effort by the Vector Control.
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: OUT REACH
Priority: 1
Status: On track

Title: BMP B6.3 HOUSEHOLD HAZARDOUS WASTE COLLECTION
Short description: H. H. WASTE COL.
Long description: City will assist the County of San Joaquin to integrate stormwater quality issues into the public education programs for the County's Household Hazardous Waste Program.

MEASURE AOF SUCCESS: (VI)
Annual report evaluating this effort.
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: OUT REACH
Priority: 2
Status: On track

Title: BMP B6.4 USED OIL RECYCLING
Short description: OIL RECYCLING
Long description: Continuation of advertisment of the locations of used oil recycling centers and public information encouraging the proper management of used oil.

MEASURE OF SUCCESS: (PI;VI)
Annual reporting of the amount of used oil collected within the city of stockton and the extent of public education efforts.
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: OUT REACH
Priority: 2
Status: On track

Title: BMP C2.1 INDUSTRIAL MONITORING PROGRAM
Short description: MONITORING
Long description: 1. The City will develop an investigative compliance monitoring program for level one PIFs

2. City will also develop an Exemption Certification Program

MEASURE OF SUCCESS: (VI)
Adoption of Administrative Guidelines for the Conditions of Approval by the City council
Type: Result
Start date: 12/1/97 Due Date: 7/1/99
Who: ALEX BAILLIE
Priority: 2
Status: On track

Title: CONSTRUCTION ACTIVITES
Short description: CONSTRUCTION
Long description: A program to implement and maintain structural and non-structural best management practices at construction sites. 4 BMPs were developed to implement this program.

BMP -- 3 modified programs
BMP -- 1 new program

Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: GLEN BIRDZELL;ALEX BAILLIE; DON KING
Priority: 2
Status: On track

Title: BMP D3.1 INSPECTION AND ENFORCEMENT
Short description: INSPECTION/ENFORCE.
Long description: The City is required to develop and implement a construction site inspection and enforcement policy.

MEASURE OF SUCCESS: (VI)
Development of a handbook for construction site inspections.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: ALEX BAILLIE;DON KING
Priority: 1
Status: On track

Title: BMP D4.1 EDUCATION AND TRAINING PROGRAM
Short description: OUTREACH
Long description: The City is required to train the construction site operators and city staff.

MEASURE OF SUCCESS: (VI)
Annual report of the training efforts
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: OUT REACH
Priority: 2
Status: On track

Title: BMP B7.1 SANITARY SEEPAGE/OVERFLOW COORDINATION
Short description: SEEPAGE SURVEY
Long description: Continuation of the existing program City I/I inspections and the coordination of the identification and elimination sanitary seepage overflow between the City and County.

MEASURE OF SUCCESS: (VI)
Annual report identifying incidents and mitigation.
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: OUT REACH
Priority: 1
Status: On track

Title: INDUSTRIAL ACTIVITES
Short description: INDUSTRY
Long description: A program to monitor and control pollution form industrial activities. Seven Best Management Practices are to be implemented in this program

BMP -- 1 study
BMP -- 6 new programs

Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: GLEN BIRDZELL;ALEX BAILLIE; DON KING
Priority: 2
Status: On track

Title: BMP C1.1 PRIORITY INDUSTRIAL FACILITY IDENTIFICATION
Short description: PIF ID
Long description: Ongoing identification of major and minor Priority Industrial Facilities for the purpose of inspections.

MEASURE OF SUCCESS: (VI)
Annual update of the PIF list.
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: ALEX BAILLIE
Priority: 2
Status: On track

Title: BMP C1.5 INDUSTRIAL OUTREACH PROGRAM
Short description: INDUSTRIAL OUTREACH
Long description: The City will develop a program to educate the local industries about stormwater pollution prevention and proper use of BMPs.

MEASURE OF SUCCESS: (VI)
Annual report of the extent of this effort.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: OUT REACH;ALEX BAILLIE
Priority: 2
Status: On track

Title: MONITORING PROGRAM
Short description: MONITORING
Long description: Monitoring the quality of the ambient waters and storm water discharges.
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: GLEN BIRDZELL;ALEX BAILLIE
Priority: 2
Status: On track

Title: M1 -- DISCHARGE MONITORING
Short description: DISCHARGE
Long description: Conduct the discharge monitoring program approved by the State of California.

MEASURE OF SUCCESS; (WQ;PI;VI)
Annual report summarizing the monitoring effort
Type: Result
Start date: 7/1/95 Due Date: 7/1/99
Who: GLEN BIRDZELL
Priority: 3
Status: On track

Title: M2 -- AMBIENT MONITORING
Short description: AMBIENT
Long description: River and Stream Monitoring Program as described in the Stormwater Ambient Monitoring Program.
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: ALEX BAILLIE;GLEN BIRDZELL
Priority: 2
Status: On track

Title: M4 -- SMITH CANAL PROJECT
Short description: SMITH
Long description: This is a negotiated sampling and water quality evaluation program to determine the reason for dissolved oxygen sags in Smith Canal and the subsequent fish kills.

Measure of Success: (WQ, VI)
Annual report on water quality in study area
Type: Result
Start date: 2/1/97 Due Date: 7/1/99
Who: ALEX BAILLIE;GLEN BIRDZELL
Priority: 2
Status: On track

Title: M5 -- TOXICITY PROJECT
Short description: TOXIC
Long description: This is a sampling and testing program negotiated with the Regional Board
Type: Result
Start date: 7/1/96 Due Date: 7/1/99
Who: ALEX BAILLIE;GLEN BIRDZELL
Priority: 2
Status: On track

1998-99
TIME LINE

Title	Who	1998 - 1999 Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
RESIDENTIAL & COMMERCIAL ACTIVITIES	ALEX BAILLIE;DON KING;GLEN BIRDZELL												
BMP A1.1 CHANNEL AND DETENTION BASIN MAINTENANCE	ALEX BAILLIE												
BMP A1.2 CATCHBASIN,PIPLINE,& PUMP STATION MAINTENANCE	GLEN BIRDZELL												
BMP A2.5 DEVELOPMENT REVIEW PROCEDURES	GLEN BIRDZELL												
BMP A3.1 STREET SWEEPING	GLEN BIRDZELL												
BMP A3.2 STREET AND PAVEMENT MAINTENANCE	ALEX BAILLIE												
BMP A4.2 PROPOSED FLOOD MANAGEMENT PROJECTS	GLEN BIRDZELL												
BMP A6.1 PESTICIDES, HERBICIDES,&FERTILIZERS	ALEX BAILLIE												
IMPROPER DISCHARGE ACTIVITES	GLEN BIRDZELL; ALEX BAILLIE;DON KING;OUT REACH												
BMP B1.1 PREVENTION OF ILLICIT DISCHARGES	DON KING												
BMP B2.1 ONGOING FIELD SCREENING	ALEX BAILLIE												
BMP B3.1 INVESTIGATION AND ELIMINATION OF ILLICIT DISCHARGES	ALEX BAILLIE												
BMP B4.1 SWPPPs FOR MUNICIPAL FACILITIES	ALEX BAILLIE												
BMP B4.2 INDUSTRIAL INSPECTIONS FOR SPILL PREVENTION AND RESPONSE	ALEX BAILLIE												
BMP B4.3 HAZARDOUS MATERIALS EMERGENCY RESPONSE PLAN	OUT REACH												
BMP B5.1 PUBLIC REPORTING PROGRAM	DON KING;OUT REACH												
BMP B6.1 PUBLIC EDUCATION	DON KING;OUT REACH												
BMP B6.2 STORM DRAIN STENCILING	OUT REACH												
BMP B6.3 HOUSEHOLD HAZARDOUS WASTE COLLECTION	OUT REACH												
BMP B6.4 USED OIL RECYCLING	OUT REACH												
BMP B7.1 SANITARY SEEPAGE/ OVERFLOW COORDINATION	OUT REACH												
INDUSTRIAL ACTIVITES	GLEN BIRDZELL; ALEX BAILLIE;DON KING												

Title	Who	1998 - 1999 Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
BMP C1.1 PRIORITY INDUSTRIAL FACILITY IDENTIFICATION	ALEX BAILLIE												
BMP C1.5 INDUSTRIAL OUTREACH PROGRAM	OUT REACH;ALEX BAILLIE												
BMP C2.1 INDUSTRIAL MONITORING PROGRAM	ALEX BAILLIE												
CONSTRUCTION ACTIVITES	GLEN BIRDZELL; ALEX BAILLIE;DON KING												
BMP D3.1 INSPECTION AND ENFORCEMENT	ALEX BAILLIE;DON KING												
BMP D4.1 EDUCATION AND TRAINING PROGRAM	OUT REACH												
MONITORING PROGRAM	GLEN BIRDZELL; ALEX BAILLIE												
M1 – DISCHARGE MONITORING	GLEN BIRDZELL												
M2 – AMBIENT MONITORING	ALEX BAILLIE;GLEN BIRDZELL												
M4 – SMITH CANAL PROJECT	ALEX BAILLIE;GLEN BIRDZELL												
M5 – TOXICITY PROJECT	ALEX BAILLIE;GLEN BIRDZELL												

APPENDIX
BMP-A 2.5

City Manager's Office -- Economic Development Division

ERC Meetings - 1997

Date	ERC ID	Company	Site Address
Jan 1997			
1/9/97	85	Blockbuster Video	7676 Pacific Ave.
1/9/97	54	Raley's Grocery Store	Don Avenue and Hammer Lane
1/17/97	154	Brooks Fiber Communications	400 E. Main Street, Suite 750
1/17/97	105	Nesco Fertilizer	Airport Way Frontage, south of Ralph
1/22/97	146	Port Stockton Foods - Smart & Final	2040 E. Fremont Street
5			
Feb 1997			
2/6/97	32	Hughes Co. , Dwight P.	540 W. Scotts Avenue
2/11/97	66	Ultimate Container	3200 S. El Dorado Street
2/19/97	53	R.P. Tires	2107 West Lane
2/21/97	111	Auto Nation	1843 Boeing Way
4			
Mar 1997			
3/10/97	86	Charlie's Day and Night	706 N. El Dorado Street
3/11/97	87	Cost Plus	2201 W. Washington Street
3/18/97	20	Dopaco	4545 Quantas Lane
3			
Apr 1997			
4/17/97	1	24-Hour Fitness Center	3137 W. Benjamin Holt
4/22/97	189	Steel Product Fabricator - SJP	various sites
4/23/97	35	Kjeldsen, Sinnock, Neudeck	1113 W. Fremont Street
4/23/97	173	Used Car Auto Plaza	Telstar (behind WalMart)
4/24/97	72	Weston Ranch Shopping Center (Food 4 Less)	3434 Manthey Road
4/25/97	14	Conway Homes	
6			

Date	ERC ID	Company	Site Address
May 1997			
5/8/97	24	Feralloy Steel	Performance Drive
5/9/97	141	Auto Nation	1843 Boeing Way
5/13/97	106	Applied Aerospace Structures	3437 S. Airport Way
5/22/97	9	Casa del Sol	Sonora
5/27/97	108	Klinger, Bob	20 N. California Street
5/29/97	145	Noll Manufacturing	1320 Performance Dr.
6			
Jun 1997			
6/26/97	147	Raley's Grocery Store	Don Avenue and Hammer Lane
6/27/97	67	Temple Of Deliverance	7808 Kelly Drive
2			
Jul 1997			
7/15/97	150	Chemical Bottler - SJP	various sites being considered
7/15/97	116	Chemical Company - SJP	various sites being considered
7/15/97	153	Klinger, Bob	20 N. California Street
7/22/97	117	Narten Truck Terminal	Navy Drive
7/22/97	107	Royal Sweet	3955 Arch Road
5			
Aug 1997			
8/1/97	110	Auto Repair Shop	SE corner of Sutter & Taylor
8/1/97	118	Corrugated Synergies - SJP Client #9706.493	Performance Drive
8/4/97	152	Applied Aerospace Structures	3437 S. Airport Way
8/14/97	190	Deli - Wilson Way	907 S. Wilson Way
8/20/97	119	Brookside Shopping Center	S.E. corner of Shadowbrook & Brooksi
8/20/97	120	Western Roto Engravers (WRE)	
8/28/97	121	Federal Express - SJP Client #9703.471	Performance Drive
8/28/97	151	Platt Childcare - Bottom's Up	various sites
8			

Date	ERC ID	Company	Site Address
Sep 1997			
9/5/97	122	Teichert Aggragates	Van Dervin Parkway & Frank West Cir
9/8/97	123	Food-4-Less (Hammer Ln.)	Hammer Lane
9/10/97	124	Heinz	2800 S. California Street
9/15/97	125	Compucom	4686 Frontier Way
9/16/97	126	Sumiden Wire Products Corp.	1412 El Pinal
9/17/97	187	American Sunny Foods	2404 Stagecoach Road
9/18/97	127	Tri-Delta Fertilizer	2835 W. Washington Street
9/24/97	128	Sola, Richard	8714 Thornton Road
9/29/97	129	Phoenix Apartments	Hammer & Tam O'Shanter
9			
Oct 1997			
10/15/97	171	Auto Repair Shop	3947 West Lane
10/17/97	130	Auto Zone	1100 N. Wilson Way
10/27/97	131	State Farm Insurance	9 S. El Dorado Street
3			
Nov 1997			
11/20/97	184	Pacific Bakery & Routissere (formerly Eden S	3236 Pacific Avenue
1			

52 Total ERC Meetings for 1997

APPENDIX
BMP-A 6.1

MEMORANDUM

July 13, 1998

TO: Glen Birdzell, Deputy Director Storm Water

FROM: Nicole Truszkowski, Parks Superintendent

SUBJECT: **ANNUAL PESTICIDE, HERBICIDE, FERTILIZER USAGE REPORT**

Attached please find a summary of the pesticides, herbicides, and fertilizers utilized by the City of Stockton from July 1, 1997, through June 30, 1998. Currently Parks and Recreation, MUD, and Public Works are the only departments utilizing pesticides, herbicides and fertilizers. Included with this memorandum is a copy of the Parks and Recreation Directive #139, Pesticide and Fertilizer Control Program. Attached is a copy of the City Manager Directive No. P&R--003; this directive is followed by Parks and Recreation, Public Works, and MUD. Also, attached is a copy of MUD's General Procedures for Chemical Usage. Public Works recently sent a memo to key employees regarding the correct procedure for application of pesticides, herbicides and fertilizers, a copy of this memo is also attached for your information.

Scott Essin, the Arborist for Parks and Recreation, is currently on a leave of absence, and I have prepared this report in his absence. The duties of this report will remain the responsibility of the Arborist. I have also attached a copy of the job description for the Arborist. The monthly salary for the Arborist position ranges from $3475.00 - $4244.00.

If you require any further information, please contact me at 8372.

TIM GALLAGHER, DIRECTOR
PARKS AND RECREATION

N J Truszkowski

NICOLE TRUSZKOWSKI
PARKS SUPERINTENDENT

NT:rm

Attachments

TOTAL CHEMICALS APPLIED
July 1997 - June 1998

Golf Courses

Bayleton Mobay Corp.	32.5 lbs.	Reward Zeneca	2 gal.
23-3-5-Scott Fertilizer/Fungicide VII	790 lbs	Betasan 12.5G Platte Chem. Co.	170 lbs.
Scotts Fluid/Fungicide	75 qts.	Chipco Rhone Poulene	18 gal. 8 lbs.
Cleary's 3336 Cleary's Co.	54 lbs	Weedhoe Monterey Chemical Co.	945.5 oz.
Fore Rohm & Haas	28 lbs.	Heritage Zeneca	95 oz.
Rodeo Monsanto	908 oz.	Daconil Fermenta Plant Protection	7 gal.
Round-up Pro Monsanto	1467 oz.	Fungo-Flo Grace Sierra	3 gal.
Trimec Gordon Corp.	91 oz.	Weedhoe Vineland Chemical Co.	167.5 oz.
Dithane Rohm & Haas	6 qts.	Weed B gone Ortho	23.5 oz.
Engage Turfgo	25 lbs.	Turflon Ester Dow Elanco	4.5 oz.
Daconil 2787 Fenmid 15 k Biosciences	5 gal.	Surflan Dow Elanco	10 gal.
Weed, grass control 60 WP OM Scotts & Sons	127.5 lbs.	Betasan 4E Turfgo	21 gal.
Copper Sulfate Phelps Dodge Corp.	163 oz.	Cutrine Plus Applied Biochemists	2 gal.

Parks

Round-up Pro Monsanto	3873 oz.	Engage 10g United Horticultural Supply.	100 lbs.

Municipal Utilities Department

Scourge	186 oz	Pyrin Wilbur Ellis	162 oz.
Vectobac Abbott Laboratories	580 gal.	Bivert Wilbur Ellis	20 gal.
Sanafoam Vaporooter Arrigation Engineering Co.	20 gal.		

Public Works O&M

Round-up Pro
Monsanto 19 1/2 pts.

PARKS AND RECREATION PROCEDURES DIRECTIVE

SUBJECT	DIRECTIVE	EFFECTIVE	PAGE
Pesticide and Fertilizer Control Program Best Management Practices Report	139	8/18/97	39

I. PURPOSE

The purpose of this Pesticide and Fertilizer Control Program is to assure the proper storage, mixing, use, and disposal of pesticides and pesticide containers. This procedure will help reduce health, safety, and environmental problems associated with the use of pesticides.

II. RESPONSIBILITY

A. At each facility, the supervisor shall be responsible for implementing this pesticide control procedure and for assuring that employees are instructed as to the requirements of the procedure and they follow the procedure properly.

B. All employees shall be responsible for knowing and complying with this procedure.

C. The supervisor shall be responsible to ensure that each person has the proper certification and training prior to being assigned to apply such chemicals.

III. DEFINITION OF TERMS

A. "Pesticide" means any pesticide, insecticide, germicide, rodenticide, algicide, fungicide, herbicide, miticide, or molluscide or fertilizer for purpose of this report.

B. "Label requirements and label instructions" refer to printed material on the pesticide container and to other printed material provided with the product when purchased.

C. "Material Safety Data Sheets (MSDS)" are documents which supply information about a particular hazardous substance or mixture such as hazardous ingredients, health hazards, fire hazards, reactivity, etc.

D. "Pest Control Manager" is the person designated by the City Manager to administer the NDPES Storm Water Pesticide Program. The Pest Control Manager shall administer compliance of this policy and, on an annual basis, submit a report to the Storm Water Division for issuance by August 1. For 1997-98, the following person has been so designated: Scott Essin, Parks Superintendent.

E. "Pest Control Advisor Written Recommendation" is a recommendation that is written for use of a specific pesticide by a licensed Pest Control Advisor (PCA). A PCA recommendation shall be obtained on each pesticide purchased and shall be kept on record for inspection by each department using pesticides.

IV. PROCEDURE

A. Pesticides Approved for Use

1. Only pesticides approved for use by the designated Pest Control Manager shall be used.

2. A list of approved pesticides will be developed in the 1997-98 budget year. All pesticides shall be applied by certified pest control applicators or employees closely supervised by certified employees.

3. The Pest Control Manager shall cause the development of an "Integrated Pest Management" Program. This plan will review the options for the least toxic pesticides to affect control. This plan shall be developed in the 1998 calendar year.

B. Label Information - During the current fiscal year, the following will occur:

1. Once an approved pesticide list is developed, a copy of each current label for the approved pesticide shall be attached and made a part of this procedure.

2. The Pest Control Manager shall cause the development of a current summary for each approved pesticide and attach the summaries as a part of this procedure during the 1997-98 fiscal year.

3. MSDS will be obtained and made available for all employees.

C. Purchasing Pesticides

1. Pesticides shall be purchased in as small a container as is practical.

2. Pesticides shall not be stockpiled for long periods of time. Purchases should be made for the amount needed only. (Maximum storage time recommended is six months to one year.)

D. Receiving Pesticides

1. An employee purchasing or receiving a pesticide shall verify that he has received an approved pesticide and in the correct quantities as ordered and has received the MSDS from the supplier.

2. The employee shall read the label to determine any changes in the label requirements from those requirements specified in this procedure. If a change has occurred, the Pest Control Manager shall be notified so that the label and the label summary attached as part of this procedure can be amended.

3. Each department will maintain records of pesticide use and file required reports to the San Joaquin County Agricultural Commissioner.

E. Storing Pesticides

1. All pesticides shall be stored in accordance with the label requirements.

2. Each department that stores pesticides shall assign a location or locations for the storage of pesticides. The location(s) shall be clearly marked "Pesticide Storage." These location(s) shall be reported to the Pest Control Manager. The supervisor responsible for storing pesticides shall also be responsible for reporting pesticide storage locations.

3. Pesticide storage areas shall be kept orderly and clean.

F. Safety Considerations

1. All pesticides shall be used in strict compliance with label requirements.

2. If a pesticide is to be applied in an area accessible to the public, reasonable efforts shall be made to exclude the public from the area

during application and for any additional time if required by the label.

3. In the event of a pesticide spill of one or more pounds (approximately 1 pint), notify the Environmental Health Department of San Joaquin County.

   Also, notify the Hazardous Materials Unit of the Stockton Fire Department immediately in case of a pesticide spill into the City's wastewater system, storm drain, or any waterway. In the case of any spill of 5 gallons or more, attempt to contain any spill by diking or other means.

4. In the event of a pesticide spill resulting in any injury or illness to an employee, or member of the public, ensure that the injured party is taken to the designated primary care provider. The current primary care provider is Dameron Hospital. The name and location of the primary care provider shall be posted at each designated fill site. Notification of the employee's supervisor and the City Pest Control Manager shall be made immediately.

5. Employees will be instructed by their supervisor in proper chemical handling and encouraged to read the MSDS.

G. Mixing and Loading Pesticides

1. Before mixing or loading pesticides, read the label requirements.

2. Before mixing and loading, put on the protective clothing and equipment required by the label or MSDS.

3. If possible, do not mix or load pesticides alone, at night, or in poorly illuminated conditions.

4. Keep unprotected people and animals out of the mixing and loading area.

5. Mix and load pesticides outdoors, if possible. If indoors, make sure the area is well ventilated and has good lighting.

6. When taking a pesticide out of the container, keep the container and pesticide below eye level.

7. When mixing pesticides, measure carefully to avoid exceeding

allowable concentrations. Mix only the amount you plan to use.

8. When loading pesticides, stand so that any breeze blows across your body to avoid contaminating yourself.

9. To prevent spills, immediately close containers after use.

10. Supervisor shall designate a site that meets the requirements of a designated pesticide loading site.

H. Applications of Pesticides

1. Before applying any pesticide, read the label and comply with special application requirements.

2. Wear the correct protective clothing and equipment.

3. To prevent spillage of pesticides, check all application equipment for leaking hoses, pumps or connections; and check for plugged, worn or dripping nozzles and fittings.

4. Before starting application, clear all people from the area to be treated.

5. All drift from the application shall be controlled. Do not apply pesticides if the wind exceeds approximately 7 mph (more than a light breeze).

6. All pesticide application equipment shall be cleaned after use and stored in a designated area.

I. Disposal of Pesticides

1. Disposal of concentrated or diluted pesticides is a last resort. Concentrated pesticides should be kept until used. If the department cannot use a pesticide for its intended purpose, an attempt must be made to return it to the supplier. If a pesticide must be disposed, contact the San Joaquin County Agricultural Department.

2. If you have excess pesticides after an assigned application is complete, contact your supervisor to find another location to put the pesticide to beneficial use.

CITY OF STOCKTON, CALIFORNIA
CITY MANAGER ADMINISTRATIVE DIRECTIVE

SUBJECT:	DIRECTIVE NO. P&R–003	PAGE
PESTICIDES, HERBICIDES, & FERTILIZERS	EFFECTIVE DATE: 5/17/96	1 of 2

I. BACKGROUND

Federal regulations [*40 CFR 122.26(d)(2)(iv)(A)(6)*] require the City to prepare procedures to regulate and control the application of pesticides, herbicides and fertilizers by commercial applicators and distributors in public rights-of-way and at municipal facilities. Furthermore, the Storm Water NPDES Permit requires the City to continue its existing program to control pesticide, herbicide, and fertilizer applications, and to designate a Pest Control Manager and coordinate these applications with the San Joaquin County Office of the Agricultural Commissioner. The Office of the Agricultural Commissioner is responsible for the implementation and enforcement of all Federal, State, and County regulations pertaining to pesticides and their use, storage, disposal, environmental impacts, and effects on the health and safety of pesticide users and the general public.

It is the intent of this administrative directive to allow individual City departments to continue their current use of pesticides, herbicides and fertilizers, and, at the same time, bring these individual programs under an umbrella of a coordinated City review and reporting program.

II. PURPOSE

To establish standard procedures for the administration and use of pesticides, herbicides, and fertilizers on City rights-of way, and other City-owned facilities.

III. POLICY

A. The Director of the Parks and Recreation Department will designate a staff member as City Pest Control Manager.

B. It is the responsibility of each department using regulated pesticides, herbicides, and/or fertilizers to insure that employees and/or contractors comply with all applicable State and Federal regulations for the use and application of such products.

C. In accordance with this policy, it shall be the responsibility of each department using regulated pesticides, herbicides, and/or fertilizers to insure that application is performed according to label directions and to provide a report by July fifteenth (15) of each year to the City Pest Control Manager defining the intended use of these products and the location of application.

SUBJECT:	DIRECTIVE NO. P&R–003	PAGE
PESTICIDES, HERBICIDES, & FERTILIZERS	EFFECTIVE DATE: 5/17/96	2 of 2

D. Furthermore, it shall be the responsibility of the City Pest Control Manager :

1. To insure that all required State and Federal reports have been completed and filed by the respective departments that use regulated pesticides an/d or herbicides.

2. To develop a report by August first of each year describing the City pesticide, herbicide, and fertilizer control program.

3. To coordinate the City's program with the San Joaquin County Office of the Agricultural Commissioner.

CITY OF STOCKTON
REGIONAL WASTEWATER CONTROL FACILITY
STANDARD OPERATING PROCEDURES

GENERAL PROCEDURES

SOP G-5A CHEMICAL HAND SPRAYING

Step Sequence	Information and Details

NOTE: Some chemicals require application by a "Certified Applicator" only! Be aware of any requirements before using any chemical.

1. **Identify the Chemical:**

Be sure that you are qualified to use the chemical. Research all chemical data and procedures before using.	Read the chemical M.S.D.S first. Read the label on the chemical container. **By law,** the chemical is to be applied only as directed on the label. Read and follow all safety instructions. **By law,** all safety instructions on the chemical label must be followed.

2. **Check all Safety Equipment:**

Gloves, face shield, chemical suit, respirator, rubber boots and hat	**By law,** you must use gloves. Check for holes or cracks. **By law,** you must use a face shield. Check to make sure it is clean and operable. **By law,** you must use a chemical suit if required. Check the suit for cracks or leaks. **By law,** you must use a respirator if required. Check to make sure it is clean and operable. **Always use,** rubber boots and a hat. Make sure neither leak.

3. **Check the Chemical Sprayer:**

After donning the safety equipment check the chemical sprayer.	Check the spray tip to make sure it is clear and clean.

GENERAL PROCEDURES

SOP G-5A CHEMICAL HAND SPRAYING

Step Sequence	Information and Details
	Check all hoses for leaks, make sure there are not any kinks.
	Check the spray tank, make sure that it is clean, **do not mix chemicals.** Some chemicals can react violently when mixed. **SAFETY FIRST!**
4. **Mixing Chemicals:**	
Follow all mixing instructions.	Use a clear area to mix the chemicals. Never mix more chemical than you can use. **Any chemicals that are not used are considered hazardous waste.**
5. **Chemical Spraying:**	
Be sure to properly use all safety equipment while spraying.	Always spray chemical with the wind to your back. **Do not apply chemical if wind exceeds 7 m.p.h..** The chemical drift can endanger personnel, the environment and the treatment process. Work the chemical spray away from the direction you are moving. Do not walk through chemical spray. **Do not spray in areas where other personnel are working.**
6. **Equipment Cleaning:**	
Be sure to use all safety equipment when cleaning spray equipment. Follow all directions before storing the equipment in the proper location.	Flush the spray equipment at the application site. You are within the law if you flush the equipment where you have sprayed.
	Flush the spray tank **three (3) times** to ensure that all chemical has been removed.
	Flush the hose and spray tip with approximately **1 quart** of water.
	Wash the outside of the spray tank, hoses and tip.

Step Sequence	Information and Details
7. **Safety Equipment Cleaning:**	
Follow all directions before storing safety equipment in proper location.	Wash off the outside of gloves with soap and water. Wash the face shield with soap and water. Wash the respirator with soap and water, dry and disinfect it. Wash boots, chemical suit and hat if used.
8. **Personal Hygiene:**	
Once the fogging is completed and all equipment has been cleaned the person(s) applying the chemical must clean themselves.	Wash your hands and face with **soap and water.** It is recommended that you take a shower. **Note: Hair readily absorbs gas, fog and smoke. You can get contaminated through your hair.** Be sure to change your uniform. Mark and tag the uniform **"Pesticide"** before sending it out to be cleaned.
9. **Completely fill out a Cold Fogging / Spraying Report form:**	
This must be done each time you fog.	Retrieve and fill out this form completely. Be sure to include what chemical was used, the fogging location and how much chemical was used. Rev. 6/97

CITY OF STOCKTON
REGIONAL WASTEWATER CONTROL FACILITY
STANDARD OPERATING PROCEDURES

GENERAL PROCEDURES

SOP G-4 - CHEMICAL FOGGING

Step Sequence	Information and Details

NOTE: ONLY CERTIFIED APPLICATORS ARE ALLOWED TO COLD FOG

1. **Know the chemical you are using:**

Only trained and authorized personnel are allowed to use chemicals.	Make sure you are fully trained to use the chemical. **Read the M.S.D.S.** for the chemical you are using. **Read the label** of the chemical you are using. Be sure to follow all safety directions. **By law, the chemical is to be applied only as directed on the label. By law, all safety directions listed on the label must be followed.**

2. **Notification:**

All affected personnel must be notified before fogging.	Notify any divisions, vendors and any other affected personnel when and where the fogging will be taking place. The optimum time to perform fogging is between 1800 and 0600 hours. Fewer people are likely to be in the area during these hours.

3. **Check your equipment:**

By law, most items are required to be checked before using.	Check all safety equipment. **By law,** wear rubber gloves, check for cracks or holes. **By law,** wear a face shield, check for cracks and cleanliness. **By law** wear a chemical suit (or other approved clothing), check for cracks or leaks. Most chemicals require the use of a respirator. Check respirator for operation and cleanliness. Wear rubber boots to protect feet. Wear head protection. Check filters, make sure they are clear and clean. Check hoses and fittings for leaks.

GENERAL PROCEDURES

SOP G-4 - CHEMICAL FOGGING

Step	Sequence	Information and Details
4.	**Inspect the fogger after donning safety equipment.**	**Check the fogger tank. Make sure it is clean.** **Some chemicals can have a violent reaction when mixed. SAFETY FIRST!** Insure that all electrical components are working properly.
5.	**Prepare to mix chemicals:**	
	Always read the mixing instructions on the label.	Use a clear area to mix your chemicals. **Mix only what you will use.** Any chemicals not used are hazardous waste and must be treated as such.
6.	**Fogging:**	
	With safety equipment properly on, you are ready to fog.	When fogging, always keep the wind to your back. **IF THE WIND IS MORE THAN 8 M.P.H. DO NOT FOG!** The drift can endanger other personnel, vegetation or the treatment process. Work the chemical fog away from the direction in which you are moving. **DO NOT TRAVEL FASTER THAN 3 TO 5 M.P.H. AND DO NOT DRIVE THROUGH THE CHEMICAL FOG.** Never fog in areas where other personnel is working.
7.	**Fogging equipment clean up:**	
	When fogging is completed, immediately clean all equipment.	Wait for the **engine to cool down** before hosing. Then, with all **safety equipment** still on, hose off the fogger and the truck used to pull it. Remember that any unused chemical is considered hazardous waste. Always flush out

GENERAL PROCEDURES

SOP G-4 - CHEMICAL FOGGING

Step Sequence	Information and Details
	the fogger at the application site. **If you flush the equipment where you have fogged, you are within the law.**
8. **Safety equipment clean up:**	
All safety equipment must be cleaned after each use.	Wash outside of gloves with **soap and water.** If the inside of your gloves have become contaminated discard them and get a new pair. Wash the face shield with **soap and water.** Clean the respirator with **soap and water, then dry and clean it with disinfectant.** Store all safety equipment in proper areas.
9. **Personal Hygiene:**	
Once the fogging is completed and all equipment has been cleaned the person(s) applying the chemical must clean themselves.	Wash your hands and face with **soap and water.** It is recommended that you take a shower. **Note: Hair readily absorbs gas, fog and smoke. You can get contaminated through your hair.** Be sure to change your uniform. Mark and tag the uniform **"Pesticide"** before sending it out to be cleaned.
10. **Completely fill out a Cold Fogging / Spraying Report form:**	
This must be done each time you fog.	Retrieve and fill out this form completely. Be sure to include what chemical was used, the fogging location and how much chemical was used. Rev. 6/97

CITY OF STOCKTON
REGIONAL WASTEWATER CONTROL FACILITY
STANDARD OPERATING PROCEDURES

GENERAL PROCEDURES

SOP G-5 - REQUESTING MIDGE FLY FOGGING

Step Sequence	Information and Details

NOTE: ONLY CERTIFIED APPLICATORS ARE ALLOWED TO COLD FOG

The Current Fogging Contract is with Clark Pest Control

1. **Daily Midge Fly Counts**

   Adult midge fly counts are performed daily at eight stations located at the Tertiary Facility and one station located at the Main Plant Facility. The locations are indicated on the "Midge Light Location" map.

2. **Requests for Fogging**

   The midge fly count will be reviewed by the on duty, day-shift Sr. Operator daily. A request for fogging should be placed with the contracted vendor when any two midge light stations record 3,000 or more midge flies. **The on duty Main Plant, day-shift Sr. Operator, is responsible for reporting any counts of 3,000 or more from the Main Plant Midge Light Station, to the Tertiary Facility Sr. Operator.** After determining that midge fly fogging is required, complete the "Pest Sighting Log" in the Clark Pest Control Hand Book. **Note: A Clark Pest Control Hand Book will be kept at the Main Plant's, Sr. Operator desk and at the Tertiary Facility's, Sr. Operator desk.**

   Contact the contracted vendor and place a request for fogging. **Note: For Clark Pest Control, use the list of phone numbers located on the last page of the hand book.** When placing the request, identify the midge light stations which recorded the high midge fly counts.

GENERAL PROCEDURES

SOP G-5 - REQUESTING MIDGE FLY FOGGING

Step	Sequence	Information and Details
3.	**Staff Notification and Documentation**	Document the request for fogging in the daily log when it has been confirmed with the contracted vendor. Include the estimated time of arrival by the certified applicator. **Note: Optimal fogging times are between 1800 and 0600.** Notify the Main Plant Sr. Operators, Tertiary Facility Sr. Operators, Sr. Operations Supervisor and Operations Supervisors via E-mail that the fogging request has been made and confirmed. Include the date and time that the fogging will take place.
4.	**Fogging**	The certified applicator will phone the on duty Sr. Operator before reporting to the facility and request a wind speed estimate. The certified applicator will notify the on duty Sr. Plant Operator before beginning the actual fogging operation. The on duty Sr. operator will log (include the time) that the certified applicator is on sight and will be performing midge fly fogging. **All MUD personnel are to remain indoors while midge fly fogging takes place in their areas.** Once the certified applicator has completed the midge fly fogging he or she will report to the Sr. Operator and complete the Space Treatment Application log in the Clark Pest Control Hand Book. The Sr. Operator will document that the midge fly fogging has been completed in the daily log. Include the time of completion.

MEMORANDUM

June 12, 1998

TO: Ron Penix, Senior Public Works Supervisor/Streets
Mark Rushing, Public Works Supervisor
Bill Viglienzone, Senior Maintenance Worker/AWP
Mike McNeily, Senior Maintenance Worker/AWP

FROM: James Escobar, Deputy Public Works Director/O&M

SUBJECT: **APPLICATION OF PESTICIDES, HERBICIDES, & FERTILIZERS**

Attached is a copy of the City's Policy, Directive No. P&R 003, for the application of the subject material. Please ensure you are following these procedures and reporting requirements.

Mr. Viglienzone has the appropriate applicators license and has been reporting usage to the City's Pest Control Manager. In the past this was Scott Essin, responsibility has been passed on to Nicole Truszkowski, Parks Superintendent. **Note:** usage report is required even for months when no material is applied. Our records indicate we have not been reporting non-usage months.

If you have any questions regarding the attached policy please let me know.

JAMES ESCOBAR
DEPUTY PUBLIC WORKS DIRECTOR/O&M

JE

Attachment

emc: James B. Giottonini, Public Works Director (w/o att)
Nicole Truszkowski, Parks Superintendent (w/o att)

ESTABLISHED 1-18-96
AMENDED
RES. NO. 96-138

City of Stockton

ARBORIST

DEFINITION

Under direction, plans, organizes and supervises an integrated pest management and disease control program; performs inspections of trees and research in tree insect/disease control; participates in the administration of related tree services activities.

CLASS CHARACTERISTICS

Receives direction from the Parks Superintendent. Responsibilities include planning for new tree installations, implementation of the City's tree ordinance and integrated pest management program. Acts as City-wide manager for pest control procedures and implements pest control procedures. This position is distinguished from the Parks Superintendent which is a division head responsible for the park, golf course and tree management programs.

PRINCIPLE DUTIES (Illustrative Only)

1. Plans, organizes and supervises the operational phase of the street and park trees integrated insect/disease control program.
2. Assists in identification of tree insects/diseases; and in the selection of appropriate treatment methods.
3. Inspects street and park trees to determine required maintenance.
4. Requisitions and maintains records of materials, supplies and equipment.
5. Coordinates, monitors and directs the tree inventory; ensures that appropriate records are maintained and updated according to division needs.
6. Contacts vendors, contractors and other public agencies to provide and receive technical information.
7. Tests and evaluates new species of trees for planting; orders and makes arrangements for delivery of trees.
8. Prepares the section budget; assists in budget implementation; participates in the forecasting of additional funds needed for staffing, equipment, materials and supplies; administers the approved budget.
9. Answers questions and provides information to the public; investigates complaints and recommends corrective action as necessary to resolve complaints.
10. Plans, prioritizes, assigns, supervises and reviews the work of staff involved in division.
11. Recommends and assists in the implementation of goals and objectives; establishes schedules and methods for the section; implements policies and procedures.
12. Conducts investigations involving risk management, vandalism, accidents, involving damage to trees; prepares necessary reports.
13. Inspects trees for possible hazards due to age and species.
14. Initiates removal requests from property owners and for tree permit requests; inspects encroachment permits affecting trees.

15. Implements City tree policies and ordinances and after a period of observation, recommends revisions where necessary.

16. Directs tree planting in the subdivision and commercial areas. Develops and maintains a tree master plan; designates species for each street according to environments and needs of each tree in cooperation with the Parks Facility Planner.

17. Oversees the Pesticide/Herbicide/Fertilizer portion of the City of Stockton NPDES Storm Water Management Program.

QUALIFICATIONS

Knowledge of:

Chemical and biological measures used in tree insect/disease control work.
Soils and fertilizers.
Dendrology and plant physiology.
Standard practices, equipment and tools used in tree maintenance work.
Safety codes applied to tree work.
Methods of biological research.
Tree pathology, diagnostic tools, fungicides and spray and injection equipment.
Horticulture, botany and Urban Forestry.
Principles and practices of supervision, training and personnel management.

Skill in:

Providing technical advice and assistance on problems relating to street and park tree preservation and protection.

Supervising, training and evaluating assigned staff.

Maintaining records and preparing reports.

Preparing budgetary estimates for project activities.

Controlling pest and diseases and setting up and evaluating experimental or trial use of products.

Communicating clearly and concisely, both orally and in writing.

Establishing and maintaining cooperative working relationships with those contacted in the course of work.

Other Requirements:

Must possess a valid California Class C driver's license.
Must possess, or have the ability to obtain, a valid California pesticide advisor's license within six (6) months of appointment.
Must possess or have the ability to obtain, within one (1) year of employment, a qualified arborist certificate as coordinated by the International Society of Arboriculture.

A typical way of gaining the knowledge and skills outlined above is:

A Bachelors's degree from an accredited college or university with major coursework in arboriculture, entomology, plant pathology, horticulture, urban forestry or a related field and one year of responsible tree insect/disease control experience.

APPENDIX
BMP-B 2.1

I.D.	NAME	LOCATION	TYPE	ACRES	IND-AC	PIFS - Ba	USE Score	PIF Score	Total Score - Basin
DC-65	Duck Creek 65	Western Pacific Industrial Park	Pump	594	295	14	2	3	5
MM-150	Mormon Slough 150	Commerce St. & Mormon Slough	Gravity	908	88	39	4	1	5
DW-123	Deep Water Channel 123	Miner Ave. & Deep Water Channel	Gravity	850	75	51	4	1	5
MM-142	Mormon Slough 142	Lafayette St. & Mormon Slough	Gravity	293	48	12	3	3	6
CR-46	Calaveras River 46	West Ln. & Calaveras River (South)	Pump	100	41	6	2	4	6
DC-165	Duck Creek 165	Union Pacific & Duck Creek	Gravity	516	288	2	1	5	6
DW-108	Deep Water Channel 108	Wilshire Ave. & Deep Water Channel	Gravity	17	17	1	1	5	6
SC-57	Smiths Canal 57	Legion Park & Smiths Canal	Pump	1605	13	25	5	1	6
SJ-60	San Joaquin River 60	Highway 4 & San Joaquin River	Pump	140	0	33	5	1	6
WK-64	Walker Slough 64	Turnpike Rd. & Walker Slough	Pump	1312	0	30	5	1	6
DW-117	Deep Water Channel 117	Madison St. & Deep Water Channel	Gravity	3	1	1	2	5	7
MM-147	Mormon Slough 147	Hazelton Ave. & Mormon Slough	Gravity	153	12	8	4	4	8
LJ-81	Little John Creek 81	Arch Road Industrial Park	Pump	180	0	12	5	3	8
MM-145	Mormon Slough 145	Sonora St. & Mormon Slough	Gravity	22	4	1	3	5	8
LJ-80	Little John Creek 80	Stockton Airport Business Park	Pump	272	13	11	5	3	8
DC-69	Duck Creek 69	Stagecoach Rd. & Duck Creek	Pump	162	0	10	5	4	9
DW-121	Deep Water Channel 121	Commerce St. & Deep Water Channel	Gravity	48	6	0	4	5	9
DW-112	Deep Water Channel 112	Yosemite St. & Deep Water Channel	Gravity	90	3	8	5	4	9
MM-141	Mormon Slough 141	Weber Ave. & Mormon Slough	Gravity	13	2	3	4	5	9
MM-144	Mormon Slough 144	Sonora St. & Mormon Slough	Gravity	9	1	0	4	5	9
CR-43	Calaveras River 43	West Ln. & Calaveras River (North)	Pump	445	25	1	4	5	9
DW-126	Deep Water Channel 126	Center St. & Deep Water Channel	Gravity	13	2	1	4	5	9
SJ-61	San Joaquin River 61	Eighth St. & San Joaquin River	Pump	670	91	1	4	5	9
MM-159	Mormon Slough 159	David Ave. & Mormon Slough	Gravity	366	48	4	4	5	9
SC-56	Smiths Canal 56	Buena Vista Ave. & Smiths Canal	Pump	508	7	8	5	4	9
MS-20	Mosher Slough 20	Cherbourg Way & Mosher Slough	Pump	1190	0	8	5	4	9
DC-167	Duck Creek 167	13th St. & Duck Creek	Gravity	31	0	0	5	5	10
14-35	14 Mile Slough 35	Ft. Donelson Dr. & 14 Mile Slough	Pump	652	0	2	5	5	10
14-36	14 Mile Slough 36	I-5 & 14 Mile Slough	Pump	39	0	0	5	5	10

APPENDIX
BMP-B 4.1

ENVIRONMENTAL

ANALYTICAL CHEMISTS

April 30, 1998

LAB No: STK 831860-1

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton , CA 95206

RE: Inorganic Analysis

Sample Site: City Corp, Yard Storm Waste
Description: C. STK Corp. Yard #1
Sampled by : Jay Holman
Type of Sample: Surface Water

Sampled : April 13, 1998
Received : April 13, 1998
Completed : April 15, 1998
QA/QC ID# : 83186001-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Oil and Grease	5520B	mg/L	3	8

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Preservatives: (1) Cool 4°C (2) H2SO4 pH < 2 Containers: (a) Glass

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:kdm

Corporate Offices & Laboratory
PO Box 272 / 853 Corporation Street
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FAX: 805/525-4172

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TEL: 209/942-0181
FAX: 209/942-0423

Field Office
Visalia, CA
TEL: 209/734-9473
FAX: 209/734-8435
Mobile: 209/737-2399

ENVIRONMENTAL

ANALYTICAL CHEMISTS

April 30, 1998

LAB No: STK 831860-2

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton , CA 95206

RE: Inorganic Analysis

Sample Site: City Corp, Yard Storm Waste
Description: C. STK Corp. Yard #1
Sampled by : Jay Holman
Type of Sample: Surface Water

Sampled : March 31, 1998
Received : April 13, 1998
Completed : April 13, 1998
QA/QC ID# : 83186002-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Conductivity	2510B	umhos/cm	1	40
pH	4500-H B	units	---	6.5
Solids, Suspended	2540D	mg/L	10	ND

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Preservatives: (1) Cool 4°C Containers: (a) Plastic

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:kdm

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ENVIRONMENTAL

ANALYTICAL CHEMISTS

April 30, 1998

LAB No: STK 831860-3

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton , CA 95206

RE: Inorganic Analysis

Sample Site: City Corp, Yard Storm Waste
Description: C. STK Corp. Yard #2
Sampled by : Jay Holman
Type of Sample: Surface Water

Sampled : April 13, 1998
Received : April 13, 1998
Completed : April 15, 1998
QA/QC ID# : 83186003-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Oil and Grease	5520B	mg/L	3	4

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Preservatives: (1) Cool 4°C Containers: (a) Glass

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:kdm

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ENVIRONMENTAL

ANALYTICAL CHEMISTS

April 30, 1998

LAB No: STK 831860-4

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton , CA 95206

RE: Inorganic Analysis

Sample Site: City Corp, Yard Storm Waste
Description: C. STK Corp. Yard #2
Sampled by : Jay Holman
Type of Sample: Surface Water

Sampled : March 31, 1998
Received : April 13, 1998
Completed : April 13, 1998
QA/QC ID# : 83186004-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Conductivity	2510B	umhos/cm	1	52
pH	4500-H B	units	---	6.3
Solids, Suspended	2540D	mg/L	10	50

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Preservatives: (1) Cool 4°C Containers: (a) Plastic

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:kdm

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FGL ENVIRONMENTAL

Analytical Chemists

April 30, 1998

INORGANIC Quality Assurance Report for sample: 831860

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton , CA 95206

Constituent	BATCH ID	Method	Units	BLANK QA/QC DLR	BLANK QA/QC Result	BLANK QA/QC NOTE	CALIBRATION QA/QC Type	CALIBRATION QA/QC Conc.	CALIBRATION QA/QC % REC	CALIBRATION QA/QC AR	CALIBRATION QA/QC NOTE	METHOD QA/QC Type	METHOD QA/QC Conc.	METHOD QA/QC % REC	METHOD QA/QC % REC	METHOD QA/QC AR	METHOD QA/QC % DIF	METHOD QA/QC MAV	METHOD QA/QC NOTE
Conductivity	1A 2B	2510B	umhos/c2	1.0	0.6		CCV	995	98.7	95-105		Dup	1770	N/A	N/A	N/A	0.2	1.3	
Oil and Grease	2A 2A	5520B	mg/L	3.0	0.6		LCS	25.0	94.4	81-113		BS	25.0	94.4	90.4	83-113	4.2	17.8	
pH	0A 3A	4500-H B	units		N/A		CCV	7.00	100	95-105		Dup	6.50	N/A	N/A	N/A	0.0	2.9	
Solids, Suspended	1A 2A	2540D	mg/L	10	ND		LCS	501	97.8	82-109		Dup	20.0	N/A	N/A	N/A	10.0	46.1	

FGL ID = 19980413 ND => Not Detected at ar above DLR. DLR => Detection Limit for Reporting purposes. N/A => Not Applicable NOTE => See note indicated below.

FGL ENVIRONMENTAL, INC.

KW:kdm

Kurt Wilkinson, B.S., QA Director

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FAX: (209) 734-8435

ENVIRONMENTAL

ANALYTICAL CHEMISTS

June 9, 1998

LAB No: STK 832696-1

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton, CA 95206

RE: Inorganic Analysis

Sample Site: City Corp. Yard Storm Water
Description: South West Drain
Sampled by : Phil Bornside
Type of Sample: Surface Water

Sampled : May 28, 1998
Received : May 28, 1998
Completed : May 28, 1998
QA/QC ID# : 83269601-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Conductivity	2510B	umhos/cm	1	250
pH	4500-H B	units	---	7.4
Solids, Suspended	2540D	mg/L	14♦	400

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Containers: (a) Plastic

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:cea

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ENVIRONMENTAL

ANALYTICAL CHEMISTS

June 9, 1998

LAB No: STK 832696-2

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton, CA 95206

RE: Inorganic Analysis

Sample Site: City Corp. Yard Storm Water
Description: Front Off. N.E. S.D.
Sampled by : Phil Bornside
Type of Sample: Surface Water

Sampled : May 28, 1998
Received : May 28, 1998
Completed : May 28, 1998
QA/QC ID# : 83269602-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Conductivity	2510B	umhos/cm	1	200
pH	4500-H B	units	---	7.3
Solids, Suspended	2540D	mg/L	10	70

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Containers: (a) Plastic

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:cea

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ENVIRONMENTAL

Analytical Chemists

June 9, 1998

INORGANIC Quality Assurance Report for sample: 832696

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton, CA 95206

Constituent	BATCH ID	Method	Units	BLANK QA/QC DLR	BLANK QA/QC Result	BLANK QA/QC NOTE	CALIBRATION QA/QC Type	CALIBRATION QA/QC Conc.	CALIBRATION QA/QC % REC	CALIBRATION QA/QC AR	CALIBRATION QA/QC NOTE	METHOD QA/QC Type	METHOD QA/QC Conc.	METHOD QA/QC % REC	METHOD QA/QC % REC	METHOD QA/QC AR	METHOD QA/QC % DIF	METHOD QA/QC MAV	METHOD QA/QC NOTE
Conductivity	5A 2B	2510B	umhos/c2	1.0	ND		CCV	1000	102	95-105		Dup	4410	N/A	N/A	N/A	0.0	1.3	
pH	0A 3A	4500-H B	units		N/A		CCV	7.00	100	95-105		Dup	7.35	N/A	N/A	N/A	1.4	2.9	
Solids, Suspended	5A 2A	2540D	mg/L	10	ND		LCS	502	94.8	82-109		Dup	5.00	N/A	N/A	N/A	40.0	20.0	405

FGL ID = 19980528 ND => Not Detected at ar above DLR. DLR => Detection Limit for Reporting purposes. N/A => Not Applicable NOTE => See note indicated below.

Notes:
405 Relative Percent Difference (RPD) not within the Maximum Allowable Value (MAV) because of low analyte concentration in the sample. Data was accepted based on the LCS or CCV recovery.

FGL ENVIRONMENTAL, INC.

KW:cea

Kurt Wilkinson, B.S., QA Director

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State of California
State Water Resources Control Board

1997-1998

ANNUAL REPORT

FOR
STORM WATER DISCHARGES ASSOCIATED
WITH INDUSTRIAL ACTIVITIES

Reporting Period July 1, 1997 through June 30, 1998

An annual report is required to be submitted to your local Regional Water Quality Control Board (Regional Board) by July 1 of each year. This document must be certified and signed, under penalty of perjury, by the appropriate official of your company. Many of the Annual Report questions require an explanation. Please provide explanations on a separate sheet as an attachment. **Retain a copy of the completed Annual Report for your records.**

If any information contained in Items A, B, and C below is incorrect, please cross out or highlight the incorrect information (do not white out or erase) and provide the correct information next to or above the incorrect information.

If you have any questions, please contact your Regional Board Storm Water Program Contact. The address of your Regional Board (where the Annual Report must be filed) along with the name and telephone number of the contact person is indicated below.

REGIONAL BOARD INFORMATION:

CENTRAL VALLEY REGIONAL WATER BOARD
3443 ROUTIER RD., SUITE A
SACRAMENTO, CA 95827-3098

GREG VAUGHN
(916) 255-3142

GENERAL INFORMATION

A. Facility WDID NO: 5S39S013358

B. Facility Operator Information:

CITY OF STOCKTON
1465 S LINCOLN STREET
STOCKTON, CA 95206

Contact Person: JAY HOLMAN
Phone: (209) 937-7416

C. Facility Information:

MUNICIPAL SERVICE CENTER
1465 S LINCOLN STREET
STOCKTON, CA 95206

Contact Person: JAY HOLMAN (209) 937-7416

SIC Code(s):

4213 Trucking, Except Local

ANNUAL REPORT

SPECIFIC INFORMATION

MONITORING AND REPORTING PROGRAM

D. SAMPLING AND ANALYSIS EXEMPTIONS AND REDUCTIONS

1. For the reporting period, was your facility exempt from collecting and analyzing samples from **two** storm events in accordance with sections B.12 or 15 of the General Permit?

☒ **YES** Go to Item D.2 ☒ **NO** Go to Section E

2. Indicate the reason your facility is exempt from collecting and analyzing samples from **two** storm events. Attach a copy of the first page of the appropriate certification if you check boxes ii, iii, iv, or v.

i. ☐ Participating in an Approved Group Monitoring Plan **Group Name:** _____

ii. ☐ Submitted **No Exposure Certification (NEC)** Date Submitted: __/__/__

Re-evaluation Date: __/__/__

Does facility continue to satisfy NEC conditions? ☐ YES ☐ NO

iii. ☐ Submitted **Sampling Reduction Certification (SRC)** Date Submitted: __/__/__

Re-evaluation Date: __/__/__

Does facility continue to satisfy SRC conditions? ☐ YES ☐ NO

iv. ☐ Received Regional Board Certification Certification Date: __/__/__

v. ☐ Received Local Agency Certification Cetification Date: __/__/__

3. If you checked boxes i or iii above, were you scheduled to sample **one** storm event during the reporting year?

☐ **YES** Go to Section E ☐ **NO** Go to Section F

E. SAMPLING AND ANALYSIS RESULTS

1. How many storm events did you sample? 2 If less than 2, **attach explanation** (if you checked item D.2.i or iii. above, only attach explanation if you answer "0").

2. Did you collect storm water samples from the first storm of the wet season that produced a discharge during scheduled facility operating hours? (Section B.5 of the General Permit)

☐ **YES** ☒ **NO** **Attach explanation**

3. How many storm water discharge locations are at your facility? 2

4. For each storm event sampled, did you collect and analyze a sample from each of the facilitys' storm water discharge locations? ☒ YES, go to Item E.6 ☐ NO

5. Was sample collection or analysis reduced in accordance with Section B.7.d of the General Permit? ☐ YES ☒ NO, attach explanation

   If "YES", attach **documentation** supporting your determination that two or more drainage areas are substantially identical.

   Date facility's drainage areas were last evaluated __/__/__

6. Were all samples collected during the first hour of discharge? ☒ YES ☐ NO, attach explanation

7. Was all storm water sampling preceded by three (3) working days without a storm water discharge? ☒ YES ☐ NO, attach explanation

8. Were there any discharges of stormwater that had been temporarily stored or contained? (such as from a pond) ☐ YES ☒ NO, go to Item E.10

9. Did you collect and analyze samples of temporarily stored or contained storm water discharges from two storm events? (or one storm event if you checked item D.2.i or iii. above) ☐ YES ☒ NO, attach explanation

10. Section B.5. of the General Permit requires you to analyze storm water samples for pH, Total Suspended Solids (TSS), Specific Conductance (SC), Total Organic Carbon (TOC) or Oil and Grease (O&G), other pollutants likely to be present in storm water discharges in significant quantities, and analytical parameters listed in Table D of the General Permit.

    a. Is your facility required to analyze additional parameters listed in Table D of the General Permit? ☐ YES ☒ NO, Go to Item E.11

    b. Did you analyze all storm water samples for the applicable parameters listed in Table D? ☐ YES ☐ NO

    c. If you did not analyze all storm water samples for the applicable Table D parameters, check one of the following reasons:

    ____ The parameter has not been detected in significant quantities from the last two consecutive sampling events. **Attach explanation**

    ____ The parameter is not likely to be present in storm water discharges and authorized non-storm water discharges in significant quantities based upon the facility operator's evaluation. **Attach explanation**

    ____ Other. **Attach explanation**

11. For each storm event sampled, attach a copy of the laboratory analytical reports and report the sampling and analysis results using **Form 1** or its equivalent. The following must be provided for each sample collected:

- Date and time of sample collection
- Name and title of sampler.
- Parameters tested.
- Name of analytical testing laboratory.
- Discharge location identification.
- Testing results.
- Test methods used.
- Test detection limits.
- Date of testing.
- Copies of the laboratory analytical results.

F. QUARTERLY VISUAL OBSERVATIONS

1. **Authorized Non-Storm Water Discharges**
Section B.3.b of the General Permit requires quarterly visual observations of all authorized non-storm water discharges and their sources.

a. Do authorized non-storm water discharges occur at your facility?

☐ YES ☒ NO Go to Item F.2

b. Indicate whether you visually observed all authorized non-storm water discharges and their sources during the quarters when they were discharged. **Attach an explanation for any "NO" answers.** Indicate "N/A" for quarters without any authorized non-storm water discharges.

July -September	☐ YES	☐ NO	☐ N/A	October-December	☐ YES	☐ NO	☐ N/A
January-March	☐ YES	☐ NO	☐ N/A	April-June	☐ YES	☐ NO	☐ N/A

c. Use **Form 2** to report quarterly visual observations of authorized non-storm water discharges or provide the following information.

i. name of each authorized non-storm water discharge
ii. date and time of observation
iii. source and location of each authorized non-storm water discharge
iv. characteristics of the discharge at its source and impacted drainage area/discharge location
v. name, title, and signature of observer
vi. **any** new or revised BMPs necessary to reduce or prevent pollutants in authorized non-storm water discharges. Provide new or revised BMP implementation date.

2. **Unauthorized Non-Storm Water Discharges**
Section B.3.a of the General Permit requires quarterly visual observations of all drainage areas to detect the presence of unauthorized non-storm water discharges and their sources.

a. Indicate whether you visually observed all drainage areas to detect the presence of unauthorized non-storm water discharges and their sources. **Attach an explanation for any "NO" answers.**

July -September	☒ YES	☐ NO		October-December	☒ YES	☐ NO	
January-March	☒ YES	☐ NO		April-June	☒ YES	☐ NO	

b. Based upon the quarterly visual observations, were any unauthorized non-storm water discharges detected?

☐ YES ☒ NO Go to item F.2.d

c. Have each of the unauthorized non-storm water discharges been eliminated or permitted?

☐ YES ☐ NO **Attach explanation**

d. Use **Form 3** to report quarterly unauthorized non-storm water discharge visual observations or provide the following information.

i. name of each unauthorized non-storm water discharge.
ii. date and time of observation.
iii. source and location of each unauthorized non-storm water discharge.
iv. characteristics of the discharge at its source and impacted drainage area/discharge location.
v. name, title, and signature of observer.
vi. **any** corrective actions necessary to eliminate the source of each unauthorized non-storm water discharge and to clean impacted drainage areas. Provide date unauthorized non-storm water discharge(s) was eliminated or scheduled to be eliminated.

G. MONTHLY WET SEASON VISUAL OBSERVATIONS

Section B.4.a of the General Permit requires you to conduct monthly visual observations of storm water discharges at all storm water discharge locations during the wet season. These observations shall occur during the first hour of discharge or, in the case of temporarily stored or contained storm water, at the time of discharge.

1. Indicate below whether monthly visual observations of storm water discharges occurred at all discharge locations. **Attach an explanation for any "NO" answers.**

	YES	NO		YES	NO
October	☒	☐	February	☒	☐
November	☒	☐	March	☒	☐
December	☒	☐	April	☒	☐
January	☒	☐	May	☒	☐

2. Report monthly wet season visual observations using **Form 4** or provide the following information.

   a. date, time, and location of observation
   b. name and title of observer
   c. characteristics of the discharge (i.e., odor, color, etc.) and source of any pollutants observed.
   d. **any** new or revised BMPs necessary to reduce or prevent pollutants in storm water discharges. Provide new or revised BMP implementation date.

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION (ACSCE)

H. ACSCE CHECKLIST

Section A.9 of the General Permit requires the facility operator to conduct one ACSCE in each reporting period (July 1-June 30). Evaluations must be conducted within 8-16 months of each other. The SWPPP and monitoring program shall be revised and implemented, as necessary, within 90 days of the evaluation. The checklist below includes the minimum steps necessary to complete a ACSCE. Indicate whether you have performed each step below. **Attach an explanation for any "NO" answers.**

1. Have you inspected all potential pollutant sources and industrial activities areas? ☒ YES ☐ NO
   The following areas should be inspected:

   - areas where spills and leaks have occured during the last year.
   - outdoor wash and rinse areas.
   - process/manufacturing areas.
   - loading, unloading, and transfer areas.
   - waste storage/disposal areas.
   - dust/particulate generating areas.
   - erosion areas.
   - building repair, remodeling, and construction
   - material storage areas
   - vehicle/equipment storage areas
   - truck parking and access areas
   - rooftop equipment areas
   - vehicle fueling/maintenance areas
   - non-storm water discharge generating areas

2. Have you reviewed your SWPPP to assure that its BMPs address existing potential pollutant sources and industrial activities areas? ☒ YES ☐ NO

3. Have you inspected the entire facility to verify that the SWPPP's site map, is up-to-date? The following site map items should be verified: ☒ YES ☐ NO

- facility boundaries
- outline of all storm water drainage areas
- areas impacted by run-on
- storm water discharges locations
- storm water collection and conveyance system
- structural control measures such as catch basins, berms, containment areas, oil/water separators, etc.

4. Have you reviewed all General Permit compliance records generated since the last annual evaluation? ☒ YES ☐ NO

The following records should be reviewed:

- quarterly authorized non-storm water discharge visual observations
- monthly storm water discharge visual observation
- records of spills/leaks and associated clean-up/response activities
- quarterly unauthorized non-storm water discharge visual observations
- Sampling and Analysis records
- preventative maintenance inspection and maintenance records

5. Have you reviewed the major elements of the SWPPP to assure compliance with the General Permit? ☒ YES ☐ NO

The following SWPPP items should be reviewed:

- pollution prevention team
- list of significant materials
- description of potential pollutant sources
- assessment of potential pollutant sources
- identification and description of the BMPs to be implemented for each potential pollutant source

6. Have you reviewed your SWPPP to assure that a) the BMPs are adequate in reducing or preventing pollutants in storm water discharges and authorized non-storm water discharges, and b) the BMPs are being implemented? ☒ YES ☐ NO

The following BMP categories should be reviewed:

- good housekeeping practices
- spill response
- employee training
- erosion control
- quality assurance
- preventative maintenance
- material handling and storage practices
- waste handling/storage
- structural BMPs

7. Has all material handling equipment and equipment needed to implement the SWPPP been inspected? ☒ YES ☐ NO

I. ACSCE EVALUATION REPORT

The facility operator is required to provide an evaluation report that includes:

- identification of personnel performing the evaluation
- the date(s) of the evaluation
- necessary SWPPP revisions
- schedule for implementing SWPPP revisions
- any incidents of non-compliance and the corrective actions taken.

Use **Form 5** to report the results of your evaluation or develop an equivalent form.

J. ACSCE CERTIFICATION

The facility operator is required to certify compliance with the Industrial Activities Storm Water General Permit. To certify compliance, both the SWPPP and Monitoring Program must be up to date and be fully implemented.

Based upon your ACSCE, do you certify compliance with the Industrial Activities Storm Water General Permit? ☒ YES ☐ NO

If you answered "NO" **attach an explanation** to the ACSCE Evaluation Report why you are not in compliance with the Industrial Activities Storm Water General Permit.

ATTACHMENT SUMMARY

Answer the questions below to help you determine what should be attached to this annual report. Answer NA (Not Applicable) to questions 2-4 if you are not required to provide those attachments.

1. Have you attached Forms 1,2,3,4, and 5 or their equivalent?	☒ YES (Mandatory)		
2. If you conducted sampling and analysis, have you attached the laboratory analytical reports?	☒ YES	☐ NO	☐ NA
3. If you checked box II, III, IV, or V in item D.2 of this Annual Report, have you attached the first page of the appropriate certifications?	☐ YES	☐ NO	☒ NA
4. Have you attached an explanation for each "NO" answer in items E.1, E.2, E.5-E.7, E.9, E.10.c, F.1.b, F.2.a, F.2.c, G.1, H.1-H.7, or J?	☒ YES	☐ NO	☐ NA

ANNUAL REPORT CERTIFICATION

I am duly authorized to sign reports required by the INDUSTRIAL ACTIVITIES STORM WATER GENERAL PERMIT (see Standard Provision C.9) and I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: Jay Holmes

Signature: _____ Date: 7-14-98

Title: Fleet manager

DESCRIPTION OF BASIC ANALYTICAL PARAMETERS

The Industrial Activities Storm Water General Permit (General Permit) requires you to analyze storm water samples for at least four parameters. These are pH, Total Suspended Solids (TSS), Specific Conductance (SC),and Total Organic Carbon (TOC). Oil and Grease (O&G) may be substituted for TOC. In addition, you must monitor for any other pollutants which you believe to be present in your storm water discharge as a result of industrial activity and analytical parameters listed in Table D of the General Permit. There are no numeric limitations for the parameters you test for.

The four parameters which the General Permit requires to be tested are considered *indicator* parameters. In other words, regardless of what type of facility you operate, these parameters are nonspecific and general enough to usually provide some indication whether pollutants are present in your storm water discharge. The following briefly explains what each of these parameters mean:

pH is a numeric measure of the hydrogen-ion concentration. The neutral, or acceptable, range is within 6.5 to 8.5. At values less than 6.5, the water is considered acidic; above 8.5 it is considered alkaline or basic. An example of an acidic substance is vinegar, and a alkaline or basic substance is liquid antacid. Pure rainfall tends to have a pH of a little less than 7. There may be sources of materials or industrial activities which could increase or decrease the pH of your storm water discharge. If the pH levels of your storm water discharge are high or low, you should conduct a thorough evaluation of all potential pollutant sources at your site.

Total Suspended Solids (TSS) is a measure of the undissolved solids that are present in your storm water discharge. Sources of TSS include sediment from erosion of exposed land, and dirt from impervious (i.e. paved) areas. Sediment by itself can be very toxic to aquatic life because it covers feeding and breeding grounds, and can smother organisms living on the bottom of a water body. Toxic chemicals and other pollutants also adhere to sediment particles. This provides a medium by which toxic or other pollutants end up in our water ways and ultimately in human and aquatic life. TSS levels vary in runoff from undisturbed land. It has been shown that TSS levels increase significantly due to land development.

Specific Conductance (SC) is a numerical expression of the ability of the water to carry an electric current. SC can be used to assess the degree of mineralization, salinity, or estimate the total dissolved solids concentration of a water sample. Because of air pollution, most rain water has a SC a little above zero. A high SC could affect the usability of waters for drinking, irrigation, and other commercial or industrial use.

Total Organic Carbon (TOC) is a measure of the total organic matter present in water. (All organic matter contains carbon) This test is sensitive and able to detect small concentrations of organic matter. Organic matter is naturally occurring in animals, plants, and man. Organic matter may also be man made (so called synthetic organics). Synthetic organics include pesticides, fuels, solvents, and paints. Natural organic matter utilizes the oxygen in a receiving water to biodegrade. Too much organic matter could place a significant oxygen demand on the water, and possibly impact its quality. Synthetic organics either do not biodegrade or biodegrade very slowly. Synthetic organics are a source of toxic chemicals that can have adverse affects at very low concentrations. Some of these chemicals bioaccumulate in aquatic life. If your levels of TOC are high, you should evaluate all sources of natural or synthetic organics you may use at your site.

Oil and Grease (O&G) is a measure of the amount of oil and grease present in your storm water discharge. At very low concentrations, O&G can cause a sheen (that floating "rainbow") on the surface of water (1 qt. of oil can pollute 250,000 gallons of water). O&G can adversely affect aquatic life and create unsightly floating material and film on water, thus making it undrinkable. Sources of O&G include maintenance shops, vehicles, machines and roadways.

If you have any questions regarding whether or not your constituent concentrations are too high, please contact your local Regional Board office.

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FORM 4 (Continued)-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

- Storm water discharge visual observations are required for at least one storm event per month between October 1 and May 31.
- Visual observations must be conducted during the first hour of discharge at all discharge locations.
- Discharges of temporarily stored or contained storm water must be observed at the time of discharge.
- Indicate "None" in the first column of this form if you did not conduct a monthly visual observation.
- Make additional copies of this form as necessary.

Observation Date: February 5 1998

Observers Name: Jay Holman

Title: Fleet manager

Signature: Jay Holman

Drainage Location Description	#1	#2	#3	#4
Observation Time	8:30 ☐ P.M. ☑ ~~A.M.~~	8:45 ☐ P.M. ☑ ~~A.M.~~	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Time Discharge Began	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☐	YES ☐ NO ☐

Observation Date: March 4 1998

Observers Name: Jay Holman

Title: Fleet manager

Signature: Jay Holman

Drainage Location Description	#1	#2	#3	#4
Observation Time	8:20 ☐ P.M. ☑ ~~A.M.~~	8:35 ☐ P.M. ☑ ~~A.M.~~	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Time Discharge Began	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☐	YES ☐ NO ☐

Observation Date: April 13 1998

Observers Name: Jay Holman

Title: Fleet manager

Signature: Jay Holman

Drainage Location Description	#1	#2	#3	#4
Observation Time	7:20 ☐ P.M. ☑ ~~A.M.~~	7:35 ☐ P.M. ☑ ~~A.M.~~	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Time Discharge Began	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☑	YES ☑ NO ☑	YES ☐ NO ☐	YES ☐ NO ☐

Observation Date: May 28 1998

Observers Name: Jay Holman

Title: Fleet manager

Signature: Jay

Drainage Location Description	#1	#2	#3	#4
Observation Time	7:00 ☐ P.M. ☑ ~~A.M.~~	7:15 ☐ P.M. ☑ ~~A.M.~~	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Time Discharge Began	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☐	YES ☐ NO ☐

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FORM 4 (Continued)-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

DATE/TIME OF OBSERVATION (From Reverse Side)	DRAINAGE AREA DESCRIPTION EXAMPLE: Discharge from material storage Area #2	DESCRIBE STORM WATER DISCHARGE CHARACTERISTICS Indicate whether storm water discharge is clear, cloudy, or discolored; causing staining; containing floating objects or an oil sheen, has odors, etc.	IDENTIFY AND DESCRIBE SOURCE(S) OF POLLUTANTS EXAMPLE: Oil sheen caused by oil dripped by trucks in vehicle maintenance area.	DESCRIBE ANY REVISED OR NEW BMPs AND THEIR DATE OF IMPLEMENTATION
/ / : ☐ AM ☐ PM				
/ / : ☐ AM ☐ PM				
/ / : ☐ AM ☐ PM				
/ / : ☐ AM ☐ PM				
/ / : ☐ AM ☐ PM				

SIDE A

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ANNUAL REPORT
FORM 4-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

- Storm water discharge visual observations are required for at least one storm event per month between October 1 and May 31.
- Visual observations must be conducted during the first hour of discharge at all discharge locations.
- Discharges of temporarily stored or contained storm water must be observed at the time of discharge.
- Indicate "None" in the first column of this form if you did not conduct a monthly visual observation.
- Make additional copies of this form as necessary.

Observation Date: October 1 1997

Observers Name: Jay Holman

Title: Fleet Manager

Signature: Jay Holman

Drainage Location Description	#1	#2	#3	#4
Observation Time	8 :00 ☐ P.M. ☑ A.M.	8 :15 ☐ P.M. ☑ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Time Discharge Began	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☐	YES ☐ NO ☐

Observation Date: November 3 1997

Observers Name: Jay Holman

Title: Fleet Manager

Signature: Jay Holman

Drainage Location Description	#1	#2	#3	#4
Observation Time	7 :45 ☐ P.M. ☑ A.M.	8 :00 ☐ P.M. ☑ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Time Discharge Began	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☐	YES ☐ NO ☐

Observation Date: December 1 1997

Observers Name: Jay Holman

Title: Fleet Manager

Signature: Jay Holman

Drainage Location Description	#1	#2	#3	#4
Observation Time	8 :20 ☐ P.M. ☑ A.M.	8 :30 ☐ P.M. ☑ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Time Discharge Began	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☐	YES ☐ NO ☐

Observation Date: January 5 1998

Observers Name: Jay Holman

Title: Fleet Manager

Signature: Jay Holman

Drainage Location Description	#1	#2	#3	#4
Observation Time	8 :30 ☐ P.M. ☑ A.M.	8 :45 ☐ P.M. ☑ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Time Discharge Began	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☐	YES ☐ NO ☐

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FORM 4-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

DATE/TIME OF OBSERVATION (From Reverse Side)	DRAINAGE AREA DESCRIPTION EXAMPLE: Discharge from material storage Area #2	DESCRIBE STORM WATER DISCHARGE CHARACTERISTICS Indicate whether storm water discharge is clear, cloudy, or discolored; causing staining; containing floating objects or an oil sheen, has odors, etc.	IDENTIFY AND DESCRIBE SOURCE(S) OF POLLUTANTS EXAMPLE: Oil sheen caused by oil dripped by trucks in vehicle maintenance area.	DESCRIBE ANY REVISED OR NEW BMPs AND THEIR DATE OF IMPLEMENTATION
__/__/__ __:__ ☐ AM ☐ PM				
__/__/__ __:__ ☐ AM ☐ PM				
__/__/__ __:__ ☐ AM ☐ PM				
__/__/__ __:__ ☐ AM ☐ PM				
__/__/__ __:__ ☐ AM ☐ PM				

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FORM 5-ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY BMP STATUS

EVALUATION DATE: 7/13/98 INSPECTOR NAME: Jay Holmon TITLE: Fleet manage SIGNATURE: Jay H

POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)		If yes, to either question, complete the next two columns of this form	Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐ YES ☒ NO			
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐ YES ☐ NO			
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐ YES ☒ NO	If yes, to either question, complete the next two columns of this form	Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐ YES ☐ NO			
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐ YES ☒ NO	If yes, to either question, complete the next two columns of this form	Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐ YES ☐ NO			
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐ YES ☒ NO	If yes, to either question, complete the next two columns of this form	Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐ YES ☐ NO			

1997-1998
ANNUAL REPORT

FORM 5 (Continued)-ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY BMP STATUS

EVALUATION DATE: ___/___/___ INSPECTOR NAME: _____ TITLE: _____ SIGNATURE: _____

POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)			Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐YES ☐NO	If yes, to either question, complete the next two columns of this form		
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐YES ☐NO			
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)			Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐YES ☐NO	If yes, to either question, complete the next two columns of this form		
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	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐YES ☐NO	If yes, to either question, complete the next two columns of this form		
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐YES ☐NO			
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	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐YES ☐NO	If yes, to either question, complete the next two columns of this form		
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐YES ☐NO			

ENVIRONMENTAL

ANALYTICAL CHEMISTS

April 30, 1998

LAB No: STK 831860-1

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton , CA 95206

RE: Inorganic Analysis

Sample Site: City Corp, Yard Storm Waste
Description: C. STK Corp. Yard #1
Sampled by : Jay Holman
Type of Sample: Surface Water

Sampled : April 13, 1998
Received : April 13, 1998
Completed : April 15, 1998
QA/QC ID# : 83186001-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Oil and Grease	5520B	mg/L	3	8

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Preservatives: (1) Cool 4°C (2) H_2SO_4 pH < 2 Containers: (a) Glass

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:kdm

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ENVIRONMENTAL

ANALYTICAL CHEMISTS

April 30, 1998

LAB No: STK 831860-3

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton , CA 95206

RE: Inorganic Analysis

Sample Site: City Corp, Yard Storm Waste
Description: C. STK Corp. Yard #2
Sampled by : Jay Holman
Type of Sample: Surface Water

Sampled : April 13, 1998
Received : April 13, 1998
Completed : April 15, 1998
QA/QC ID# : 83186003-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Oil and Grease	5520B	mg/L	3	4

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Preservatives: (1) Cool 4°C Containers: (a) Glass

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:kdm

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ENVIRONMENTAL

ANALYTICAL CHEMISTS

April 30, 1998

LAB No: STK 831860-4

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton , CA 95206

RE: Inorganic Analysis

Sample Site: City Corp, Yard Storm Waste
Description: C. STK Corp. Yard #2
Sampled by : Jay Holman
Type of Sample: Surface Water

Sampled : March 31, 1998
Received : April 13, 1998
Completed : April 13, 1998
QA/QC ID# : 83186004-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Conductivity	2510B	umhos/cm	1	52
pH	4500-H B	units	---	6.3
Solids, Suspended	2540D	mg/L	10	50

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Preservatives: (1) Cool 4°C Containers: (a) Plastic

If you have any questions, please call.

FGL ENVIRONMENTAL

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KW:kdm

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ENVIRONMENTAL

Analytical Chemists

April 30, 1998

INORGANIC Quality Assurance Report for sample: 831860

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton , CA 95206

Constituent	BATCH ID	Method	Units	BLANK QA/QC DLR	Result	NOTE	CALIBRATION QA/QC Type	Conc.	% REC	AR	NOTE	METHOD QA/QC Type	Conc.	% REC	% REC	AR	% DIF	MAV	NOTE
Conductivity	1A 2B	2510B	umhos/c2	1.0	0.6		CCV	995	98.7	95-105		Dup	1770	N/A	N/A	N/A	0.2	1.3	
Oil and Grease	2A 2A	5520B	mg/L	3.0	0.6		LCS	25.0	94.4	81-113		BS	25.0	94.4	90.4	83-113	4.2	17.8	
pH	0A 3A	4500-H B	units	N/A			CCV	7.00	100	95-105		Dup	6.50	N/A	N/A	N/A	0.0	2.9	
Solids, Suspended	1A 2A	2540D	mg/L	10	ND		LCS	501	97.8	82-109		Dup	20.0	N/A	N/A	N/A	10.0	46.1	

FGL ID = 19980413 ND => Not Detected at ar above DLR. DLR => Detection Limit for Reporting purposes. N/A => Not Applicable NOTE => See note indicated below.

FGL ENVIRONMENTAL, INC.

KW:kdm

Kurt Wilkinson, B.S., QA Director

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EXPLANATION OF TERMS

BLANK QA/QC - Analyte free sample analyzed to determine if background contamination is present in any instrument or techniques used for analysis.

TYPES

DLR => Detection Limit for Reporting purposes.

MDL => Method Detection Limit. This number represents the smallest non-zero value that FGL can reproduce for a method. The DLR must be greater than or equal to the MDL.

CALIBRATION QA/QC - Standard analyzed to determine the Accuracy of any instruments and/or techniques used for analysis.

TYPES

ICV => Independent Calibration Verification standard. Analyzed to check the accuracy of the standard used to calibrate an instrument or technique.

CCV => Continuing Calibration Verification standard. Analyzed to check the accuracy of the instrument or technique calibration.

LCS => Laboratory Control Standard. Analyzed to check the accuracy of the entire method from prep thru analysis.

DLS => Detection Level Standard. Used for verification and determination of MDL.

METHOD QA/QC - Matrix specific samples analyzed to determine accuracy and/or precision of the entire method.

TYPES

Dup => Samples are prepared and analyzed in Duplicate to determine the Precision of the method. The RPD or Relative Percent Difference is calculated and compared to the MAV for all constituents.

BS => Blank Spike / Blank Spike Duplicate. A Laboratory Blank matrix is Spiked with a known amount of analyte then prepared and analyzed along with a batch of samples.

MS => Matrix Spike / Matrix Spike Duplicate. A Client provided matrix is Spiked with a known amount of analyte then prepared and analyzed along with a batch of samples.

CALCULATIONS

% REC => Percent Recovery of an analyte introduced (spiked) at a know level (Concentration). % REC should be within the AR.

AR => Acceptance range of the % REC for an analyte. The AR is determined by averaging all % REC data for a specific matrix and then calculating the 95 % confidence interval.

% DIF => (Relative) Percent Difference of a sample analyzed in duplicate. % DIF should be <= MAV.

MAV => Maximum Acceptance Value for the % DIF of an analyte. The MAV is determined by averaging all % DIF data for a specific matrix and then calculating the 95 % confidence interval.

Conc. => The theoretical ammount of analyte present in the sample prior to analysis.

♦ => Indicates a special or modified DLR was applied for the acceptance criteria.

≈ => Indicates the average concentration spiked for MS/MSD or BS/BSD when the concentration spiked was not identical for both QC samples.

ENVIRONMENTAL

ANALYTICAL CHEMISTS

April 30, 1998

LAB No: STK 831860-2

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton , CA 95206

RE: Inorganic Analysis

Sample Site: City Corp, Yard Storm Waste
Description: C. STK Corp. Yard #1
Sampled by : Jay Holman
Type of Sample: Surface Water

Sampled : March 31, 1998
Received : April 13, 1998
Completed : April 13, 1998
QA/QC ID# : 83186002-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Conductivity	2510B	umhos/cm	1	40
pH	4500-H B	units	---	6.5
Solids, Suspended	2540D	mg/L	10	ND

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Preservatives: (1) Cool 4°C Containers: (a) Plastic

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:kdm

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ENVIRONMENTAL

ANALYTICAL CHEMISTS

June 9, 1998

LAB No: STK 832696-1

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton, CA 95206

RE: Inorganic Analysis

Sample Site: City Corp. Yard Storm Water
Description: South West Drain
Sampled by : Phil Bornside
Type of Sample: Surface Water

Sampled : May 28, 1998
Received : May 28, 1998
Completed : May 28, 1998
QA/QC ID# : 83269601-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Conductivity	2510B	umhos/cm	1	250
pH	4500-H B	units	---	7.4
Solids, Suspended	2540D	mg/L	14♦	400

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Containers: (a) Plastic

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:cea

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ENVIRONMENTAL

ANALYTICAL CHEMISTS

June 9, 1998

LAB No: STK 832696-2

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton, CA 95206

RE: Inorganic Analysis

Sample Site: City Corp. Yard Storm Water
Description: Front Off. N.E. S.D.
Sampled by : Phil Bornside
Type of Sample: Surface Water

Sampled : May 28, 1998
Received : May 28, 1998
Completed : May 28, 1998
QA/QC ID# : 83269602-

Analytical Results

CONSTITUENT	METHOD	UNITS	DLR	RESULTS
Conductivity	2510B	umhos/cm	1	200
pH	4500-H B	units	---	7.3
Solids, Suspended	2540D	mg/L	10	70

DLR = Detection Limit for Reporting Purposes. ND = Not Detected at or above the DLR.
ug/L = Micrograms Per Liter (ppb) mg/L = Milligrams Per Liter (ppm) mg/kg = Milligrams Per Kilogram
♦ = DLR adjusted because of dilutions, concentrations, or limited sample.
Containers: (a) Plastic

If you have any questions, please call.

FGL ENVIRONMENTAL

Kurt Wilkinson, B.S.
QA Director

KW:cea

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ENVIRONMENTAL

Analytical Chemists

June 9, 1998

INORGANIC Quality Assurance Report for sample: 832696

City of Stockton
Attn: Jay Holman
1465 S. Lincoln
Stockton, CA 95206

Constituent	BATCH ID	Method	Units	BLANK QA/QC DLR	BLANK QA/QC Result	BLANK QA/QC NOTE	CALIBRATION QA/QC Type	CALIBRATION QA/QC Conc.	CALIBRATION QA/QC % REC	CALIBRATION QA/QC AR	CALIBRATION QA/QC NOTE	METHOD QA/QC Type	METHOD QA/QC Conc.	METHOD QA/QC % REC	METHOD QA/QC % REC	METHOD QA/QC AR	METHOD QA/QC % DIF	METHOD QA/QC MAV	METHOD QA/QC NOTE
Conductivity	5A 2B	2510B	umhos/c2	1.0	ND		CCV	1000	102	95-105		Dup	4410	N/A	N/A	N/A	0.0	1.3	
pH	0A 3A	4500-H B	units	N/A			CCV	7.00	100	95-105		Dup	7.35	N/A	N/A	N/A	1.4	2.9	
Solids, Suspended	5A 2A	2540D	mg/L	10	ND		LCS	502	94.8	82-109		Dup	5.00	N/A	N/A	N/A	40.0	20.0	405

FGL ID = 19980528 ND => Not Detected at ar above DLR. DLR => Detection Limit for Reporting purposes. N/A => Not Applicable NOTE => See note indicated below.

Notes:
405 Relative Percent Difference (RPD) not within the Maximum Allowable Value (MAV) because of low analyte concentration in the sample. Data was accepted based on the LCS or CCV recovery.

FGL ENVIRONMENTAL, INC.

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Conc. => The theoretical ammount of analyte present in the sample prior to analysis.

♦ => Indicates a special or modified DLR was applied for the acceptance criteria.

≈ => Indicates the average concentration spiked for MS/MSD or BS/BSD when the concentration spiked was not identical for both QC samples.

APPENDIX
BMP-B 4.2

Fire Inspections by Basin

25-Jun-98

Basin ID	Company Name	Address	Spills
14-35			
	Mister Space Self Storage	2972 Swain Rd	No
	Payless Mini Storage	633 W. Swain	No
	Mister Space Self Storage	4223 N Pacific Ave	No
14-37			
	Minuteman Press of Stockton	1441 W March Lane	No
14-38			
	Kinko's Copies	944 W Robinhood	No
	Designs Plus	6111 N El Dorado	No
	Jiffi Printing	5650 N. Pershing	No
	Kinko's Copies	1061 W. March Lane	No
	Jiffi Printing	5642 N Pershing	No
	Tap Plastics, Inc.	5757 Pacific	No
	Kinko's Copies		No
5M-129			
	Ace Litho	7145 Pacific	No
5M-25			
	Public Storage	3901 West Lane	No
	Public Storage	1011 E. March Lane	No
	Public Storage	8118 Mariners	No
	Stockton I-5 Mini Storage	9023 Mariners	No
5M-27			
	Desktop Publishing & Print Co.	1704 W Hammer	No
5M-28			
	Lincoln Unified School District	6749 Harrisburg Pl	No
CR-41			

Basin ID	Company Name	Address	Spills
	Mister Space Self Storage	2972 Swain Rd	No
	Mister Space Self Storage	4223 N Pacific Ave	No
CR-42			
	Cesena Printing	211 E. March	No
CR-43			
	Public Storage	8118 Mariners	No
	Public Storage	1011 E. March Lane	No
	Public Storage	3901 West Lane	No
CR-46			
	Delta Anchor Business Forms	1147 Enterprise	No
	AG Signs	3740 Coronado	No
	Stockton Mailing & Print Service,	4133 Postal Ave	No
	Signco	4225 Coronado	No
	Public Storage	3901 West Lane	No
	KP Graphics, Inc.	1134 Enterprise	No
	Public Storage	8118 Mariners	No
	Public Storage	1011 E. March Lane	No
DC-165			
	Pre-Peeled Potato Co., Inc.	1585 S Union St	No
DC-65			
	GATX Logistics	3535 Perlman	Yes
	GATX Logistics	4547 Frontier Way	No
	GATX Logistics	4547 Frontier Way	No
	Custom Warehousing, Inc.	3i656 Pearlman Dr	No
	Feed Commodities	704 Zephy St	No
	BP Chemicals, Inc.	3525 Zephyr Court	No
	Cargill, Inc.	3939 Producers Dr.	No
	Cargill, Inc.	3939 Producers	No

Basin ID	Company Name	Address	Spills
	Cargill, Inc.	3939 Producers	No
	Corn Products Corp.	1021 Industrial Dr.	No
	Stockton Cogen Facility	1010 Zephyr St.	No
	J&R Distribution Services, Inc.	4201 Gibralton Court	No
	J&R Distribution Services, Inc.	4201 Gibralter Ct.	No
	Applied Aerospace Structures Cor	3437 S. Airport Way	No
	Leatherback Industries, Inc.	248 Industrial Dr.	No
	Tek Packaging, Inc.	3614 Zephry Ct	No
DC-66			
	Earth Grains	2651 S Airport Way	Yes
	Dietrich Industries, Inc.	2525 S. Airport	No
	Billingsly's Charter	2305 S. Airport	No
	Derrel's Mini Storage	1919 S. Airport	No
	Billingsly's Charter	2305 S. Airport Way	No
DC-69			
	American Sunny Foods, Inc.	2404 Stagecoach	Yes
	Blue Line Distribution, Inc.	2352 Station Dr	No
	Tony's Express, Inc.	2206 Stagecoach	No
	Cal-West Periodicals	2136 Pony Express Ct	No
	A&A Concrete Supply, Inc.	2441 W. Charter Way	No
	Tony's Express, Inc.	4339 Pock Ln	No
	TechnoTrim, Inc.	3745 Peterson Road	No
	Western Data Label	2248 Stagecoach Rd	No
	Prism Team of Stockton	3632 Peterson Rd	No
	TaB Warehouse & Distribution	2444 Station Dr	No
	A&A Concrete Supply, Inc.	2441 W. Charter Way	No
DV-50			
	Nestle Refrigerated Food Co.	2059 Navy Dr.	Yes

Basin ID	Company Name	Address	Spills
	Ductmate Industries, Inc.	1822 E. Alpine	No
	Stockton Unified School District	1932 El Pinel	No
	Ductmate Industries, Inc.	1822 E. Alpine	No
	Nestle Refrigerated Food Co.	1554 El Pinal Dr.	No
	Coca-Cola Bottling Co.	1467 El Pinel	No
DW-108			
	Rare Parts, Inc.	621 Wilshire Ave	No
DW-112			
	Colberg, Inc.	401 N. Stockton St.	No
	Colberg, Inc.	401 N Stockton	No
	Stockton Secured Storage	840 W. Fremont	No
	Gillis Plating	1018 W. Fremont	No
	Team Legends Printed Apparel	4627 E. Fremont St.	No
	Marine Services	345 N. Yosemite St.	No
	Marine Services	345 N. Yosemite St.	No
	Benno Food Products Corp.	345 N. Yosemite	No
DW-115			
	Monty's Engraving-Stockton	7705 Parkwoods	No
	McClain & Son Sign & Crane	504 W Fremont	No
	Challenger Enterprises	618 W. Lindsey	No
	Fremont Cabinet Shop	546 W. Fremont	No
DW-120			
	PIP Printing	907 N. El Dorado	No
	PIP Printing	6037 Pacific Ave	No
DW-122			
	AAA Machine Shop	118 E. Fremont St.	No
	Guerrero's Printing	517 N. Hunter	No
	AAA Machine Shop	121 E. Lindsey	No

Basin ID	Company Name	Address	Spills
	AAA Machine Shop	121 E. Lindsey	No
DW-123			
	Teichert Precast	103 N. E St.	Yes
	J&B Pickle Distributors, Inc.	307 N. Union St.	No
	HKM Machine & Fabrication, Inc.	2150 E. Fremont	No
	Diamond Truck Body Co.	1909 E. Fremont	No
	ICS Printing	527 E. Main St.	No
	ICS Printing	527 E Main	No
	Howard's Manufacturing	915 E. Market St.	No
	Numeri Tech, Inc.	124 N E	No
	Golden Gate Ornamental Iron Wo	2489 E. Main	No
	Fidelity Printing	1535 E Miner	No
	J&B Pickle Distributors, Inc.	307 N Union	No
	East Stockton Transfer Station	2435 E. Wber Ave.	No
	Gemini Limousine Specialties	901 E Miner Ave	No
	Gemini Limousine Specialties	901 E. Miner Ave.	No
	Levi Graphics & Design	248 N. Hunter	No
	Magic Ice Products	1015 E Oak	No
	Fidelity Printing	1426 Bourban St.	No
	Fercho, Gary Trucking	1000 E. Park St.	No
	Executive Limousines	205 N. Sutter	No
	Yellow Cab Co.	1049 S. Wilson Way	No
	Stockton Ambulance Co., Inc.	888 E. Lindsay St.	No
	Scott Sign Co.	711 E. Market	No
	Skibo's Machine Works	2159 E. Fremont	No
	SMART	1533 E. Lindsay St.	No
	B&R Automotive & Machine	1656 E Fremont	No
	B&R Automotive & Machine	1656 E. Fremont St.	No

Basin ID	Company Name	Address	Spills
	Atlas Machine Corp.		No
	Arctic Ice Co.	36 N D STREET	No
	Scott Screen Arts, Inc.	711 E Market	No
	Stanley Adams Machine Co., Inc.	1510 E Miner	No
	Spectrum Signs	120 S Aurora	No
	Arctic Ice Co.	36 N D STREET	No
	Arctic Ice Co.	425 N Union	No
	Stockton Engine & Machine Shop	826 N. Union Street	No
	Apache Plastics, Inc.	2050 E. Fremont	No
	Anderson Moulds, Inc.		No
	Amador Screen Arts & Graphics	334 N Wilson Way	No
	Waste Management, Inc.	2150 E. Fremont St.	No
	Woolley Custom Engine Rebuildin	1633 E Miner	No
	Yellow Cab Co.	206 N. Sutter St.	No
	Arctic Ice Co.	425 N Union	No
	Production Chemical Mfg., Inc.	1000 E. Channel St.	No
	Percival Machine & Supply	351 N A	No
	Del Monte Foods, USA	2716 E. Miner Ave.	No
	Business Printing Service	601 N Grant St.	No
	Business Printing Service	601 N. Grant	No
	Piper Pacific Agricultural Dist., In	1838 Vicki Lane	No
	Reynold's Alum. Recycling Co.	1903 E. Fremont St.	No
	Record, The	530 E Market	No
	Budget Print Center	425 E Miner	No
	Colorado Printer	334 E. Miner Ave	No
	Copy Quick Printing of Stockton	33 N. Sutter	No
DW-126			
	Greyhound Bus Lines	121 S. Center St.	Yes

Basin ID	Company Name	Address	Spills
FC-72			
	Premier Drywall Tool Co.	119 Val Dervin Prk	No
	Western Spray Painting, Inc.	107 Val Dervin Parkway	No
LJ-80			
	Dopaco California, Inc.	4545 Quantas	Yes
	Iris USA Manufacturing, Inc.	3021 Boeing Way	No
	Lazorlite Parts, Inc.	2829 Transworld	No
	Hunter Douglas, Inc.	2721 Transworld Dr.	No
	Advanced Metal Plating	4421 Giannecchini Lane	No
	U.S. Postal Service	3131 Arch-Airport Rd	No
	Advanced Metal Plating	4421 Giannecchini Ln	No
	TPS Labels, Inc.	2857 Transworld	No
	Dana Corp.	1550 Industrial Dr	No
	Roadway Package System	3033 Transworld Dr.	No
	Pelton Shepherd Industries, Inc.	2721 Transworld	No
LJ-81			
	Angel's Marble	4790 Frontier Way	Yes
	Five Star Consolidation Service, I	4884 Frontier Way	Yes
	GATX Logistics	3535 Perlman	Yes
	United Facilities, Inc.	3838 Imperial	No
	Englander-Tualatin Sleep Product	4747 Frontier	No
	Wesprint Corp.	4101 Arch Road	No
	Five Star Consolidation Service, I	4984 Frontier	No
	GATX Logistics	4547 Frontier Way	No
	Valley Rubber & Gasket Co., Inc.	4848 Frontier Way	No
	Statco Engineering & Fabricators,	4025 Arch Road	No
	General Transportation, Inc.	4884 Frontier Way	No
	Power Logistics	3735 Imperial	No

Basin ID	Company Name	Address	Spills
	GATX Logistics	4547 Frontier Way	No
	AG Trucking	4884 Frontier Way	No
	Airborne Express	3838 Imperial Way	No
	Valley Rubber & Gasket Co., Inc.	4848 Frontier	No
MM-141			
	Coastal Pacific Food Distributors,	1320 W. Weber	No
	Union Ice	1320 W. Weber	No
	Sierra Pacific Distribution Service	1320 W. Weber	No
MM-142			
	Clipper Exxpress	1415 W. Anderson St.	No
	OHI Co., Inc.	8830 S. Pershing	No
	Interstate International, Inc.	825 Navy Dr.	No
	Newark Sierra Paperboard Corp.	800 W. Church St.	No
	Interstate International, Inc.	825 Navy Dr.	No
	Stockton Further Processing	1111 Navy Drive	No
	Swift Transportation Co., Inc.	781 Swift Way	No
	JC Trucking	1415 W. Anderson	No
MM-145			
	McCutchen, NJ, Inc.	123 W. Sonora	No
MM-147			
	LFW Mfg. Co., Inc.	745 S. Lincoln St.	No
	Sierra Lumber Manufacturers, Inc.	375 W. Hazelton	No
	Silvey, JP Trucking	605 S. Harrison	No
	LFW Mfg. Co., Inc.	745 S Lincoln	No
	Delta Door Co., Inc.	738 S Van Buren	No
	Mitchler, EF Co., Inc.	400 S. Lincoln St.	No
	Delta Door Co., Inc.	738 S Van Buren	No
	Hughes, Dwight P Co.	540 W. Scott Ave.	No

Basin ID	Company Name	Address	Spills
MM-150			
	Quikrete, Inc.	819 S. Stanislaus St.	Yes
	San Joaquin Co. Motor Pool Divisi	1810 E. Church St.	Yes
	Santa Fe Railway, Inc.	720 S. B St.	Yes
	Delta Plating, Inc.	818 S. Stanislaus	No
	China Noodle Factory	308 E. Hazelton	No
	Dentoni's Welding Works, Inc.	801 S. Airport Way	No
	Pallet Man, The	945 S. Pilgrim St.	No
	National Broom Co. of CA, Inc.	24 W. Scotts Ave	No
	Delta Pump Co.	646 S. California	No
	Delta Cabinets & Millwork	122 S. Union	No
	Custom Food Machinery, Inc.	1881 E. Market	No
	Port City Steel Fabricators	816 E Hazelton	No
	Condor Utility Products, Inc.	1450 E.Scotts Ave.	No
	Port City Steel Fabricators	816 E Hazelton	No
	Port City Steel Fabricators	816 E. Hazleton St.	No
	Islamic Meat & Poultry Co.	1320 S. Aurora	No
	California Mirror Door	1030 E. Church	No
	Rotor Blades, Inc.	1514 E. Scotts	No
	San Joaquin Co. Motor Pool Divisi	444 S. Wilson Way	No
	SIMS-LMC Recyclers	1000 S. Aurora St.	No
	Aztlan Ornamental Iron Fabricatio	129 S. Wilson Way	No
	Stockton Poultry Market	302 S. San Joaquin	No
	Industrial Innovations, Inc.	6205 Aurora St	No
	JEB Trucking	1433 Tillie Lewis Dr.	No
	Geiger Manufacturing, Inc.	1110 E. Scotts	No
	Acme Truck Parts & Equipment, I	1016 S. Wilson Way	No
	Williams, LR Co., Inc.	941 S. Pilgrim St	No

Basin ID	Company Name	Address	Spills
	Union Planing Mill, Inc.	735 E. Sutter St.	No
	Harbor Signs	908 E. Scotts	No
	Grimaud Farms of California	1320 S. Aurora St	No
	Mark-Ease Products Co., Inc.	19 N. Pilgrom	No
	London Produce, Inc.	2075 E. Weber	No
	M&M Auto Dismantling	1111 E. Jefferson St.	No
MM-153			
	Andersen Rack Systems, Inc.	1821 E Charter	Yes
	Boggs Steel Fabrication, Inc.	1825 E CHARTER	No
	Perez, Louis Trucking	1919 E. Charter	No
MM-154			
	Aranda's Tortilla Factory	2153 E Main	No
	Aranda's Tortilla Factory	378 W Charter Way	No
	Aranda's Tortilla Factory	2153 E Main	No
MM-159			
	Froeliger Machine Tool Co.	3023 Myrtle	No
	Sardee Industries, Inc.	2731 Myrtle	No
	PDM Steel Service Centers	3535 Myrtle	No
MS-19			
	Advanced Mini Storage	7739 Murray Dr	No
	Impact Promotions	7273 Murray Dr	No
	U-Haul Co.	7701 Tam-O-Shanter	No
	Excellence In Printing Co.	7602 Murray Dr	No
MS-20			
	Mini-U-Storage	7760 Lorraine	No
	SNAPS	7720 Lorraine	No
	U-Stor-It	6800 West Lane	No
	Abracadabra Instant Signs	2050 W Fremont	No

Basin ID	Company Name	Address	Spills
	HV Printing	7905 N. West Lane	No
	HV Printing	7905 West Lane	No
	Landmark Graphics, Inc.	8030 Lorraine	No
	Sign Shop, The	7720 Lorraine	No
SC-55			
	Bekins Moving & Storage	2734 Wilshire Ave	Yes
	Advanced Mini Storage	7739 Murray Dr	No
SC-56			
	Automatic Switch Co., Inc.	705 N Carlton Avenue	Yes
	Automatic Switch Co., Inc.		No
	Graphics West Printing	1810 Fields St	No
	Automatic Switch Co., Inc.	705 Carlton Ave	No
	Pat X-Ray Co., Inc.	711 N. San Juan	No
	Portside Machine Shop, Inc.	1704 W Fremont	No
	Portside Machine Shop, Inc.	1704 W. Fremont St.	No
	Stockton Sign Co.	1800 W. Fremont	No
SC-57			
	American Moulding & Millwork		No
	Alpine Printers		No
	A-1 Ambulance Service	1243 Waterloo Rd.	No
	Snyder Lithograph, Inc.	1800 N. Wilson Way	No
	Holstein's Customs	2509 West Lane	No
	Bono's Ornamental Iron Works, In	1080 N. Union	No
	Personal Touch Screen Printing	4137 N. El Dorado St.	No
	Valley Plastics & Marble, Inc.	1707 Roosevelt	No
	Stockton Metal Recycling	1533 Waterloo Rd.	No
	Stockton Blue Print Co.	1421 N. El dorado	No
	Precision Printed Matter	1107 N. Wilson Way	No

Basin ID	Company Name	Address	Spills
	Delta Plastics	1152 N. School	No
	BTI Buster Transportation, Inc.	2073 N. Wilson Way	No
	Mina-Tree Signs, Inc.	1233 Ronald Ave	No
	Vision Printing	127 W. Harding	No
	Space Station Mini Storage	2055 West Lane	No
	Rendon Sign Services	304 W. Harding Way	No
	California Tees	1439 N El Dorado	No
	Action Plastics Co.	1215 N. Union	No
SJ-60			
	Debco Auto Wrecking, Inc.	2345 Navy Dr.	Yes
	American Door Manufacturing	1488 Tillie Lewis Drive	No
	Sonoco Products Co., Inc.	1900 Wardrobe	No
	Williams Tank Lines	1477 Tillie Lewis Dr.	No
	American Battery Co.	2245 W Charter Way	No
	Advanced Metal Products	1621 NAVY DR	No
	Toys-R-Us, Inc.	1624 Army Court	No
	Advanced Metal Products	1621 Navy Drive	No
	QB Rebuilders, Inc.	2325 W Charter Way	No
	Evergreen Glass, Inc.	1444 Tellie Lewis Dr.	No
	E-Z Vent Sheet Metal Products, In	1505 Tillie Lewis Dr	No
	Laidlaw Transit, Inc.	2005 Navy Dr.	No
	Nelson-Ball Paper Products, Inc.	1627 Army Ct.	No
	Klein Ranch Operations	1405 Fresno Ave	No
	D.O.N. Investments	1624 Navy Dr.	No
	D&V Machine Shop & Pump Co.	1903 Navy Drive	No
	Klein Bros. Warehouse & Trans.		No
	Mel's Auto Dismantlers	2219 Navy Dr.	No
	Contech-Velvacon Paints	2211 Navy Drive	No

Basin ID	Company Name	Address	Spills
	PDM Strocal, Inc.	2324 Navy Dr.	No
	Berberian Nut Co.	1503 Fresno Ave	No
	Hormel Foods Corp.	1404 Fresno	No
	Reliance Cold Storage Co., Inc.	1627 Navy Dr	No
	Raymond Agricultural Warehouse	2245 W. Charter	No
SJ-61			
	Barnes Trucking	1817 Fresno	No
SJ-CO			
	Cheong Fung Co.	2710 Country Club	No
	PIP Printing	907 N. El Dorado	No
	PIP Printing	6037 Pacific Ave	No
WK-64			
	Foster, LB Co.	2710 Heinz St	Yes
	Southern Pacific Transportation C	2847 Heinz St.	Yes
	Stockton Bin & Pallet Repair, Inc.	2404 S. California St.	Yes
	Quinteros Auto Dismantling	2966 Turnpike Rd.	Yes
	Associated Tractor Service, Inc.	1323 W. Charter Way	Yes
	Hagan Engineering, Inc.	1963 S Argonaut	No
	Heinz, HJ Co., USA	2800 S. California St.	No
	Hahn Tractor Co., Inc.	1777 S Argonaut	No
	Valley Sanitation	2402 S. California St.	No
	Kelley Trucking	1340 W. Charter Way	No
	Hubbard Milling Co.	2422 S California	No
	Independent Trucking Co., Inc.	1145 W. Charter Way	No
	Marquardt Trans., Inc.	1340 W. Charter Way	No
	Milano, J Co., Inc.	948 W. Charter Way	No
	Thorsen Trucking, Inc.	2800 Turnpike Rd.	No
	DeVecchio Foundry	854 W. Second St.	No

Basin ID	Company Name	Address	Spills
	Crown Fiberglass Corp.	2402 S. Calilf St	No
	Chemical Transfer Co., Inc.	2746 Heinz St.	No
	Charter Way Auto Recyclers	930 E. Charter Way	No
	Aranda's Tortilla Factory	2153 E Main	No
	Aranda's Tortilla Factory	378 W Charter Way	No
	Aranda's Tortilla Factory	2153 E Main	No
	Stockton Bin & Pallet Repair, Inc.	2404 S California	No
	Bulk Transportation	3032 S. El Dorado St.	No
	Bloom's Auto Parts, Inc.	2446 Turnpike Rd.	No
	O'Reilly & Son	2420 S. California St.	No

APPENDIX
BMP-B 4.3

G. Birdzell

MEMORANDUM

June 12, 1998

TO: Ed Formosa, Deputy Director/Water & Collection Systems
Tim Anderson, Senior Plant Operations Supervisor
Jim Butler, Senior Plant Maintenance Supervisor
Robert Castelli, Technical Services Supervisor
Doug Jones, Senior Water/Collection Systems Supervisor
Jeff Cameron, Senior Civil Engineer
Mark Madison, Senior Civil Engineer
Mark Von Aspern, Plant Operations Supervisor, Tertiary
Dick Teczon, Plant Operations Supervisor, Main Plant
Michael McDonald, Plant Maintenance Supervisor
Larry Huber, Laboratory Supervisor
Verlin Brown, Stores Supervisor
Joseph Bulawit, Collection Systems Supervisor
Yitzhak Gilon, Water Operations Supervisor

FROM: Diane M. Hinson
Regulatory Compliance Officer

SUBJECT: CAL/OSHA 24-HOUR RESPONDER OPERATIONS LEVEL TRAINING

The 24-Hour First Responder Operations (FRO) Level Training will be conducted according to the guidelines of Cal/OSHA Title 8, California Code of Regulations §5192 and Federal OSHA 29 Code of Federal Regulations §1910.120. Currently, our employees respond to incidental chemical releases in direct response to their job descriptions. An incidental release is a release that poses minimal or no risk to the safety and health of employees in the immediate area, and those employees are trained and equipped to handle the release on their own. This describes the activities of the following job classifications:

Maintenance Section
- Senior Mechanical Maintenance Worker
- Mechanical Maintenance Worker II
- Mechanical Maintenance Apprentice
- Maintenance Worker II
- Senior Electrician

Operations Section
- Senior Plant Operator
- Plant Operator I/II
- Plant Operator Apprentice

Collection Systems Section

CAL/OSHA 24-HOUR FIRST RESPONDER OPERATIONS LEVEL TRAINING

Senior Collection Systems Operator
Collection Systems Operator I/II

Water/Operations Section

Senior Water Systems Operator
Water Systems Operator I/II

An emergency response is needed if the release, or potential release, poses a risk to people in the area, and it is beyond the capability of MUD employees to handle the release safely based on their training and equipment. Currently, if an incidental release escalates, our employees are instructed to call 911. Therefore, the Operations Level Training will focus on and MUD employees shall be instructed in the following areas of specialty:

Phase 1: Response Hazards and Principles of Personal Safety - *Operations, Maintenance, Collection Systems, Water Sections, Stormwater Section, Engineering and Administration*

- •Hazard Identification
  - -Hazard Communication
- •Chemical Hazards
  - -MSDS
- •Safety Hazards
  - -Physical Hazards: Trips, Slips, Construction Site Hazards
- •Monitoring Equipment
  - -Hand-held equipment
  - -Stationary equipment
- •Personal Protection Equipment (PPE)/Safety Equipment
  - -Respirators
    - -Air Purifying: Half and Full Face Masks
    - -Forced Air
    - -Self-Contained Breathing Apparatus (SCBA)
    - -Dust Masks: Disposable

Phase 2: General Principles and Procedures of Job-Related Hazards - *Operations, Maintenance, Collection Systems, and Water Sections*

- •Trenching/Shoring Safety
- •Confined Space Entry
  - -Permit Entry
  - -NonPermit Entry
- •Medical Surveillance
- •Respiratory Fit-Testing and Training
- •Hands-On Exercise (Donning and Doffing PPE/SCBA)

CAL/OSHA 24-HOUR FIRST RESPONDER OPERATIONS LEVEL TRAINING

Phase 3: Initial Incident Procedures and Incident Safety - *Operations and Maintenance Sections*

- •Railcar Connecting/Disconnecting SOPs
- •Liquid Spill Handling Procedures
- •Chlorine/Sulfur Dioxide SOPs
- •Chemical Release Response SOPs
- •Site Control
  - -Setting up Work Zones
- •Decontamination
- •Chemical Release Scenarios

In addition to the above specified response tasks, employees within the Maintenance, Operations, and Collection Systems Section perform permitted confined space entries. Maintenance and Collection Systems Sections have been trained in rescue activities for confined space entries. Each member of the rescue team must hold valid First Aid/CPR certification (Title 8, Article 108, §5156, CCR).

Pursuant to §5192, (e)(4), Management and Supervisor Training, the following classifications must also undergo the required training and medical surveillance:

Administration
- Deputy Director/Water & Collection Systems (ICO for Department)
- Senior Water/Collection Systems Supervisor
- Regulatory Compliance Officer

Maintenance Section
- Senior Plant Maintenance Supervisor
- Plant Maintenance Supervisor

Operations Section
- Senior Plant Operations Supervisor
- Plant Operations Supervisor

Collection Systems Section
- Collection Systems Supervisor

Water/Operations Section
- Water Operations Supervisor

All classifications must satisfactorily demonstrate competency at the conclusion of each training session as well as perform the tasks identified in a safe, effective, and efficient manner. For instance, employees responding to a chemical release shall don their self-contained breathing apparatus

CAL/OSHA 24-HOUR FIRST RESPONDER OPERATIONS LEVEL TRAINING

(SCBA), while wearing a chemical splash suit, within 3 minutes or less. These efficiency tasks will be mastered through continuous training throughout the year with members of the section.

The aforementioned training sessions will be conducted in 5-4 hour blocks commencing on July 6, 1998 and concluding not later than October 23, 1998 for up to 150 employees (30 employees per class). I have forwarded to you through e-mail the Phase I schedule of classes. Classes for the Phase II and Phase III portions of the 24-hour FRO training will be scheduled until all employees have been certified.

If you have any questions, please let me know.

DIANE M. HINSON
REGULATORY COMPLIANCE OFFICER

cc: Morris L. Allen, Director
Don Dodge, Assistant Director
Glen Birdzell, Deputy Director/ Stormwater
Robert Simmons, Deputy Director/Wastewater

APPENDIX
BMP-B 6.3

TO: Glen Birdzell
City of Stockton
Municipal Utilities Dept.

FROM: Jennifer Schaffer
San Joaquin County/Solid Waste Div.

San Joaquin County Solid Waste Division collected 448,737 pounds of household hazardous waste from 5,136 house holds this year. The pounds per vehicle was 95.37 and actual number of vehicles was 4,705.

Throughout San Joaquin County there are 43 used oil collection centers that participate in the State program for recycling of waste oil. This year 295,698 gallons of waste oil was collected and recycled through this program.

Post-It™ brand fax transmittal memo 7671	# of pages ▸ 1
To Glen Birdzell	From JENNIFER Schaffer
Co. City of Stockton	Co. San Joaquin County
Dept.	Phone # 468-3088
Fax # 937-8137	Fax # 468-3078

COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS
P. O. BOX 1810 — 1810 E. HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201
(209) 468-3000
FAX (209) 468-2999

HENRY M. HIRATA
DIRECTOR

THOMAS R. FLINN
DEPUTY DIRECTOR
MANUEL LOPEZ
DEPUTY DIRECTOR
STEVEN WINKLER
DEPUTY DIRECTOR

FACSIMILE TRANSMITTAL COVER SHEET

DATE: AUGUST 06, 1998

TO: GLEN BIEDZELL, DEPUTY DIRECTOR
MUNICIPAL UTILITIES
CITY OF STOCKTON
FAX 9-937-8708

FROM: ALISON HUDSON, SOLID WASTE
PLANNING/WASTE REDUCTION SECTION

SUBJECT: H.H.W COLLECTION PROGRAM.

CERTIFIED CENTERS — 104,880 GALLONS RECYCLED OIL IN STOCKTON METRO
— 29,000 lbs OR 3,200 GALLONS STOCKTON METRO
350 lbs oil filters collected.

HHW events
HHW only

COUNTY OF SAN JOAQUIN
Department of Public Works
Solid Waste Division
P.O. Box 1810
Stockton, California 95201

18 PAGE(S) TO FOLLOW

FAX NUMBER: (209) 468-3078

CONTACT NUMBER: (209) 468-3066

B. Jurisdiction

Reporting Source	San Joaquin County Department of Public Works
Service Area	County of San Joaquin
Agency	Department of Public Works
Address	1810 East Hazelton
City	Stockton
State	California
Zip	95201
Contact Person	Alison Hudson
Phone	(209) 468-3066
Location of Event	San Joaquin Delta College, Shima Lot #2, 5151 Pacific Avenue, Stockton, CA 95207

C. EPA ID Number

CAH111000207

D. Sponsors

(Check all that apply)

X	County	___	Contractor
___	City	___	Joint (public/private)
___	Private company	___	Non-profit group
___	Other		

E. Program Type

(Check all that apply)

___	Permanent	___	Mobile
X	Temporary (periodic)	___	Recycle only program
___	Other		

F. Location

(Check all that apply)

X	One site	___	At a transfer station
___	Multiple sites	X	On city property
___	Curbside	___	On county property
___	At a sanitary landfill	___	On private property
___	Other		

G. Participation

Number of participants	937	participants
Number of days open	2	days
Population of service area	535,000	people

CIWMB 303
5/95

EPA ID # CAH111000207

H WASTE VOLUME COLLECTED

		Weight (in pounds)	Management Method(s) Include percentage if more than one method was used						
			DI	FI	L	N	RC	RU	S
1. Flammable & Poison	Flammable solid/liquid	9,575	100%						
	Bulked flammable liquids	19,400							
	Oil-base paint	14,000		100%					
	Poison (excl. aerosols)	3,780	100%						
	Reactive and explosive	8	100%						
	Subtotal	46,763							
2. Acid	Inorganic acid	477	100%						
	Organic acid	119	100%						
	Subtotal	596							
3. Base	Inorganic base	728	100%						
	Organic base	182	100%						
	Subtotal	910							
4. Oxidizer	Neutral oxidizers	545	100%						
	Organic peroxides	9	100%						
	Oxidizing acid	0							
	Oxidizing base	0							
	Subtotal	554							
5. PCB-containing	PCB-containing paint	0							
	Other PCB waste	18	100%						
	Subtotal	18							
6. Aerosol	Corrosive aerosols	193	100%						
	Flammable aerosols	1,354	100%						
	Poison aerosols	386	100%						
	Subtotal	1,933							
7. Reclaimable	Antifreeze	800					100%		
	Car batteries	6,200					100%		
	Fluorescent bulbs	0							
	Latex paint	14,500					100%		
	Motor oil/oil products	15,500					100%		
	Oil filters	200					100%		
	Mercury (metallic)	6					100%		
	Subtotal	37,206							
8. Other	Medical waste	15	100%						
	Household batteries	190					100%		
	Other	489	30%				70%		
	Subtotal	694							
9. Asbestos		3175			100%				
10. Grand Total		91,649							

B. Jurisdiction

Reporting Source	San Joaquin County Department of Public Works
Service Area	County of San Joaquin
Agency	Department of Public Works
Address	1810 East Hazelton
City	Stockton
State	California
Zip	95201
Contact Person	Alison Hudson
Phone	(209) 468-3066
Location of Event	Taft Communtiy Center Parking Lot, 389 Downing Ave., Stockton, CA 95206

C. EPA ID Number

CAH111000612

D. Sponsors

(Check all that apply)

X	County	___	Contractor
___	City	___	Joint (public/private)
___	Private company	___	Non-profit group
___	Other		

E. Program Type

(Check all that apply)

___	Permanent	___	Mobile
X	Temporary (periodic)	___	Recycle only program
___	Other		

F. Location

(Check all that apply)

X	One site	___	At a transfer station
___	Multiple sites	X	On city property
___	Curbside	___	On county property
___	At a sanitary landfill	___	On private property
___	Other		

G. Participation

Number of participants	6	participants
Number of days open	1	days
Population of service area	235,000	people

CIWMB 303
5/95

EPA ID # CAH111000612

H WASTE VOLUME COLLECTED

		Weight (in pounds)	Management Method(s) Include percentage if more than one method was used						
			DI	FI	L	N	RC	RU	S
1. Flammable & Poison	Flammable solid/liquid	412	100%						
	Bulked flammable liquids	0							
	Oil-base paint	48	100%						
	Poison (excl. aerosols)	80	100%						
	Reactive and explosive	0							
	Subtotal	540							
2. Acid	Inorganic acid	0							
	Organic acid	0							
	Subtotal	0							
3. Base	Inorganic base	0							
	Organic base	0							
	Subtotal	0							
4. Oxidizer	Neutral oxidizers	0							
	Organic peroxides	0							
	Oxiding acid	0							
	Oxiding base	0							
	Subtotal	0							
5. PCB-containing	PCB-containing paint	0							
	Other PCB waste	0							
	Subtotal	0							
6. Aerosol	Corrosive aerosols	0							
	Flammable aerosols	0							
	Poison aerosols	0							
	Subtotal	0							
7. Reclaimable	Antifreeze	0							
	Car batteries	0							
	Fluorescent bulbs	0							
	Latex paint	0							
	Motor oil/oil products	0							
	Oil filters	0							
	Mercury (metallic)	0							
	Subtotal	0							
8. Other	Medical waste	0							
	Household batteries	0							
	Other	0							
	Subtotal	0							
9. Asbestos		0							
10. Grand Total		540							

B. Jurisdiction

Reporting Source	San Joaquin County Department of Public Works
Service Area	County of San Joaquin
Agency	Department of Public Works
Address	1810 East Hazelton
City	Stockton
State	California
Zip	95201
Contact Person	Alison Hudson
Phone	(209) 468-3066
Location of Event	San Joaquin County Fairgrounds, 1685 S. Airport Way, Stockton, CA 95205

C. EPA ID Number

CAH111000344

D. Sponsors

(Check all that apply)

X	County	___	Contractor
___	City	___	Joint (public/private)
___	Private company	___	Non-profit group
___	Other		

E. Program Type

(Check all that apply)

___	Permanent	___	Mobile
X	Temporary (periodic)	___	Recycle only program
___	Other		

F. Location

(Check all that apply)

X	One site	___	At a transfer station
___	Multiple sites	X	On city property
___	Curbside	___	On county property
___	At a sanitary landfill	___	On private property
___	Other		

G. Participation

Number of participants	427	participants
Number of days open	2	days
Population of service area	228,000	people

CIWMB 303
5/95

EPA ID # CAH111000344

H. WASTE VOLUME COLLECTED

		Weight (in pounds)	Management Method(s) Include percentage if more than one method was used						
			DI	FI	L	N	RC	RU	S
1. Flammable & Poison	Flammable solid/liquid	3,555	100%						
	Bulked flammable liquids	0							
	Oil-base paint	16,240	1%	99%					
	Poison (excl. aerosols)	1,920	100%						
	Reactive and explosive	0							
	Subtotal	21,715							
2. Acid	Inorganic acid	324	100%						
	Organic acid	36	100%						
	Subtotal	360							
3. Base	Inorganic base	580	100%						
	Organic base	65	100%						
	Subtotal	645							
4. Oxidizer	Neutral oxidizers	15	100%						
	Organic peroxides	15	100%						
	Oxiding acid	0							
	Oxiding base	0							
	Subtotal	30							
5. PCB-containing	PCB-containing paint	0							
	Other PCB waste	0							
	Subtotal	0							
6. Aerosol	Corrosive aerosols	82	100%						
	Flammable aerosols	574	100%						
	Poison aerosols	164	100%						
	Subtotal	820							
7. Reclaimable	Antifreeze	1,200					100%		
	Car batteries	4,250					100%		
	Fluorescent bulbs	0					100%		
	Latex paint	13,200					100%		
	Motor oil/oil products	13,500					100%		
	Oil filters	150					100%		
	Mercury (metallic)	11					100%		
	Subtotal	32,311							

CIWMB
5/95

B. Jurisdiction

Reporting Source	San Joaquin County Department of Public Works
Service Area	County of San Joaquin
Agency	Department of Public Works
Address	1810 East Hazelton

City	Stockton
State	California
Zip	95201
Contact Person	Alison Hudson
Phone	(209) 468-3066
Location of Event	Northeast Community Center Parking Lot, 288 E. Harding Way, Stockton, CA 95204

C. EPA ID Number

CAH111000613

D. Sponsors

(Check all that apply)

X	County	___	Contractor
___	City	___	Joint (public/private)
___	Private company	___	Non-profit group
___	Other		

E. Program Type

(Check all that apply)

___	Permanent	___	Mobile
X	Temporary (periodic)	___	Recycle only program
___	Other		

F. Location

(Check all that apply)

X	One site	___	At a transfer station
___	Multiple sites	X	On city property
___	Curbside	___	On county property
___	At a sanitary landfill	___	On private property
___	Other		

G. Participation

Number of participants	35	participants
Number of days open	1	days
Population of service area	228,000	people

HENRY M. HIRATA
DIRECTOR

COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS
P. O. BOX 1810 — 1810 E. HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201
(209) 468-3000
FAX (209) 468-2999

THOMAS R. FLINN
DEPUTY DIRECTOR
MANUEL LOPEZ
DEPUTY DIRECTOR
STEVEN WINKLER
DEPUTY DIRECTOR

FACSIMILE TRANSMITTAL COVER SHEET

DATE: August 06, 1998

TO: Glen Riddell, Deputy Director
Municipal Utilities
City of Stockton
FAX 9-937-8708

FROM: Alison Hudson, Solid Waste
Planning/Waste Reduction Section

SUBJECT: H.H.W Collection Program.

CERTIFIED CENTERS — 104,880 GALLONS RECYCLED OIL IN STOCKTON METRO
HHW events — 29,000 lbs or 3,200 GALLONS STOCKTON METRO
HHW only — 350 165 oil filters collected.

COUNTY OF SAN JOAQUIN
Department of Public Works
Solid Waste Division
P.O. Box 1810
Stockton, California 95201

18 PAGE(S) TO FOLLOW

FAX NUMBER: (209) 468-3078

CONTACT NUMBER: (209) 468-3066

B. Jurisdiction

Reporting Source	San Joaquin County Department of Public Works
Service Area	County of San Joaquin
Agency	Department of Public Works
Address	1810 East Hazelton
City	Stockton
State	California
Zip	95201
Contact Person	Alison Hudson
Phone	(209) 468-3066
Location of Event	Northeast Community Center Parking Lot, 288 E. Harding Way, Stockton, CA 95204

C. EPA ID Number

CAH111000613

D. Sponsors

(Check all that apply)

X	County	___	Contractor
___	City	___	Joint (public/private)
___	Private company	___	Non-profit group
___	Other		

E. Program Type

(Check all that apply)

___	Permanent	___	Mobile
X	Temporary (periodic)	___	Recycle only program
___	Other		

F. Location

(Check all that apply)

X	One site	___	At a transfer station
___	Multiple sites	X	On city property
___	Curbside	___	On county property
___	At a sanitary landfill	___	On private property
___	Other		

G. Participation

Number of participants	35	participants
Number of days open	1	days
Population of service area	228,000	people

CIWMB 303
5/95

EPA ID # CAH111000613

H. WASTE VOLUME COLLECTED

		Weight (in pounds)	Management Method(s) Include percentage if more than one method was used						
			DI	FI	L	N	RC	RU	S
1. Flammable & Poison	Flammable solid/liquid	1,355	100%						
	Bulked flammable liquids	0							
	Oil-base paint	650	100%						
	Poison (excl. aerosols)	0							
	Reactive and explosive	0							
	Subtotal	2,005							
2. Acid	Inorganic acid	0							
	Organic acid	0							
	Subtotal	0							
3. Base	Inorganic base	0							
	Organic base	0							
	Subtotal	0							
4. Oxidizer	Neutral oxidizers	0							
	Organic peroxides	0							
	Oxiding acid	0							
	Oxiding base	0							
	Subtotal	0							
5. PCB-containing	PCB-containing paint	0							
	Other PCB waste	0							
	Subtotal	0							
6. Aerosol	Corrosive aerosols	4	100%						
	Flammable aerosols	28	100%						
	Poison aerosols	8	100%						
	Subtotal	40							
7. Reclaimable	Antifreeze	0							
	Car batteries	810					100%		
	Fluorescent bulbs	0							
	Latex paint	0							
	Motor oil/oil products	0							
	Oil filters	0							
	Mercury (metallic)	0							
	Subtotal	810							
8. Other	Medical waste	0							
	Household batteries	0							
	Other	12	100%						
	Subtotal	12							
9. Asbestos		0							
10. Grand Total		2,867							

B. Jurisdiction

Reporting Source	San Joaquin County Department of Public Works
Service Area	County of San Joaquin
Agency	Department of Public Works
Address	1810 East Hazelton
City	Stockton
State	California
Zip	95201
Contact Person	Alison Hudson
Phone	(209) 468-3066
Location of Event	Eastside Community Park, Between Marsh & Horner Ave., Stockton, CA 95215

C. EPA ID Number

CAH111000614

D. Sponsors

(Check all that apply)

X	County	___	Contractor
___	City	___	Joint (public/private)
___	Private company	___	Non-profit group
___	Other		

E. Program Type

(Check all that apply)

___	Permanent	___	Mobile
X	Temporary (periodic)	___	Recycle only program
___	Other		

F. Location

(Check all that apply)

X	One site	___	At a transfer station
___	Multiple sites	X	On city property
___	Curbside	___	On county property
___	At a sanitary landfill	___	On private property
___	Other		

G. Participation

Number of participants	15	participants
Number of days open	1	days
Population of service area	228,000	people

CIWMB 303
5/95

EPA ID # CAH111000614

H. WASTE VOLUME COLLECTED

		Weight (in pounds)	Management Method(s) Include percentage if more than one method was used						
			DI	FI	L	N	RC	RU	S
1. Flammable & Poison	Flammable solid/liquid	189	100%						
	Bulked flammable liquids	0							
	Oil-base paint	1,021	2%	98%					
	Poison (excl. aerosols)	0							
	Reactive and explosive	0							
	Subtotal	1,210							
2. Acid	Inorganic acid	0							
	Organic acid	0							
	Subtotal	0							
3. Base	Inorganic base	0							
	Organic base	0							
	Subtotal	0							
4. Oxidizer	Neutral oxidizers	0							
	Organic peroxides	0							
	Oxiding acid	0							
	Oxiding base	0							
	Subtotal	0							
5. PCB-containing	PCB-containing paint	0							
	Other PCB waste	0							
	Subtotal	0							
6. Aerosol	Corrosive aerosols	0							
	Flammable aerosols	0							
	Poison aerosols	0							
	Subtotal	0							
7. Reclaimable	Antifreeze	0							
	Car batteries	0							
	Fluorescent bulbs	0							
	Latex paint	0							
	Motor oil/oil products	0							
	Oil filters	0							
	Mercury (metallic)	0							
	Subtotal	0							
8. Other	Medical waste	0							
	Household batteries	0							
	Other	0							
	Subtotal	0							
9. Asbestos		0							
10. Grand Total		1,210							

B. Jurisdiction

Reporting Source	San Joaquin County Department of Public Works
Service Area	County of San Joaquin
Agency	Department of Public Works
Address	1810 East Hazelton
City	Stockton
State	California
Zip	95201
Contact Person	Alison Hudson
Phone	(209) 468-3086
Location of Event	Larch Clover Comm. Ctr. Pkg. Lot, 11157 W. Larch Rd., Tracy, CA 95376

C. EPA ID Number

CAH111000615

D. Sponsors

(Check all that apply)

X	County	___	Contractor
___	City	___	Joint (public/private)
___	Private company	___	Non-profit group
___	Other		

E. Program Type

(Check all that apply)

___	Permanent	___	Mobile
X	Temporary (periodic)	___	Recycle only program
___	Other		

F. Location

(Check all that apply)

X	One site	___	At a transfer station
___	Multiple sites	X	On city property
___	Curbside	___	On county property
___	At a sanitary landfill	___	On private property
___	Other		

G. Participation

Number of participants	4	participants
Number of days open	1	days
Population of service area	46,000	people

CIWMB 303
5/95

EPA ID # CAH111000615

H. WASTE VOLUME COLLECTED

		Weight (in pounds)	Management Method(s) Include percentage if more than one method was used						
			DI	FI	L	N	RC	RU	S
1. Flammable & Poison	Flammable solid/liquid	40	100%						
	Bulked flammable liquids	0							
	Oil-base paint	180	100%						
	Poison (excl. aerosols)	60	100%						
	Reactive and explosive	0							
	Subtotal	280							
2. Acid	Inorganic acid	0							
	Organic acid	0							
	Subtotal	0							
3. Base	Inorganic base	0							
	Organic base	0							
	Subtotal	0							
4. Oxidizer	Neutral oxidizers	0							
	Organic peroxides	0							
	Oxiding acid	0							
	Oxiding base	0							
	Subtotal	0							
5. PCB-containing	PCB-containing paint	0							
	Other PCB waste	0							
	Subtotal	0							
6. Aerosol	Corrosive aerosols	2	100%						
	Flammable aerosols	14	100%						
	Poison aerosols	4	100%						
	Subtotal	20							
7. Reclaimable	Antifreeze	0							
	Car batteries	0							
	Fluorescent bulbs	0							
	Latex paint	0							
	Motor oil/oil products	0							
	Oil filters	0							
	Mercury (metallic)	0							
	Subtotal	0							
8. Other	Medical waste	0							
	Household batteries	0							
	Other	0							
	Subtotal	0							
9. Asbestos		0							
10. Grand Total		300							

B. Jurisdiction

Reporting Source	San Joaquin County Department of Public Works
Service Area	County of San Joaquin
Agency	Department of Public Works
Address	1810 East Hazelton
City	Stockton
State	California
Zip	95201
Contact Person	Alison Hudson
Phone	(209) 468-3066
Location of Event	Bogga Tract Cmty Ctr Parking Lot, 533 Los Angeles Ave., Stckton, CA 952

C. EPA ID Number

CAH111000616

D. Sponsors

(Check all that apply)

X	County	___	Contractor
___	City	___	Joint (public/private)
___	Private company	___	Non-profit group
___	Other		

E. Program Type

(Check all that apply)

___	Permanent	___	Mobile
X	Temporary (periodic)	___	Recycle only program
___	Other		

F. Location

(Check all that apply)

X	One site	___	At a transfer station
___	Multiple sites	X	On city property
___	Curbside	___	On county property
___	At a sanitary landfill	___	On private property
___	Other		

G. Participation

Number of participants	13	participants
Number of days open	1	days
Population of service area	48,000	people

CIWMB 303
5/85

EPA ID # CAH111000616

H. WASTE VOLUME COLLECTED

		Weight (in pounds)	Management Method(s) Include percentage if more than one method was used						
			DI	FI	L	N	RC	RU	S
1. Flammable & Poison	Flammable solid/liquid	270	100%						
	Bulked flammable liquids	0							
	Oil-base paint	0							
	Poison (excl. aerosols)	0							
	Reactive and explosive	0							
	Subtotal	270							
2. Acid	Inorganic acid	0							
	Organic acid	0							
	Subtotal	0							
3. Base	Inorganic base	0							
	Organic base	0							
	Subtotal	0							
4. Oxidizer	Neutral oxidizers	0							
	Organic peroxides	0							
	Oxiding acid	0							
	Oxiding base	0							
	Subtotal	0							
5. PCB-containing	PCB-containing paint	0							
	Other PCB waste	0							
	Subtotal	0							
6. Aerosol	Corrosive aerosols	0							
	Flammable aerosols	0							
	Poison aerosols	0							
	Subtotal	0							
7. Reclaimable	Antifreeze	0							
	Car batteries	0							
	Fluorescent bulbs	0							
	Latex paint	0							
	Motor oil/oil products	0							
	Oil filters	0							
	Mercury (metallic)	0							
	Subtotal	0							
8. Other	Medical waste	0							
	Household batteries	0							
	Other	0							
	Subtotal	0							
9. Asbestos		0							
10. Grand Total		270							

B. Jurisdiction

Reporting Source	San Joaquin County Department of Public Works
Service Area	County of San Joaquin
Agency	Department of Public Works
Address	1810 East Hazelton
City	Stockton
State	California
Zip	95201
Contact Person	Alison Hudson
Phone	(209) 468-3066
Location of Event	Karl Rose Post #16 Pkg. Lot, 2020 Plymoth Rd., San. Joaquin, CA 95204

C. EPA ID Number

CAH111000617

D. Sponsors

(Check all that apply)

X	County	___	Contractor
___	City	___	Joint (public/private)
___	Private company	___	Non-profit group
___	Other		

E. Program Type

(Check all that apply)

___	Permanent	___	Mobile
X	Temporary (periodic)	___	Recycle only program
___	Other		

F. Location

(Check all that apply)

X	One site	___	At a transfer station
___	Multiple sites	X	On city property
___	Curbside	___	On county property
___	At a sanitary landfill	___	On private property
___	Other		

G. Participation

Number of participants	103	participants
Number of days open	1	days
Population of service area	535,000	people

CIWMB 303
5/95

EPA ID # CAH111000617

H. WASTE VOLUME COLLECTED

		Weight (in pounds)	Management Method(s) Include percentage if more than one method was used						
			DI	FI	L	N	RC	RU	S
1. Flammable & Poison	Flammable solid/liquid	1,870	100%						
	Bulked flammable liquids	700		100%					
	Oil-base paint	4,875		100%					
	Poison (excl. aerosols)	335	100%						
	Reactive and explosive	0							
	Subtotal	7,780							
2. Acid	Inorganic acid	0							
	Organic acid	0							
	Subtotal	0							
3. Base	Inorganic base	0							
	Organic base	0							
	Subtotal	0							
4. Oxidizer	Neutral oxidizers	0							
	Organic peroxides	0							
	Oxiding acid	0							
	Oxiding base	0							
	Subtotal	0							
5. PCB-containing	PCB-containing paint	0							
	Other PCB waste								
	Subtotal	0							
6. Aerosol	Corrosive aerosols	14	100%						
	Flammable aerosols	102	100%						
	Poison aerosols	29	100%						
	Subtotal	145							
7. Reclaimable	Antifreeze	0							
	Car batteries	0							
	Fluorescent bulbs	0							
	Latex paint	2,400					100%		
	Motor oil/oil products	0							
	Oil filters	0							
	Mercury (metallic)	0							
	Subtotal	2,400							
8. Other	Medical waste	0							
	Household batteries	0							
	Other	0							
	Subtotal	0							
9. Asbestos		0							
10. Grand Total		10,325							

B. Jurisdiction

Reporting Source	San Joaquin County Department of Public Works
Service Area	County of San Joaquin
Agency	Department of Public Works
Address	1810 East Hazelton
City	Stockton
State	California
Zip	95201
Contact Person	Alison Hudson
Phone	(209) 468-3066
Location of Event	Kennedy Commy. Ctr. Pkg. Lot, 2800 S. "D" Street, Stockton, CA 95205

C. EPA ID Number

CAH111000618

D. Sponsors

(Check all that apply)

X	County	___	Contractor
___	City	___	Joint (public/private)
___	Private company	___	Non-profit group
___	Other		

E. Program Type

(Check all that apply)

___	Permanent	___	Mobile
X	Temporary (periodic)	___	Recycle only program
___	Other		

F. Location

(Check all that apply)

X	One site	___	At a transfer station
___	Multiple sites	X	On city property
___	Curbside	___	On county property
___	At a sanitary landfill	___	On private property
___	Other		

G. Participation

Number of participants	18	participants
Number of days open	1	days
Population of service area	535,000	people

CIWMB 303
5/95

EPA ID # CAH111000618

H. WASTE VOLUME COLLECTED

		Weight (in pounds)	Management Method(s) Include percentage if more than one method was used						
			DI	FI	L	N	RC	RU	S
1. Flammable & Poison	Flammable solid/liquid	250	100%						
	Bulked flammable liquids	0							
	Oil-base paint	0							
	Poison (excl. aerosols)	110	100%						
	Reactive and explosive	0							
	Subtotal	360							
2. Acid	Inorganic acid	0							
	Organic acid	0							
	Subtotal	0							
3. Base	Inorganic base	0							
	Organic base	0							
	Subtotal	0							
4. Oxidizer	Neutral oxidizers	0							
	Organic peroxides	0							
	Oxiding acid	0							
	Oxiding base	0							
	Subtotal	0							
5. PCB-containing	PCB-containing paint	0							
	Other PCB waste	0							
	Subtotal	0							
6. Aerosol	Corrosive aerosols	1	100%						
	Flammable aerosols	9	100%						
	Poison aerosols	2	100%						
	Subtotal	12							
7. Reclaimable	Antifreeze	0							
	Car batteries	600						100%	
	Fluorescent bulbs	0							
	Latex paint	0							
	Motor oil/oil products	0							
	Oil filters	0							
	Mercury (metallic)	0							
	Subtotal	600							
8. Other	Medical waste	0							
	Household batteries	0							
	Other	0							
	Subtotal	0							
9. Asbestos		0							
10. Grand Total		972							

APPENDIX
BMP-C 1.1

LEVEL-1 REPORT

18-Aug-98

LEVEL	COMPANY	STREET	MAILING ADDRESS	SIC Code	BASIN	NOI
1						
	Quinteros Auto Dismantling	Turnpike Rd.	2966 Turnpike Rd.	5015	WK-64	Yes
	SIMS-LMC Recyclers	Aurora St.	1000 S. Aurora St.	5093	MM-150	Yes
	Charter Way Auto Recyclers	Charter Way	930 E. Charter Way	5015	WK-64	Yes
	Jaguar Heaven	Tillie Lewis Dr.	1433 Tillie Lewis Dr.	5015	SJ-60	Yes
	Reynold's Alum. Recycling Co.	Fremont St.	1903 E. Fremont St.	5093	DW-123	Yes
	Bloom's Auto Parts, Inc.	Turnpike Rd.	2546 Turnpike Rd.	5015	WK-64	Yes
	M&M Auto Dismantling	Jefferson St.	1111 E. Jefferson St.	5015	MM-150	Yes
	Acme Truck Parts & Equipment, I	Wilson Way	1016 S. Wilson Way	5015	MM-150	Yes
	Mel's Auto Dismantlers	Navy Dr.	2219 Navy Dr.	5015	SJ-60	Yes
	Evergreen Glass, Inc.	Tillie Lewis Dr.	1444 Tillie Lewis Dr.	5093	SJ-60	No
	Filter Recovery Systems	Navy Dr.	1625 Navy Dr.	5093	MM-142	No
	Acme Lift Trucks, Inc.	Wilson Way	1049 S. Wilson Way	5015	MM-150	No
	Debco Auto Wrecking, Inc.	Navy Dr.	2345 Navy Dr.	5015	SJ-60	No
	Pat X-Ray Co., Inc.	San Juan Ave.	711 San Juan Ave.	5093	SC-56	No
	Associated Tractor Service, Inc.	Charter Way	1323 W. Charter Way	5015	WK-64	No
	Stockton Metal Recycling	Waterloo Rd.	1533 Waterloo Rd.	5093	SC-57	No

LEVEL	COMPANY	STREET	MAILING ADDRESS	SIC Code	BASIN	NOI
	Cal-West Periodicals	Pony Express Ct.	2136 Pony Express Ct.	5093	DC-69	No
	Delta Paper Stock Co.	Lincoln St.	401 S. Lincoln St.	5093	MM-147	No
	Ben's Auto Dismantler	Navy Dr.	2041 Navy Dr.	5015	SJ-60	No
1-MWHF						
	Stockton Scavenger Association, I	Navy Dr.	P.O. Box 1747	4953	SJ-60	Yes
	Waste Management, Inc.	Fremont St.	P.O. Box 9180	4953	DW-123	Yes
	East Stockton Transfer Station	Weber Ave.	2435 E. Weber Ave.	4953	DW-123	Yes
	Sunrise Sanitation Service, Inc.	Charter Way	P.O. Box 201061	4953	WK-64	No
1-SARA						
	Silgan Containers Manufacturing	Navy Dr.	P.O. Box 270	3411	SJ-60	Yes
	Sierra Nevada Chemical Co.	Industrial Dr.	1010 Industrial Dr.	2812	DC-65	Yes
	PDM Strocal, Inc.	Navy Dr.	2324 Navy Dr.	3441	SJ-60	Yes
	Sigma Circuits, Inc.	Fremont St.	1950 W. Fremont St.	3672	SC-56	Yes
	Van Den Bergh Foods Co.	Waterloo Rd.	P.O. Box 9200	2033	SC-57	Yes
	Corn Products Corp.	Industrial Dr.	P.O. Box 6129	2046	DC-65	Yes
	Applied Aerospace Structures Cor	Airport Way	P.O. Box 6189	3728	DC-65	Yes
	Sumiden Wire Products Corp.	El Pinal Dr.	P.O. Box 8719	3315	DV-50	Yes
	Automatic Switch Co., Inc.	Carlton Ave.	P.O. Box 1995	3613	SC-56	Yes
	Dana Corp.	Industrial Dr.	1550 Industrial Dr.	3714	LJ-80	Yes
	Cargill, Inc.	Producers Dr.	3939 Producers Dr.	2041	DC-65	No

Stormwater Priority Industrial Facility Report

25-Jun-98

Customer	Basin	Total # of PIFs in Basin	USE Score (Basin)	PIF Score (Basin)	Total Score (Basin)	SIC Score	Pollutant Category Score	Pollutant Number Score	PIF Score	TOTAL SCORE
3M National Advertising Co.	SC-56	8	5	4	9	4	2	3	9	81
A&A Concrete Supply, Inc.	DC-69	10	5	4	9	2	2	4	8	72
A-1 Ambulance Service	SC-57	25	5	1	6	3	4	3	10	60
AAA Machine Shop	DW-122	2	5	5	10	4	2	3	9	90
Abracadabra Instant Signs	MS-20	8	5	4	9	4	2	4	10	90
Ace Litho	5M-129	1	5	5	10	4	2	4	10	100
Acme Lift Trucks, Inc.	MM-150	39	4	1	5	2	2	3	7	35
Acme Truck Parts & Equipment,	MM-150	39	4	1	5	2	2	3	7	35
Action Plastics Co.	SC-57	25	5	1	6	4	2	3	9	54
Advanced Metal Plating	LJ-80	11	5	3	8	2	1	3	6	48
Advanced Metal Products	SJ-60	33	5	1	6	4	1	3	8	48
Advanced Mini Storage	SC-55	2	5	5	10	5	3	4	12	120
Advanced Mini Storage	MS-19	4	5	5	10	5	3	4	12	120
AG Signs	CR-46	6	2	4	6	4	2	4	10	60
AG Trucking	LJ-81	12	5	3	8	3	4	3	10	80
Airborne Express	LJ-81	12	5	3	8	3	4	3	10	80
Alpine Printers	SC-57	25	5	1	6	4	2	4	10	60
Amador Screen Arts & Graphics	DW-123	51	4	1	5	4	2	4	10	50
American Battery Co.	SJ-60	33	5	1	6	4	1	3	8	48
American Door Manufacturing	SJ-60	33	5	1	6	2	3	4	9	54
American Medical Response, In	WK-64	30	5	1	6	3	4	3	10	60
American Moulding & Millwork C	SC-57	25	5	1	6	2	3	4	9	54
American Sunny Foods, Inc.	DC-69	10	5	4	9	4	3	4	11	99
Andersen Rack Systems, Inc.	MM-153	4	5	5	10	4	2	3	9	90
Anderson Moulds, Inc.	DW-123	51	4	1	5	4	2	3	9	45
Angel's Marble	LJ-81	12	5	3	8	2	2	4	8	64
Apache Plastics, Inc.	DW-123	51	4	1	5	4	2	3	9	45
Applied Aerospace Structures C	DC-65	14	2	3	5	1	1	3	5	25
Aranda's Tortilla Factory	MM-154	2	5	5	10	4	3	4	11	110
Aranda's Tortilla Factory	WK-64	30	5	1	6	4	3	4	11	66
Arctic Ice Co.	DW-123	51	4	1	5	4	3	4	11	55
Arctic Ice Co.	DW-123	51	4	1	5	4	3	4	11	55
Associated Tractor Service, Inc.	WK-64	30	5	1	6	2	2	3	7	42
Atlas Machine Corp.	DW-123	51	4	1	5	4	2	3	9	45
Automatic Switch Co., Inc.	SC-56	8	5	4	9	1	1	3	5	45
Aztlan Ornamental Iron Fabricati	MM-150	39	4	1	5	4	1	3	8	40
B&R Automotive & Machine	DW-123	51	4	1	5	4	2	3	9	45
Barnes Trucking	SJ-61	1	4	5	9	3	4	3	10	90
Bekins Moving & Storage	SC-55	2	5	5	10	5	3	4	12	120

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Ben's Auto Dismantler	SJ-60	33	5	1	6	2	2	3	7	42
Benno Food Products Corp.	DW-112	8	5	4	9	4	3	4	11	99
Berberian Nut Co.	SJ-60	33	5	1	6	4	3	4	11	66
Billingsly's Charter	DC-66	4	5	5	10	3	4	4	11	110
Bloom's Auto Parts, Inc.	WK-64	30	5	1	6	2	2	3	7	42
Blue Line Distribution, Inc.	DC-69	10	5	4	9	5	3	4	12	108
Boggs Steel Fabrication, Inc.	MM-153	4	5	5	10	4	2	3	9	90
Bokides, Mel Petroleum Co.	SJ-60	33	5	1	6	2	4	3	9	54
Bono's Ornamental Iron Works, I	SC-57	25	5	1	6	4	1	3	8	48
BP Chemicals, Inc.	DC-65	14	2	3	5	4	2	3	9	45
Brooks Products, Inc.	SJ-60	33	5	1	6	2	2	4	8	48
Bryan, Ben Moulding	MM-150	39	4	1	5	2	3	4	9	45
BTI Buster Transportation, Inc.	SC-57	25	5	1	6	3	4	3	10	60
Budget Print Center	DW-123	51	4	1	5	4	2	4	10	50
Bulk Transportation	WK-64	30	5	1	6	3	4	3	10	60
Business Printing Service	DW-123	51	4	1	5	4	2	4	10	50
Cal-West Periodicals	DC-69	10	5	4	9	2	2	3	7	63
California Cedar Products Co.	MM-142	12	3	3	6	2	3	3	8	48
California Mirror Door	MM-150	39	4	1	5	4	1	3	8	40
California Tees	SC-57	25	5	1	6	4	2	4	10	60
Calosso, M & Son, Inc.	DW-123	51	4	1	5	2	3	4	9	45
Can-Veyor, Inc.	MM-159	4	4	5	9	4	1	3	8	72
Carando Machine Works	DW-117	1	2	5	7	4	2	3	9	63
Cargill, Inc.	DC-65	14	2	3	5	1	3	4	8	40
Central Valley Fabricators	SC-57	25	5	1	6	2	1	3	6	36
Cesena Printing	CR-42	1	5	5	10	4	2	4	10	100
Challenger Enterprises	DW-115	4	5	5	10	4	2	3	9	90
Charter Way Auto Recyclers	WK-64	30	5	1	6	2	2	3	7	42
Chemical Transfer Co., Inc.	WK-64	30	5	1	6	3	4	3	10	60
Cheong Fung Co.	SJ-CO					4	2	4	10	
China Noodle Factory	MM-150	39	4	1	5	4	3	4	11	55
Clipper Exxpress	MM-142	12	3	3	6	3	4	3	10	60
Coastal Pacific Food Distributor	MM-141	3	4	5	9	5	4	4	13	117
Coca-Cola Bottling Co.	DV-50	5	5	5	10	3	4	3	10	100
Colberg, Inc.	DW-112	8	5	4	9	2	2	3	7	63
Colorado Printer	DW-123	51	4	1	5	4	2	4	10	50
Commercial Salvage, Inc.	DW-123	51	4	1	5	3	2	3	8	40
Concrete, Inc.	MM-150	39	4	1	5	2	2	4	8	40
Condor Utility Products, Inc.	MM-150	39	4	1	5	2	2	4	8	40
Contech-Velvacon Paints	SJ-60	33	5	1	6	4	2	2	8	48
Copy Quick Printing of Stockton	DW-123	51	4	1	5	4	2	4	10	50
Corn Products Corp.	DC-65	14	2	3	5	1	3	4	8	40

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Froeliger Machine Tool Co.	MM-159	4	4	5	9	4	1	3	8	72
GATX Logistics	LJ-81	12	5	3	8	5	3	4	12	96
GATX Logistics	DC-65	14	2	3	5	5	3	4	12	60
Geiger Manufacturing, Inc.	MM-150	39	4	1	5	4	2	3	9	45
Gemini Limousine Specialties	DW-123	51	4	1	5	3	4	4	11	55
General Transportation, Inc.	LJ-81	12	5	3	8	3	4	3	10	80
Gillis Plating	DW-112	8	5	4	9	4	1	3	8	72
Golden Gate Ornamental Iron W	DW-123	51	4	1	5	4	1	3	8	40
Graphics West Printing	SC-56	8	5	4	9	4	2	4	10	90
Greyhound Bus Lines	DW-126	1	4	5	9	3	4	3	10	90
Grimaud Farms of California	MM-150	39	4	1	5	4	3	3	10	50
Guerrero's Printing	DW-122	2	5	5	10	4	2	4	10	100
Hagan Engineering, Inc.	WK-64	30	5	1	6	4	1	3	8	48
Hahn Tractor Co., Inc.	WK-64	30	5	1	6	4	1	3	8	48
Harbor Signs	MM-150	39	4	1	5	4	2	4	10	50
Heinz, HJ Co., USA	WK-64	30	5	1	6	2	3	4	9	54
HKM Machine & Fabrication, Inc	DW-123	51	4	1	5	4	2	3	9	45
Holstein's Customs	SC-57	25	5	1	6	2	2	3	7	42
Honolulu Freight Service, Inc.	SC-57	25	5	1	6	3	4	3	10	60
Hormel Foods Corp.	SJ-60	33	5	1	6	4	3	3	10	60
Howard's Manufacturing	DW-123	51	4	1	5	2	3	4	9	45
Hubbard Milling Co.	WK-64	30	5	1	6	4	3	4	11	66
Hughes, Dwight P Co.	MM-147	8	4	4	8	2	3	4	9	72
Hunter Douglas, Inc.	LJ-80	11	5	3	8	2	3	4	9	72
HV Printing	MS-20	8	5	4	9	4	2	4	10	90
I-Tre Corporation	MM-150	39	4	1	5	4	3	3	10	50
ICS Printing	DW-123	51	4	1	5	4	2	4	10	50
Impact Promotions	MS-19	4	5	5	10	4	2	4	10	100
Independent Trucking Co., Inc.	WK-64	30	5	1	6	3	4	3	10	60
Industrial Innovations, Inc.	MM-150	39	4	1	5	4	2	3	9	45
Interstate International, Inc.	MM-142	12	3	3	6	3	4	3	10	60
Interstate Truck Leasing Corp.	MM-142	12	3	3	6	3	4	3	10	60
Iris USA Manufacturing, Inc.	LJ-80	11	5	3	8	4	2	3	9	72
Islamic Meat & Poultry Co.	MM-150	39	4	1	5	4	3	3	10	50
J&B Pickle Distributors, Inc.	DW-123	51	4	1	5	4	3	4	11	55
J&R Distribution Services, Inc.	DC-65	14	2	3	5	5	3	4	12	60
Jaguar Heaven	SJ-60	33	5	1	6	2	2	3	7	42
JC Trucking	MM-142	12	3	3	6	3	4	3	10	60
JEB Trucking	MM-150	39	4	1	5	3	4	3	10	50
Jiffi Printing	14-38	4	5	5	10	4	2	4	10	100
JTJ Trucking, Inc.	DC-65	14	2	3	5	3	4	3	10	50
Juencke, Fred J. Trucking	SC-57	25	5	1	6	3	4	3	10	60

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Crown Fiberglass Corp.	WK-64	30	5	1	6	4	2	3	9	54
Custom Food Machinery, Inc.	MM-150	39	4	1	5	4	1	3	8	40
Custom Warehousing, Inc.	DC-65	14	2	3	5	5	3	4	12	60
D&V Machine Shop & Pump Co.	SJ-60	33	5	1	6	4	2	3	9	54
D.O.N. Investments	SJ-60	33	5	1	6	3	4	3	10	60
Dana Corp.	LJ-80	11	5	3	8	1	1	3	5	40
Debco Auto Wrecking, Inc.	SJ-60	33	5	1	6	2	2	3	7	42
Del Monte Foods, USA	DW-123	51	4	1	5	2	3	4	9	45
Delta Anchor Business Forms	CR-46	6	2	4	6	4	2	4	10	60
Delta Cabinets & Millwork	MM-150	39	4	1	5	4	3	4	11	55
Delta Container Corp.	WK-64	30	5	1	6	3	2	3	8	48
Delta Door Co., Inc.	MM-147	8	4	4	8	2	3	4	9	72
Delta Door Co., Inc.	MM-147	8	4	4	8	2	3	4	9	72
Delta Paper Stock Co.	MM-147	8	4	4	8	2	2	3	7	56
Delta Plastics	SC-57	25	5	1	6	4	2	3	9	54
Delta Plating, Inc.	MM-150	39	4	1	5	4	1	3	8	40
Delta Pump Co.	MM-150	39	4	1	5	4	1	3	8	40
Dentoni's Welding Works, Inc.	MM-150	39	4	1	5	4	2	3	9	45
Dependable Trucking	MM-142	12	3	3	6	3	4	3	10	60
Derrel's Mini Storage	DC-66	4	5	5	10	5	3	4	12	120
Designs Plus	14-38	4	5	5	10	4	2	4	10	100
Desktop Publishing & Print Co.	5M-27	1	5	5	10	4	2	4	10	100
DeVecchio Foundry	WK-64	30	5	1	6	2	1	3	6	36
Diamond Truck Body Co.	DW-123	51	4	1	5	4	1	3	8	40
Dietrich Industries, Inc.	DC-66	4	5	5	10	4	1	3	8	80
Dopaco California, Inc.	LJ-80	11	5	3	8	4	3	3	10	80
Ductmate Industries, Inc.	DV-50	5	5	5	10	4	1	3	8	80
E-Z Vent Sheet Metal Products,	SJ-60	33	5	1	6	4	1	3	8	48
Earth Grains	DC-66	4	5	5	10	4	3	4	11	110
East Stockton Transfer Station	DW-123	51	4	1	5	1	2	1	4	20
El Dorado Chemical Co., Inc.	MM-153	4	5	5	10	2	2	3	7	70
Englander-Tualatin Sleep Produ	LJ-81	12	5	3	8	4	3	4	11	88
Evergreen Glass, Inc.	SJ-60	33	5	1	6	2	3	4	9	54
Excellence In Printing Co.	MS-19	4	5	5	10	4	2	4	10	100
Executive Limousines	DW-123	51	4	1	5	3	4	4	11	55
Feed Commodities	DC-65	14	2	3	5	4	3	4	11	55
Fercho, Gary Trucking	DW-123	51	4	1	5	3	4	3	10	50
Fidelity Printing	DW-123	51	4	1	5	4	2	4	10	50
Filter Recovery Systems	MM-142	12	3	3	6	2	1	3	6	36
Five Star Consolidation Service,	LJ-81	12	5	3	8	3	4	3	10	80
Foster, LB Co.	WK-64	30	5	1	6	5	3	4	12	72
Fremont Cabinet Shop	DW-115	4	5	5	10	4	3	4	11	110

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Kelley Trucking	WK-64	30	5	1	6	3	4	3	10	60
Kinko's Copies	14-38	4	5	5	10	4	2	4	10	100
Klein Bros. Warehouse & Trans.	SJ-60	33	5	1	6	5	3	4	12	72
Klein Ranch Operations	SJ-60	33	5	1	6	4	3	4	11	66
KP Graphics, Inc.	CR-46	6	2	4	6	4	2	4	10	60
Laidlaw Transit, Inc.	SJ-60	33	5	1	6	3	4	3	10	60
Landmark Graphics, Inc.	MS-20	8	5	4	9	4	2	4	10	90
Lazorlite Parts, Inc.	LJ-80	11	5	3	8	5	3	4	12	96
Leatherback Industries, Inc.	DC-65	14	2	3	5	2	2	3	7	35
Levi Graphics & Design	DW-123	51	4	1	5	4	2	4	10	50
LFW Mfg. Co., Inc.	MM-147	8	4	4	8	4	1	3	8	64
Lincoln Unified School District	5M-28	1	5	5	10	3	4	3	10	100
London Produce, Inc.	MM-150	39	4	1	5	4	3	4	11	55
M&M Auto Dismantling	MM-150	39	4	1	5	2	2	3	7	35
Magic Ice Products	DW-123	51	4	1	5	4	3	4	11	55
Marine Services	DW-112	8	5	4	9	2	2	3	7	63
Marine Services	DW-112	8	5	4	9	2	2	3	7	63
Mark-Ease Products Co., Inc.	MM-150	39	4	1	5	4	2	4	10	50
Marquardt Trans., Inc.	WK-64	30	5	1	6	3	4	3	10	60
McClain & Son Sign & Crane	DW-115	4	5	5	10	4	2	4	10	100
McCutchen, NJ, Inc.	MM-145	1	3	5	8	4	1	3	8	64
Mel's Auto Dismantlers	SJ-60	33	5	1	6	2	2	3	7	42
Milano, J Co., Inc.	WK-64	30	5	1	6	4	1	3	8	48
Mina-Tree Signs, Inc.	SC-57	25	5	1	6	4	2	4	10	60
Mini-U-Storage	MS-20	8	5	4	9	5	3	4	12	108
Minuteman Press of Stockton	14-37	1	5	5	10	4	2	4	10	100
Mister Space Self Storage	14-35	2	5	5	10	5	3	4	12	120
Mister Space Self Storage	CR-41	1	5	5	10	5	3	4	12	120
Mitchler, EF Co., Inc.	MM-147	8	4	4	8	2	2	4	8	64
Monty's Engraving-Stockton	DW-115	4	5	5	10	4	1	3	8	80
MPI Label Systems, Inc.	DC-69	10	5	4	9	4	2	4	10	90
National Broom Co. of CA, Inc.	MM-150	39	4	1	5	4	2	4	10	50
Nelson Ready Mix Concrete	SJ-60	33	5	1	6	2	2	4	8	48
Nelson-Ball Paper Products, Inc.	SJ-60	33	5	1	6	2	3	4	9	54
Nestle Refrigerated Food Co.	DV-50	5	5	5	10	4	3	4	11	110
Newark Sierra Paperboard Corp.	MM-142	12	3	3	6	2	3	3	8	48
Numeri Tech, Inc.	DW-123	51	4	1	5	4	2	3	9	45
O'Reilly & Son	WK-64	30	5	1	6	2	1	3	6	36
O'Reilly Signs, Inc.	DW-123	51	4	1	5	4	2	4	10	50
OHI Co., Inc.	MM-142	12	3	3	6	4	1	3	8	48
Pallet Man, The	MM-150	39	4	1	5	2	3	4	9	45
Pat X-Ray Co., Inc.	SC-56	8	5	4	9	2	1	3	6	54

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Payless Mini Storage	14-35	2	5	5	10	5	3	4	12	120
PDM Steel Service Centers	MM-159	4	4	5	9	4	1	3	8	72
PDM Strocal, Inc.	SJ-60	33	5	1	6	1	1	3	5	30
Pelton Shepherd Industries, Inc.	LJ-80	11	5	3	8	4	2	4	10	80
Percival Machine & Supply	DW-123	51	4	1	5	4	2	3	9	45
Perez, Louis Trucking	MM-153	4	5	5	10	3	4	3	10	100
Personal Touch Screen Printing	SC-57	25	5	1	6	4	2	4	10	60
PIP Printing	DW-120	1	5	5	10	4	2	4	10	100
PIP Printing	SJ-CO					4	2	4	10	
Piper Pacific Agricultural Dist., I	DW-123	51	4	1	5	4	1	3	8	40
Port City Steel Fabricators	MM-150	39	4	1	5	4	1	3	8	40
Portside Machine Shop, Inc.	SC-56	8	5	4	9	4	2	3	9	81
Power Logistics	LJ-81	12	5	3	8	5	3	4	12	96
Pre-Peeled Potato Co., Inc.	DC-165	2	1	5	6	4	3	4	11	66
Precision Printed Matter	SC-57	25	5	1	6	4	2	4	10	60
Premier Drywall Tool Co.	FC-72	2	5	5	10	4	1	4	9	90
Printing Press	SC-57	25	5	1	6	4	2	4	10	60
Prism Team of Stockton	DC-69	10	5	4	9	5	3	4	12	108
Production Chemical Mfg., Inc.	DW-123	51	4	1	5	2	2	3	7	35
Public Storage	5M-25	2	5	5	10	5	3	4	12	120
Public Storage	CR-43	1	4	5	9	5	3	4	12	108
Public Storage	CR-46	6	2	4	6	5	3	4	12	72
QB Rebuilders, Inc.	SJ-60	33	5	1	6	4	1	3	8	48
Quality Print Shop	DW-123	51	4	1	5	4	2	4	10	50
Quikrete, Inc.	MM-150	39	4	1	5	2	2	4	8	40
Quinteros Auto Dismantling	WK-64	30	5	1	6	2	2	3	7	42
Rare Parts, Inc.	DW-108	1	1	5	6	4	1	3	8	48
Raymond Agricultural Warehous	SJ-60	33	5	1	6	5	3	4	12	72
Record, The	DW-123	51	4	1	5	4	2	4	10	50
Reliance Cold Storage Co., Inc.	SJ-60	33	5	1	6	5	3	4	12	72
Rendon Sign Services	SC-57	25	5	1	6	4	2	4	10	60
Reynold's Alum. Recycling Co.	DW-123	51	4	1	5	2	1	3	6	30
Roadway Package System	LJ-80	11	5	3	8	3	4	3	10	80
Rotor Blades, Inc.	MM-150	39	4	1	5	2	1	3	6	30
San Joaquin Co. Motor Pool Divi	MM-150	39	4	1	5	3	4	3	10	50
San Joaquin County	MM-150	39	4	1	5	5	3	4	12	60
San Joaquin Packaging Corp.	SJ-60	33	5	1	6	4	3	3	10	60
Santa Fe Railway, Inc.	MM-150	39	4	1	5	3	2	3	8	40
Sardee Industries, Inc.	MM-159	4	4	5	9	4	1	3	8	72
Scott Screen Arts, Inc.	DW-123	51	4	1	5	4	2	4	10	50
Scott Sign Co.	DW-123	51	4	1	5	4	2	4	10	50
Sierra Lumber Manufacturers, In	MM-147	8	4	4	8	2	3	4	9	72

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Sierra Nevada Chemical Co.	DC-65	14	2	3	5	1	2	3	6	30
Sierra Pacific Distribution Servic	MM-141	3	4	5	9	5	3	4	12	108
Sigma Circuits, Inc.	SC-56	8	5	4	9	1	1	3	5	45
Sigma Circuits, Inc.	SC-56	8	5	4	9	2	1	3	6	54
Sign Shop, The	MS-20	8	5	4	9	4	2	4	10	90
Signco	CR-46	6	2	4	6	4	2	4	10	60
Silgan Containers Manufacturing	SJ-60	33	5	1	6	1	1	3	5	30
Silvey, JP Trucking	MM-147	8	4	4	8	3	4	3	10	80
Simard Printing Co.	DW-123	51	4	1	5	4	2	4	10	50
SIMS-LMC Recyclers	MM-150	39	4	1	5	2	1	3	6	30
Skibo's Machine Works	DW-123	51	4	1	5	4	2	3	9	45
SMART	DW-123	51	4	1	5	3	2	3	8	40
SNAPS	MS-20	8	5	4	9	4	2	4	10	90
Snyder Lithograph, Inc.	SC-57	25	5	1	6	4	2	4	10	60
Sonoco Products Co., Inc.	SJ-60	33	5	1	6	4	3	3	10	60
Southern Pacific Transportation	WK-64	30	5	1	6	3	2	3	8	48
Space Station Mini Storage	SC-57	25	5	1	6	5	3	4	12	72
Spectrum Signs	DW-123	51	4	1	5	4	2	4	10	50
Speedy Sign-A-Rama USA	CR-40	1	5	5	10	4	2	4	10	100
Stanley Adams Machine Co., Inc	DW-123	51	4	1	5	4	2	3	9	45
Stanton Industries of CA, Inc.	LJ-80	11	5	3	8	4	3	4	11	88
Statco Engineering & Fabricator	LJ-81	12	5	3	8	4	1	3	8	64
Stephen's Five Star Marina	DW-112	8	5	4	9	3	4	3	10	90
Stockton Ambulance Co., Inc.	DW-123	51	4	1	5	3	4	3	10	50
Stockton Bin & Pallet Repair, Inc	WK-64	30	5	1	6	2	3	4	9	54
Stockton Blue Print Co.	SC-57	25	5	1	6	4	2	4	10	60
Stockton City Taxi Cab Co.	DW-123	51	4	1	5	3	4	3	10	50
Stockton Cogen Facility	DC-65	14	2	3	5	2	2	3	7	35
Stockton Developmental Center	SC-57	25	5	1	6	5	3	4	12	72
Stockton Engine & Machine Sho	DW-123	51	4	1	5	4	2	3	9	45
Stockton Fiberglass	MS-20	8	5	4	9	2	2	3	7	63
Stockton Further Processing	MM-142	12	3	3	6	4	3	3	10	60
Stockton I-5 Mini Storage	5M-25	2	5	5	10	5	3	4	12	120
Stockton Machine Shop, Inc.	MM-150	39	4	1	5	4	2	3	9	45
Stockton Mailing & Print Service,	CR-46	6	2	4	6	4	2	4	10	60
Stockton Metal Recycling	SC-57	25	5	1	6	2	1	3	6	36
Stockton Poultry Market	MM-150	39	4	1	5	4	3	3	10	50
Stockton Sanitary Wash Rack	SJ-60	33	5	1	6	3	4	3	10	60
Stockton Scavenger Association	SJ-60	33	5	1	6	1	2	1	4	24
Stockton Secured Storage	DW-112	8	5	4	9	5	3	4	12	108
Stockton Sign Co.	SC-56	8	5	4	9	4	2	4	10	90
Stockton Tri Industries, Inc.	MM-154	2	5	5	10	2	1	3	6	60

Customer	Basin	Total # of PIFs In Basin	USE Score (Basin)	PIF Score (Basin)	Total Score (Basin)	SIC Score	Pollutant Category Score	Pollutant Number Score	PIF Score	TOTAL SCORE
Stockton Unified School District	DV-50	5	5	5	10	3	4	3	10	100
Sumiden Wire Products Corp.	DV-50	5	5	5	10	1	1	3	5	50
Sunrise Sanitation Service, Inc.	WK-64	30	5	1	6	1	2	1	4	24
Sunset Disposal Service, Inc.	WK-64	30	5	1	6	3	2	3	8	48
Swift Transportation Co., Inc.	MM-142	12	3	3	6	3	4	3	10	60
TaB Warehouse & Distribution	DC-69	10	5	4	9	5	3	4	12	108
Tap Plastics, Inc.	14-38	4	5	5	10	4	2	4	10	100
Taylor, John Fertilizers	WK-64	30	5	1	6	2	2	3	7	42
Team Legends Printed Apparel	DW-112	8	5	4	9	4	2	4	10	90
TechnoTrim, Inc.	DC-69	10	5	4	9	4	2	4	10	90
Teichert Precast	DW-123	51	4	1	5	2	2	4	8	40
Tek Packaging, Inc.	DC-65	14	2	3	5	4	2	3	9	45
Thorsen Trucking, Inc.	WK-64	30	5	1	6	3	4	3	10	60
Tony's Express, Inc.	DC-69	10	5	4	9	3	4	3	10	90
Toys-R-Us, Inc.	SJ-60	33	5	1	6	5	3	4	12	72
TPS Labels, Inc.	LJ-80	11	5	3	8	4	2	4	10	80
U-Haul Co.	MS-19	4	5	5	10	5	3	4	12	120
U-Stor-It	MS-20	8	5	4	9	5	3	4	12	108
U.S. Postal Service	LJ-80	11	5	3	8	3	4	3	10	80
Union Ice	MM-141	3	4	5	9	5	4	4	13	117
Union Pacific Railroad Co., Inc.	DC-165	2	1	5	6	3	2	3	8	48
Union Planing Mill, Inc.	MM-150	39	4	1	5	2	3	4	9	45
United Facilities, Inc.	LJ-81	12	5	3	8	5	3	4	12	96
Valley Pattern & Mfg., Inc.	MM-150	39	4	1	5	2	1	3	6	30
Valley Plastics & Marble, Inc.	SC-57	25	5	1	6	4	2	3	9	54
Valley Rubber & Gasket Co., Inc	LJ-81	12	5	3	8	4	2	4	10	80
Valley Sanitation	WK-64	30	5	1	6	3	2	3	8	48
Valley Tomato Products, Inc.	DC-65	14	2	3	5	2	3	4	9	45
Valley's Pride Food Products, In	MM-150	39	4	1	5	4	3	4	11	55
Van Den Bergh Foods Co.	SC-57	25	5	1	6	1	3	4	8	48
Viktron Lika Corp.	MM-142	12	3	3	6	2	1	3	6	36
Villa's Ornamental Iron Works	DW-123	51	4	1	5	4	1	3	8	40
Vision Printing	SC-57	25	5	1	6	4	2	4	10	60
Waste Management, Inc.	DW-123	51	4	1	5	1	2	1	4	20
Wesprint Corp.	LJ-81	12	5	3	8	4	2	4	10	80
Western Data Label	DC-69	10	5	4	9	4	2	4	10	90
Western Spray Painting, Inc.	FC-72	2	5	5	10	2	1	3	6	60
Williams Tank Lines	SJ-60	33	5	1	6	3	4	3	10	60
Williams, LR Co., Inc.	MM-150	39	4	1	5	4	1	3	8	40
Woolley Custom Engine Rebuildi	DW-123	51	4	1	5	4	2	3	9	45
Yee, Lois Cosmetics, Inc.	WK-64	30	5	1	6	2	2	3	7	42
Yellow Cab Co.	DW-123	51	4	1	5	3	4	3	10	50

APPENDIX
BMP-C 1.4

GUIDELINES FOR STORMWATER INDUSTRIAL FACILITIES MONITORING PLAN

Prepared By
City of Stockton
Department of Municipal Utilities
Stormwater Division

STOCKTON
A COMMUNITY WORKING
TO IMPROVE THE DELTA

SECTION 1.0: INTRODUCTION

1.1 Background

The City requires industrial facilities to submit and implement a program to control water pollution effectively during the year from their sites. Furthermore, Federal regulations for controlling pollutants in water runoff discharges were issued by the U.S. Environmental Protection Agency (EPA) in 1990. These regulations require that a National Pollutant Discharge Elimination System (NPDES) Permit be obtained for stormwater discharges associated with industrial activities. In California, the EPA has delegated its authority to issue NPDES permits to the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB).

In 1993, the U.S. EPA required the City to prepare a Part 2 NPDES Stormwater Permit Application. As part of the application process, Federal guidelines *40 CFR 122.26 (d)(2)(iv)(C)(1)* require the establishment of procedures for implementing Best Management Practices (BMPs) that identify priority industrial facilities and municipal waste facilities discharging into the City storm drain system for the purpose of establishing priorities for inspections and instituting control measures for such discharges.

The City created a series of BMPs designed to meet this regulation and to manage stormwater discharges into the City's stormwater system. The BMPs were later incorporated into the City's NPDES Stormwater Permit by reference, which created the Stormwater Management Program (SWMP). As part of the City's program, industrial facilities must be reviewed and Priority Industrial Facilities (PIFs) identified. Within the SWMP, PIFs are considered industrial facilities which are required to file a Notice of Intent with the SWRCB to be covered under the California General Industrial Activities Stormwater Permit.

1.2 Purpose and Scope of This Manual

This manual has been written to assist City staff with overseeing and enforcing the SMP.

1.2.1 Industrial Activities and Their Impact on Stormwater Quality

Stormwater runoff continues to be harmful to the waters of the United States. Runoff from land modified by human activities can harm surface waters by changing hydrologic patterns and by elevating pollutant concentrations and loadings. Stormwater runoff may contain or mobilize

high levels of contaminants, such as sediment, suspended solids, nutrients, heavy metals, pathogens, toxins, oxygen-demanding substances, and floatables.

1.3 Industrial Activities Covered

1.3.1 SARA Title III Facilities (under Section 313)

Hazardous waste treatment, storage, disposal and recycling facilities with SICs 5015 and 5093; landfills; and NSPS facilities.

1.3.2 Mandatory Manufacturing Facilities Activities

SICs 24 (except 2411 and 2434), 26 (except 265 and 267), 28 (except 283 and 285), 29, 311,32 (except 323), 33, 3441, and 373.

1.3.3 Transportation Facilities

SICs 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171.

1.3.4 Manufacturing Facilities with Material Exposure.

SICs 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39.

1.3.5 Warehouse and Storage Facilities with Material Exposure

SICs 4221-4225.

1.4 Priority Industrial Facilities

The SWMP has a three-tier prioritization process that categorizes a facility as Level 1, 2, or 3. Industries categorized as Level 1 will be the focus of the City's inspection and monitoring program. Level 1 facilities will be further categorized as Major or Minor, with Major facilities inspected annually and Minor facilities inspected at least once in a five-year period. The remaining Level 2 and Level 3 facilities will operate under the State *General Permit for Industrial Activities* (General Permit) but may be added to the monitoring program should be their operational status change.

SECTION 2.0: GUIDELINES FOR DETERMINING LEVEL 1 FACILITIES

2.1 Purpose

The purpose of these guidelines is to describe the City of Stockton's methods, including policies and procedures, to determine Level 1 facilities.

2.2 Background

The SWMP has a three-tier prioritization process which categorizes a facility as Level 1, 2, or 3. Industries categorized as Level 1 will be the focus of the City's inspection and monitoring program. The remaining Level 2 and Level 3 facilities will operate under the State General Permit but may be added to the monitoring program if their operational status changes. The SWMP identifies Level 1 facilities as:

- SARA Title III facilities (under Section 313);
- Hazardous waste treatment, storage, disposal and recycling facilities;
- Landfills; and
- Any other industries determined to be of significance to the City. **(NOTE: Significance of determination may be based on factors that have the potential to cause pollutants to enter stormwater or drainage facilities, including but not limited to oxygen-demanding substances, history of spill events for each facility, responsiveness to spill events, onsite containment provisions, and/or other similar factors.)**

2.3 SARA Facilities

Title III of the *Superfund Amendments and Reauthorization Act* (SARA) of 1986 establishes reporting requirements for the purpose of providing the public with information concerning the presence of hazardous chemicals. To be covered under SARA Title III (Section 313), industrial facilities must meet the following criteria:

- Have SIC codes 20 through 38 (manufacturing);
- Have 10 or more equivalent full time employees; and
- Handle or otherwise use more than 10,000 pounds annually of a listed (for purposes of SARA) toxic chemical. (Currently 300+ listed)
- Process or manufacture 25,000 pounds annually of a listed toxic chemical.

2.4 Hazardous Waste Treatment, Storage, Disposal Facilities

Definition: Facilities operating under interim status or a General Permit under Subtitle C of the Federal *Resource Conservation and Recovery Act* (RCRA).

2.5 Recycling Facilities

Recycling facilities are identified as facilities having standard industrial classification numbers [SICs] 5015 or 5093. These codes include metal scrap yards, battery reclaimers, salvage yards, auto dismantlers and wreckers, and other recycling facilities engaged in assembling, breaking up, sorting, and wholesale distribution of scrap and waste material, such as, but not limited to, bottles, wastepaper, textiles, and wood.

2.6 Landfill Facilities

Definition: Facilities operating under interim status or a General Permit under Subtitle D of RCRA and all municipal waste handling facilities, land application sites and sewage sludge handling facilities.

2.7 Other Significant Industries

2.7.1 SARA Equivalent Facilities

Within the City of Stockton, there are presently 11 SARA facilities classified as Level 1, and approximately 50 additional facilities that are currently Level 2 with SIC codes 20 through 38. Of these facilities, those with more than 10 equivalent full-time employees would remain classified as Level 2, since they would otherwise be listed as a SARA facility. Of the remaining facilities, those that are SARA-equivalent can be approximately determined through review of data currently reported to the Office of Emergency Services (OES). A site visit will be the determining factor in listing industries as Level 1.

2.7.2 Reported Spill Events

PIFs will be inspected if the facility has reported a spill event to OES. After the initial site inspection, depending on exposure and potential for environmental harm resulting from the spill event, the City will make a determination whether or not to list the facility as a Level 1. The City will perform a second inspection within 12 months of the initial inspection and

will reevaluate whether or not to list the facility as a Level 1.

2.7.3 Other Factors for Determination

Other industries that may be included as Level 1 are those that handle large volumes of oxygen-demanding materials (such as, but not limited to, sugar or iron), since large releases have the potential of a detrimental effect on receiving waters. A list of these facilities will be compiled based on OES reporting data.

The sources for pollution and their pathways are too numerous, extensive, or unknown at this time to initially list all of them. When the City determines a facility to have significant sources of non-storm runoff or to have reasonable potential for pollution of the City stormwater system, that facility will be classified as a Level 1. Again, a site visit will be the determining factor as to inclusion as a Level 1.

2.8 Summary

The City will identify PIFs and classify them as Level 1, 2, or 3 for the purpose of inspection and monitoring. Facilities classified as Level 1 will be further categorized as Major PIFs and Minor PIFs. The City will annually assess the classification of Level 1 facilities within its service area by the following methods:

- Obtain an updated listing of SARA Title III facilities.
- Review SIC codes for existing and new businesses to update the Level 1 listing. Those facilities determined to be equivalent to SARA Title III facilities will be included as Level 1.
- Site inspection of Level 1 previously classified as "Major" facilities.
- Obtain an updated list from the SWRCB of Industrial Stormwater Permits issued for the Stockton area.

Based on the data reviewed, Level 1 facilities will be composed of the following:

- SARA Title III facilities (under Section 313);
- Hazardous waste treatment, storage, disposal and recycling facilities;
- Landfills; and
- Any other industries determined to be of significance to the City. **NOTE:** Significance of determination may be based on factors that have the potential to cause pollutants to enter stormwater or drainage facilities, including but not limited to oxygen-demanding substances, history of spill events for each facility.

The City will review other industries believed to be significant as Level 1 facilities if they meet one or more of the following criteria:

- Facilities that are determined to be SARA equivalent;
- Facilities that have a risk of releasing large volumes of oxygen-demanding materials;
- Facilities that have a history of spills;
- Facilities found to have significant sources of either non-storm runoff or potential pollution source.

It should be noted that for the criteria defined above, the final determination for inclusion as a Level 1 classification will be based on a site inspection.

Once Level 1 facilities are defined, major and minor facilities will be determined.

- Major facilities will be inspected annually; and
- Minor facilities inspected once in a five-year period.

SECTION 3.0: GUIDELINES FOR DETERMINING MAJOR AND MINOR LEVEL 1 FACILITIES

3.1 Purpose

The purpose of this guideline is to describe the City of Stockton's policies and procedures to categorize Level 1 facilities as either Major or Minor and to rank all industrial facilities in an objective manner.

3.2 Background

The SWMP has a three-tier prioritization process that categorizes a facility as Level 1, 2, or 3. Industries categorized as Level 1 will be the focus of the City's inspection and monitoring program. Level 1 facilities will be further categorized as Major or Minor, with Major facilities inspected annually, and Minor facilities inspected at least once in a five-year period. The remaining Level 2 and Level 3 facilities will operate under the State General Permit but may be added to the monitoring program if their operational status changes. The SWMP identifies Level 1 facilities as:

- SARA Title III facilities (under Section 313);
- Hazardous waste treatment, storage, disposal and recycling facilities;
- Landfills; and
- Any other industries determined to be of significance to the City. Any other industries determined to be of significance to the City. **(NOTE: Significance of determination may be based on factors that have the potential to cause pollutants to enter stormwater or drainage facilities, including but not limited to oxygen-demanding substances, history of spill events for each facility, responsiveness to spill events, onsite containment provisions, and/or other similar factors.)**

3.3 Method

There are several considerations taken into account in developing classification criteria, including:

- Weighing both potential for stormwater contamination and watershed quality (per the permit requirements);
- Utilizing existing City data wherever possible, or data that is obtainable with relative ease;

- Providing a spread in scoring; and
- Developing a reasonable, impartial, and practical method for scoring, to the maximum extent practicable.

The City has developed a database and scoring system for ranking PIFs which takes into account the SIC classification, the variety of potential pollutants on site, and the percentage of industrial area in the watershed.

3.4 Scoring System

The scoring system is based on a summation of weighted scores for the various criteria. Two main factors identified in the scoring system are the site-specific potential risk of stormwater pollution and characteristics of the land uses within the watershed.

The City's system has low scores being the highest risk facilities. The description, scoring, and weighting for each factor are listed below:

3.5 Risk of Stormwater Pollution

Risk of stormwater pollution is subdivided into four categories: (1) types or classifications of facilities (SIC); (2) types of materials stored and/or used on-site (PC); (3) total number of types of materials on site (PN); and (4) the size of a facility (FS). The following criteria are used:

3.5.1. **SIC Score (SIC-SC)**: SIC Scores are given as follows:

SCORE	SIC CODES	SIC-SC Scoring Factor (x10)
1	Mandatory Level 1 SARA Title III facilities (under Section 313); hazardous waste treatment, storage, disposal and recycling facilities with SICs 5015 and 5093; and landfills.	
2	Mandatory Level 2 NSPS facilities; manufacturing facilities with SICs 24 (except 2411 and 2434), 26 (except 265 and 267), 28 (except 283 and 285), 29, 311,32 (except 323), 33, 3441, and 373.	

3 Mandatory Level 2
Transportation facilities with SICs 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171.

4 Conditional Level 3
Manufacturing facilities with material exposure and SICs 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39.

5 Conditional Level 3
Warehouse and storage facilities with material exposure and SICs 4221-4225.

The rationale for these criteria is that certain types of industries are more likely to have operations that increase the risk of stormwater pollution.

3.5.2. **Pollutant Category Score (PC-SC)**: Score is assigned based on the highest pollutant category on site as follows:

SCORE	Pollutant Category	PC-SC Scoring Factor (x5)
1	Metals/Toxic Organics	
2	Chemicals/Pesticides	
3	Biochemical Oxygen Demand/Petroleum	
4	Oil and Grease	
5	Solids (erosion/sedimentation)	

The rationale behind using these criteria is that certain materials are more likely to have deleterious effects on stormwater quality.

3.5.3. **Pollutant Number Score (PN-SC)**: Based on total number of pollutant categories on site (see Section A.2. of these Guidelines)

SCORE	Total Categories	PN-SC Scoring Factor (x5)
1	5	
2	4	
3	3	
4	2	
5	1	

3.5.4. **Facility Size Score (FS-SC)**: The facilities would be ranked according to gross parcel size in square footage with a score between zero and 5 (zero being largest facility and 5 being the smallest). Facilities are ranked in a uniform graduation; *i.e.*, for 100 facilities scores would be 0.0, 0.05,0.10, . . . , 4.95, 5.0. Parcel information will come from the City GIS system.

The rationale behind this is that larger facilities will generally tend to have more materials stored on site and have more operations, therefore, having a greater potential risk of stormwater pollution.

Facility Size (According to City GIS System)	Factor
(10+ Acres)	0 (largest parcel)
(10-5)	2 (larger than average)
(5-2)	3 (medium parcel)
(2-1)	4 (smaller than average)
(less than 1)	5 (smallest size)

FS-SC Scoring Factor (x5)

3.6 Watershed Quality

The City will rank basins based on a combination of percent zoned industrial area and total number of PIFs in the basin. The rationale for this is that highly industrial areas in aggregate contribute a greater potential risk of pollution than other land uses.

3.6.1 Basin Score (BA-SC): Based on the zoned industrial area and number of PIFs in the basin:

Number PIFs In Basin	Number PIF Score
21 +	1
16 - 20	2
11 - 15	3

% Zoned Industrial in Basin	ZI Score
51 - 100	1
31 - 50	2
16 - 30	3

Number PIFs in Basin, cont.	Number PIF Score, cont.
6 - 10	4
0 - 5	5

% Zoned Industrial in Basin, cont.	ZI Score cont.
6 - 15	4
0 - 5	5

BA - SC = (Number of PIF Score) + (ZI Score)
BA - SC Scoring Factor (x5)

SECTION 4.0: SUMMARY OF SCORING SYSTEM

Score	Description	Range	Factor	Minimum Score	Maximum Score
SIC	Standard Industrial Classification	1-5	10	10	50
PC	Highest pollutant category on-site	1-5	5	5	25
PN	Total number of pollutant categories on-site	1-5	5	5	25
FS	Area of facility (as ranked against other facilities)	0-5	5	0	25
ZI	Industrial zoning and number of PIFs in watershed	2-10	5	10	50
			Minimum /Maximum Score TOTALS	30	175

The final determination for listing a facility as a Major or Minor Level 1 shall be a site visit.

SECTION 5.0: CONDITIONS OF ACCEPTANCE--FACT SHEET

5.1 Purpose

The purpose of this fact sheet is to describe the City of Stockton's Industrial Condition of Acceptance (COA) program.

5.2 Background

Part of the SWMP is an *Industrial Condition of Acceptance* (COA) system, which establishes procedures for the City to implement and enforce the program. Level 1 Priority Industrial Facilities (PIFs) will be covered under the COA, and issued individual COAs. The COA will be based on the California General Industrial Permit as modified by the City of Stockton. The Level 2 and Level 3 facilities will operate under the State General Permit.

5.3 Features of the Program

• Each Level 1 industry will be notified that it must obtain a COA.
• The COA will specify, in detail, requirements for self-monitoring, sampling, reporting, notification, and record keeping; the applicable effluent limitations; and penalties for non-compliance.
• After a site inspection, the City has the option of adding special terms if a facility warrants specific site attention.
• Terms and conditions can be modified during the term of the COA by the City (30 days notice, and reasonable time to comply with changes).
• COAs issued for up to five-year period.
• Facility will complete Stormwater Pollution Prevention Plan (SWPPP)

SECTION 6.0: CERTIFICATE OF EXEMPTION - FACT SHEET

6.1 Purpose

The purpose of this fact sheet is to describe the City of Stockton's monitoring exemption program.

6.2 Background

The California General Industrial Permit (General Permit) requires industrial facilities to perform stormwater monitoring. If an industry can demonstrate that it does not have exposure of industrial activities to stormwater, the City may decide to issue a monitoring exemption certificate. The certificate will relieve the facility from the annual sampling requirements of the General Permit.

The exemption program will mirror the existing State program and will require, at a minimum:

- Site inspections by City staff;
- SWPPP review; and
- Review of monitoring data

6.3 Features of the Certificate Program

• Application for exemption by specific user for a specific site.
• Submittal of NOI and SWPPP to Municipal Utilities Department.
• Submittal of previous sampling data.
• Meet requirements of the California General Industrial Permit.
• Issued for a period not to exceed five years.
• Renewable with approval from City.

The application will be identical to the State's *Notice of Self-Certification*, which involves a questionnaire on potential pollution sources, a list of required documents, and a signatory page.

A site visit will be the determining factor as to whether a Certificate of Exemption is issued.

SECTION 7.0: STORMWATER ESCALATING ENFORCEMENT RESPONSE GUIDELINES

7.1 Purpose

The purpose of this fact sheet is to describe the City of Stockton's Enforcement Response Plan for the Stormwater Management Program.

7.2 Background

The City's legal authority to impose regulations and controls within the City, including control of stormwater discharges, is granted under the State of California's Constitution as framed in the City's Charter. Article III, Section I, of the City Charter states in relevant part:

> *" The City of Stockton shall have the power to make and enforce all ordinances and regulations in respect to municipal affairs . . . It shall also have the power to exercise or act pursuant to any and all rights, privileges, powers or procedures heretofore or hereafter established, granted or prescribed by any law of the State, by this Charter, or other lawful authority . . . "*

Such ". . . other lawful authority . . . " encompasses the Federal Clean Water Act's ("Act") requirements for the Stormwater Permit Program as set forth in *40 CFR Section 122.26.* The Act mandates that the permittee of a municipal storm system have, at a minimum, the following legal authority.

40 CFR 122.26(d)(2)(i)(A)

A demonstration that the applicant can control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by stormwater discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity.

40 CFR 122.26(d)(2)(i)(B)

A demonstration that the applicant can prohibit through ordinance, order, or similar means, illicit discharge to the separate storm sewer.

40 CFR 122.26(d)(2)(i)(C)

A demonstration that the applicant can prohibit through ordinance,

order, or similar means, the discharge to a separate storm sewer of spills, dumping, or disposal of material other than storm water.

40 CFR 122.26(d)(2)(i)(D)

A demonstration that the applicant can, through interagency agreements among co-applicants, control the contribution of pollutants from one portion of the municipal system to another portion of the municipal system.

7.3 Method

The enforcement process will generally consist of two steps, Notification of Noncompliance and issuance of a Compliance Order. The complexity and power of the Compliance Order will increase with the severity of the violation. Isolated, nonhazardous discharges to the storm system may elicit a phone call and a Notice of Violation. Recurring or chronic discharges may warrant stronger compliance orders or legal orders.

The *Enforcement Response Guidelines* will include the following elements:

- Description of how the Municipal Utilities Department will investigate instances of noncompliance.
- Outlines of the Municipal Utilities Department's staff involved in each progressive enforcement step.
- Description of the type of escalated enforcement actions that will be taken in response to anticipated types of industrial user violations and time periods within which to initiate and follow up these actions.
- Adequate reflection of the Municipal Utilities Department's responsibility to enforce all applicable standards and requirements for the Stormwater Management Program.

STORMWATER ESCALATING ENFORCEMENT RESPONSE GUIDELINES			
Municipal Code Sec.	**Violation Type/Nature**	**Enforcement Response Progressive Steps**	**Personnel**
SEC. 7-809	Unpermitted/Non-permitted Discharge - Level 1 Facilities	(a) Phone Call & NOV (b) NOV & Fine (c) Cease and Desist (d) Civil Action	ECO DDS D/CA D/CA
SEC. 7-812	Illicit Connection-Industrial • Continuing • Failure to Disconnect • Re-establishing Connection	(a) NOV (b) NOV & Fine (c) Compliance Schedule (d) Civil Action	ECO DDS D D/CA
SEC. 7-805	Prohibited Discharge • First Occurrence • Recurring - 2nd event • Recurring - 3rd event	(a) NOV or NOC (b) NOV & Fine (c) Cease & Desist (c) Civil Action	ECO DDS D\CA D\CA
SEC. 7-837	Failure or Improper Monitoring by Level 1 Facilities	(a) NOV (b) NOV & Fine	ECO DDS
SEC. 7-837	Inspection Violations • Denial Entry • Restricted Inspection/Sampling Denial Records • Review • Copies	 (a) NOV (b) Inspection Warrant (a) NOV (b) Inspection Warrant	 DDS DDS/CA DDS DDS\CA
SEC. 7-839	Failure to Report Spill-No Harm Failure to Report Spill-Harm	(a) NOV & Fine (b) Civil Action	D D/CA
SEC. 7-809	Reporting • Late • Incomplete	(a) Phone Call & NOV (<5 Days) (b) NOV & Fine (<30 Days)	ECO DDS
SEC. 7-849	Compliance Schedule • Failed Milestone Date • Failure to Complete	(a) NOV & Fine (b) Civil Action	D/CA D/CA

Actions are listed in order of escalation value with corresponding personnel involvement.

Fines for isolated violations will escalate in accordance with severity of violation, history of noncompliance, duration of noncompliance, and good faith commitment. Fines for all violations will escalate in accordance with severity of the violation, harm to the environment, and economic benefit to the violator, up to the maximum amount allowed by state and local law. The minimum value of a fine shall be one thousand dollars ($1,000.00).

The City shall notify the appropriate RWQCB, by letter, in the event any Cease and Desist Order or civil action is taken against any industrial user.

7.4 Definitions for Terms Used in Enforcement Response Guidelines

ECO	Environmental Control Officer
DDS	Deputy Director Stormwater
D	Director of Municipal Utilities
CA	City Attorney
DA	District Attorney
NOV	Notice of Violation
NOC	Notice to Clean
Fine	Monetary penalty assessed by the Municipal Utilities Department
Cease and Desist Order	Formal order requiring a user to stop violations
Harm	Discharge which endangers the public, harms the environment, or exceeds any standard listed within the California Toxic Rule.
Isolated violation	A single violation within a rolling one- year time period.
Recurring violation	A second violation within a rolling one- year time period.

7.5 Time Frame for Enforcement Response

7.5.1 All violations will be identified and documented within five days of receiving ALL necessary compliance information.

7.5.2 Initial enforcement responses [involving contact with the industrial users and requesting information on corrective or preventive action(s)] will occur within 30 days of the violation detection.

7.5.3 Follow up actions for continuing or recurring violations will be taken within 60 days of the initials enforcement responses.

7.5.4 Violations that threaten health, property or environmental quality are considered emergencies and will receive immediate responses.

7.6 Enforcement Response--Municipal Code Sections Utilized

- **SEC. 7-846.1. Administrative Penalties.** The City may issue an administrative complaint to any person who violates any requirement adopted or ordered by the City pursuant to this part.

- **SEC. 7-846. Administrative Enforcement Powers.**

  - **Cease and Desist Order.** When an authorized enforcement officer finds that a discharge has taken place or is likely to take place in violation of this part, the officer may issue an Order to Cease and Desist such discharge.

  - **Notice to Clean.** Whenever an authorized enforcement officer finds a condition that may increase pollutants entering the City stormwater system or a non-stormwater discharge entering the City storm drain system, he or she may give a written notice to the owner, operator, or other person(s) having legal responsibility for the premises or facility. The Notice to Clean shall specify, in said notice, the time allotted for compliance. The recipient of the notice shall undertake the activities necessary to abate said condition within the period of time specified.

- **SEC. 7-844. Violation Deemed a Public Nuisance.** Violation of any part of this division is deemed a public nuisance. The City Attorney may initiate a civil action in a court of competent jurisdiction, obtain a court order authorizing the City to abate, enjoin, or otherwise compel the cessation of such nuisances.

- **SEC. 7-849. Emergency Orders and Abatements.** The Director may order the abatement of any discharge from any source to the City storm drain system when the discharge causes or threatens to cause a condition which presents an imminent danger.

- **SEC. 7-840.1. Civil Penalties.** Any person who violates any part of this provision, who discharges or causes pollution, or who violates any Cease and Desist Order, or any order of the Director shall be civilly liable to the City in an amount not to exceed Twenty-five Thousand and no/100 ($25,000.00) per violation per day.

SECTION 8.0: OUTREACH PROGRAM

8.1 Purpose

The purpose of this fact sheet is to describe the City of Stockton's outreach program for industrial users.

8.2 Background

The City must develop an industrial outreach program to educate local industries about stormwater pollution control and appropriate BMPs.

8.3 Method

The industrial outreach program will be implemented with the approach that involving and educating the participating industries will improve the success of the stormwater program.

The outreach program will also focus on pollution prevention measures as a method to help reduce non-storm runoff to the "Maximum Extent Practical" from industrial sites. The forums and tools for presenting and disseminating information to the industries may include newsletters, workshops, and site visits.

SECTION 9.0: GLOSSARY OF TERMS

BMPs - Best Management Practices

Any program, technology, process, operating measure, practice, procedure or other management policy which controls, prevents, removes, or reduces the discharge of pollutants to receiving waters.

COA - Condition of Acceptance

Written notification from the control authority indicating conditional acceptance of an industry's or other designated facility's stormwater discharge to the City storm drainage system.

Control Authority

The City Manager or City Manager's designee.

NOI - Notice of Intent

The formal notification to the State Stormwater Resources Control Board by an applicant that either a construction or industrial activity will comply with the conditions of the general permit, and thereby commits the applicant to prepare and implement a Stormwater Pollution Prevention Plan.

PIF - Priority Industrial Facility

An industry required to file an NOI in accordance with the California General Industrial Activities Stormwater Permit.

NSPS - New Source Performance Standards

This term means any restriction established pursuant to Section 306 of the Act on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are or may be discharged from new sources into navigable waters, the waters of the contiguous zone, or the ocean.

SARA - Superfund Amendments and Reauthorization Act of 1986

Title III of this act established emergency planning and reporting requirements for government and industry.

SIC - Standard Industrial Classification

A federal classification of industrial users by their primary processes, products, or services.

SWMP - Stormwater Management Program

Program mandated under City of Stockton's National Pollutant Discharge Elimination System (NPDES) Permit for stormwater discharges.

SWPPP - Stormwater Pollution Prevention Plan

Plan required to be developed and implemented under conditions of the General Permit for Stormwater associated with industrial activities.

APPENDIX
BMP-D 1.1

SWPPP Approved Date Query

13-Jul-98

SWPPP Approved	SWPPP #	WDID	Owner Responsible Person	Address	Lot Numbers	Description
7/15/97	97-SP008-1	FORTHCOMMING	Todd Aarvig Todd Aarvig	3415 Oak Shore Drive	Oak Shores - Lot #6	Permit 97-2788 Permit released 7-15
7/18/97	97-8S001-0	5B39S305562	Bright Development John Zellhoefr	River Estates - Steamboat Junction - 2175 Volpi Drive	River Estates Units 5 & 7 - Various	Pt No. 97-2920 Re 7-18 (Nelson) Pt 97-3146 Re 7-22 Pt 97-3248 Re 7-28 Issued # to Anna 7-18
7/18/97	97-WR001-0	5B39S307363	Bright Development John Zellhoefr	Weston Ranch - Coral Ridge West	Unit 8 - Lots 1-7, 46, 57, 61-68, 73-110, and 158-186.	EWS Woods Blvd. and William Moss Blvd. Issued # to Anna 7-18
7/30/97	97-LJ001-0	5B39S301962	Verner Group III Dan Casey	Little John Creek Subdivision	Little John Creek Unit #1; 4; 5; Unit 2, lots 2-4, 51-60, and 65-68; and	Unit 3, lots 7-10, 12-14, 19, 20, 23, 80, and 81.
7/31/97	97-BE010-1	5B39S307704	Greg & Staci Light Greg Jackson	Brookside Estates - 3516 Blue Lake Circle	Unit 2, Lot 77	Permit 97-2849
8/1/97	97-BE003-0	5B39S307481	Grupe Communities Shane Hart	Brookside Estates - Commercial North - Deer Park Drive	Various	Streets Only.
8/1/97	97-BE006-0	5B39S307480	Grupe Communities Shane Hart	Brookside Estates - Deer Park Southwest - Marriott	Various	Streets only cc: Stan Oshita, Siegfried Engineering, Inc.
8/1/97	97-BE004-0	5B39S307447	Grupe Communities Shane Hart	Brookside Estates - Unit 10 - Phases 1 & 2	Various	Phase 1 initially cc: Stan Oshita, Siegfried Engineering, Inc.
8/1/97	97-BE002-0	5B39S307445	Grupe Communities Shane Hart	Brookside Estates - Unit 18 - Phases 1 & 2	Various	Phase 1 initially.
8/1/97	97-BE001-0	5B39S307446	Grupe Communities Shane Hart	Brookside Estates - Unit 33 - Phases 1 & 2	Various	Phase 1 initially.
8/1/97	97-BE005-0	5B39S307448	Grupe Communities Shane Hart	Brookside Estates - Unit 25 - Phases 1 & 2 4/29/98 add Unit 15, 34, and extend Riverbrook to Unit 18.	Various - Including Riverbrook Drive	Phase 1 initially cc: Stan Oshita, Siegfried Engineering, Inc.
8/4/97	97-WR010-0	5B39S307546	Penguin Holding Inc. John Andreotti	Weston Ranch - Various	Various - Portions west, south, and northeast.	cc: Mike Persak, Thompson-Hysell, Inc.
8/5/97	97-WR003-0	5B39S307554	Florsheim Homes David Florsheim	Weston Ranch - Unit #3	Various - Ishi Goto and Ken	Permit 97-2888 - Included in the area for SWPPP #97-WR002-0
8/5/97	97-WR002-0	5B39S307554	Florsheim Homes David Florsheim	Weston Ranch - Belleterra	Unit 3, Lots 1-10, 15, 73-91, and 106-136.	Tract No. 2269 Weston Ranch Unit #3, portions.
8/6/97	97-BE011-1	5B39S307561	Florsheim Homes David Florsheim	Brookside Estates - Amberfield Circle.	Unit 22, Lots 1333-1358. Amendment No. 2 changed description to Lots 1333-1388.	Tract No. 2710, Brookside Estates Unit #22, portions.
8/6/97	97-BE008-1	FORTHCOMMING	Florsheim Homes David Florsheim	Brookside Estates - 3223 Amberfield Circle	Unit 22, Lot 1362	Permit No. 97-2887 - Incorporated into SWPPP #97-BE011-1
8/6/97	97-SR001-0	5B39S307553	Florsheim Homes David Florsheim	Sperry Ranch - Hanna Bay Ave. & Ct., Nathaniel St., and Lyle Ave.	Unit 6, Lots 381-422.	Tract No. 2663, Sperry Ranch, Unit #6, portions.

SWPPP Approved	SWPPP #	WDID	Owner Responsible Person	Address	Lot Numbers	Description
8/8/97	97-BE014-0	FORTHCOMMING	Grupe Communities Shane Hart	Brookside Estates - Unit 7 - Phases 1 & 2.	Various	Phase 1 initially. (Pinehurst)
8/8/97	97-BE013-0	FORTHCOMMING	Grupe Communities Shane Hart	Brookside Estates - Unit 4 - Phases 1 & 2.	Various	Phase 1 initially. (Classics)
8/12/97	97-BE009-0	5B39S307562	Florsheim Homes David Florsheim	Brookside Estates - Autumn Chase Circle Area	Unit 24 - Various	Brookside Estates - Unit #24
8/12/97	97-SP001-1	5B39S307443	R.E. Development dba California H Anita Duran	Spanos Park - Bravo	Spanos Park - Whistler Meadows Unit 1, Lots 1-34, 36-42, 45-64, and 66-104.	Spanos Park - Index Map Area "A"
8/12/97	97-SP014-0	5B39S307439	R.E. Development dba California H Anita Duran	A.G. Spanos Park - Masterpiece	A.G. Spanos Park - part of units 3, 6, 7, 8, & 10 - Various lots	Spanos Park - Index Map Area "N"
8/12/97	97-BE012-0	5B39S307442	R.E. Development dba California H Anita Duran	Brookside Estates Units 16 & 28.	Various	Pebble Beach Drive Area
8/12/97	97-WR006-0	5B39S307440	R.E. Development dba California H Anita Duran	Weston Ranch - Mirage	Units 16 & 17, Lots 1-44 (16) & 1-48 (17)	Weston Ranch - Gordon Verner Circle Area
8/12/97	97-BE009-1	5B39S307562	Florsheim Homes David Florsheim	Brookside Estates - 3122 Autumn Chase	Unit 24, Lot 1722	Permit No. 97-2951
8/12/97	97-WR007-0	5B39S307560	R.E. Development dba California H Anita Duran	Weston Ranch - Paradise	Units 10 & 27, Lots 1-48 (10), 12-26 (27), and 37-52 (27)	Weston Ranch - William Moss Blvd. & Flatboat St. @ Zeally Lane
8/15/97	97-BE015-3	5B39S307689	Grupe Communities Ron Rugani	Brookside Estates - St. Andrew Drive	Unit 23 - Lot #1430	Amended 3-16-98 to add Unit 23 - Lot #1429
8/15/97	97-BE015-2	5B39S307687	Grupe Communities Ron Rugani	Brookside Estates - St. Andrew Drive	Unit 23 - Lot #1422	
8/15/97	97-BE015-1	5B39S307688	Grupe Communities Ron Rugani	Brookside Estates - 4552 St. Andrew Drive	Unit 23 - Lot #1428	Permit No. 97-3487
8/15/97	97-BE012-1	5B39S307685	Grupe Communities Ron Rugani	Brookside Estates - 4149 Pebble Beach	Unit 28 - Lot #1549	Permit No. 97-2966
8/15/97	97-BE012-3	5B39S307684	Grupe Communities Ron Rugani	Brookside Estates - Pebble Beach Drive	Unit 28 - Lots 1555, 1556, and 1557	
8/15/97	97-BE012-2	5B39S307686	Grupe Communities Ron Rugani	Brookside Estates - 4535 Pebble Beach	Unit 16 - Lot #1449	Permit No. 97-2967
8/27/97	97-WR004-0	5B39S304277	Kaufman & Broad Mike Squier	Weston Ranch - California Marquis / Prarie Meadows	Units 21 & 22, Various, Lots 10 & 63 first.	Woodchase Lane and Waterford Ave. Permits 97-2900 & 2901 Re: 8/1 97-3582 - 3584 re 8/28
8/27/97	97-SP008-2	FORTHCOMMING	Crown View Corp. Todd Aarvig	3448 Waterfront	Oakshore Unit 1 (Index Map Area H) Lot #16	Permit No. 97-3222 Re: 8/1
8/27/97	97-SP008-3	FORTHCOMMING	Crown View Corp. Todd Aarvig	3491 Waterfront	Oakshore Unit 1 (Index Map Area H) Lot #29	Permit No. 97-3223 Re: 8/1
8/27/97	97-8S002-0	3B39S307692	Kaufman & Broad Mike Squier	8th Street Area - California Greens II	Golf Course Terrace - Unit 6, Lots 1-40, 30 & 17 first	Houston Ave. at Spring Hill Drive, Permit Nos: 97-3598, 3599 first 97-3598&99 re 8/28

SWPPP Approved	SWPPP #	WDID	Owner Responsible Person	Address	Lot Numbers	Description
8/29/97	97-WR005-0	FORTHCOMMING	Kimball Hill Homes Mike Leal	Weston Ranch - Sierra Meadows	Unit 15, Lots 1-14 and 26-62. 3/6 add 55, 63-67, 72, and 105-111. 4/20 add 70, 71, 75, 80, 83, 87, 89, 90, 94, 105, 112-114.	Weston Ranch Unit #15 - Permit Nos. 97-3068 through 97-3078 released 7/31
8/29/97	97-BR001-0	5B39S307068	Arnaiz Development Co., Inc. Matthew Arnaiz	Blossom Ranch - Wild Grape Drive Area	Unit 2 - Lots 2-103, lots 76, 75, 74 first 4/23/98 add Unit 3 and Holman Road	Tract No. 2387, Blossom Ranch Unit #2, Permit Nos. 97-3097, 3098, 3099 first
8/29/97	97-LM001-0	5B39S307052	Morada Development Group LLC Matthew Arnaiz	La Morada - Pioneer Circle	Unit 3 - Lots 1-80.	La Morada - Unit 3
9/2/97	97-BE010-3	FORTHCOMMING	Grupe Communities Ron Rugani	Brookside Estates - Bridgewater Circle	Unit 2 - Lot #297	4857 Bridgewater Circle
9/2/97	97-BE010-2	FORTHCOMMING	Grupe Communities Ron Rugani	Brookside Estates - Longcove Drive	Unit 2 - Lot #89	4832 Longcove Drive
9/5/97	97-WR009-0	5B39S307508	Forecast Group Richard Alexander	Weston Ranch - Carolyn Weston & William Moss to Dominque & Nisperos	Units 11 & 14 - Unit 11, Lots 1 - 55 & Unit 14, Lots 1- 61	Permit Nos. 97-3209 to 3213 released first on 8/7/97
9/10/97	97-BE012-4	FORTHCOMMING	Caresco Development Doug Carruesco	Brookside Estates - Pebble Beach Drive	Unit 28 - Lot #1559	4285 Pebble Beach Drive - Permit No. 97-3275 Re: 9/3
9/29/97	97-AR002-0	5S39S307945	Buzz Oates Enterprises Greg Schubert	Arch Road Industrial Complex	Various - Alitalia Warehouse, Stockton Airport Business Center	4440 Alitalia Avenue
10/8/97	97-AR001-0	5B39S307698	Auto Nation USA Freddy Iturriria	Arch Road Industrial Complex	Various	1843 Boeing Way - Permit Nos. 97-2953, 54, & 55
10/10/97	97-SP002-0	5B39S307593	Spanos Park Development Co. Mike Mandilakis	Spanos Park - CO#7	Various	Spanos Park - Index Map Area "B"
10/10/97	97-SP004-0	5B39S307591	Spanos Park Development Co. Mike Mandilakis	Spanos Park - Lot #20	Lot #20	Spanos Park - Index Map Area "D"
10/10/97	97-SP001-0	5B39S307594	Spanos Park Development Co. Mike Mandilakis	Whistler Meadows Unit #1 - Index Map A	Lots #98, 99, 100 Lots #98, 99, 100 released 7-16	
10/10/97	97-GV001-0	NOT APPLICABLE	A.C.L.C. Inc. Bob Krieger	Grant Village Townhomes, Intersection of 7th and Grant Streets	Various	Multi - Family Residential and Day Care Center
10/10/97	97-SP003-0	5B39S307592	Spanos Park Development Co. Mike Mandilakis	Spanos Park - CO#1, 2 , 3, 6, and church.	Various	Spanos Park - Index Map Area "C"
10/10/97	97-SP010-0	5B39S307586	Spanos Park Development Co. Mike Mandilakis	Spanos Park - South and West of Spanos Lake	Various - Including Senior Citizens and Middle School Site, but not City Park	Spanos Park - Index Map Area "J"
10/10/97	97-SP005-0	5B39S307590	Spanos Park Development Co. Mike Mandilakis	Spanos Park - Lot #13 and 14.	Lot #13 and 14	Spanos Park - Index Map Area "E"
10/10/97	97-SP007-0	5B39S307589	Spanos Park Development Co. Mike Mandilakis	Spanos Park - Oak Grove	Various	Spanos Park - Index Map Area "G"
10/10/97	97-SP011-0	5B39S307585	Spanos Park Development Co. Mike Mandilakis	Spanos Park - Lakeside #3	Various	Spanos Park - Index Map Area "K"

SWPPP Approved	SWPPP #	WDID	Owner Responsible Person	Address	Lot Numbers	Description
10/10/97	97-SP009-0	5B39S307587	Spanos Park Development Co. Mike Mandilakis	Spanos Park - Oak Shores #2 & 3	Various	Spanos Park - Index Map Area "I"
10/10/97	97-SP012-0	5B39S307584	Spanos Park Development Co. Mike Mandilakis	Spanos Park - Lot #9, southwest of Spanish Bay	Various	Spanos Park - Index Map Area "L"
10/10/97	97-SP008-0	5B39S307588	Spanos Park Development Co. Mike Mandilakis	Spanos Park - Oak Shores #1	Various excluding lots #6, 8, 9, 17, 19, 20, & 30.	Spanos Park - Index Map Area "H"
10/15/97	97-SP006-0	5B39S307595	Beck Properties Bud Chambers	Spanos Park - Country Side Village Unit 2	Unit 2 - NOT filed lots 47 - 49	Spanos Park - Index Map Area "F"
10/17/97	97-SP016-0	5S39S308036	Greenbriar Homes Don Milan	Spanos Park - Unit #2 - Unit #4	Unit 2 - Unit 4, various	Spanos Park - River Falls at River Oak
10/17/97	97-SP015-0	5S39S308037	Greenbriar Homes Don Milan	Spanos Park - Chanteane	Unit 11, Lots 457-459, 477-483, and 500-504 - Unit #12, lots 505-508 and 562.	Spanos Park - Creek Trail Circle Area
10/21/97	97-WP001-0	FORTHCOMMING	City of Stockton Ben Silver, DSS Company	Weber Point Events Center	Various	10 acre park/events center
10/24/97	97-BE010-4	FORTHCOMMING	Grupe Communities Ron Rugani	Brookside Estates - Misty Cove Court	Unit 2 - Lot #246	Single Family Residence
10/24/97	97-BE016-1	FORTHCOMMING	Grupe Communities Ron Rugani	Brookside Estates - Huntingdale Circle	Unit 5 - Lot # 843	Single Family Residence
11/3/97	97-SP008-5	FORTHCOMMING	Victorian Development Jerry Schmidt	xxxx Waterfront	Oakshore Unit 1 (Index Map Area H) Lot #15, Amended 6/24 lots 1, 7, 15, 18 & 26.	Permit No. 97-xxxx Re: xxx
11/3/97	97-SP008-4	5B39S308994	Victorian Development Jerry Schmidt	xxxx Oak Shore Drive	Oakshore Unit 1 (Index Map Area H) Lot #1	Permit No. 97-xxxx Re: xxx
11/17/97	97-8S003-0	FORTHCOMMING	Florsheim Homes David Florsheim	8th Street Area - Golf Course Terrace Units #4 and # 10	Unit 4, Lots 8-12, 27, 62, & 69 - Unit #10, Lots 24-28	Fresno Avenue and Calero Hills Lane near Houston Avenue
12/12/97	97-BE012-5	FORTHCOMMING	John C. Saccone & Sons Steve Saccone	Brookside Estates - Pebble Beach Drive	Unit 28 - Lot 1545	4113 Pebble Beach - Permit No. 97-4174
12/16/97	97-BE012-6	FORTHCOMMING	Miller - Klein Development, Inc. Chris Miller	Brookside Estates - Pebble Beach Drive	Unit 28 - Lot 1550	4157 Pebble Beach - Permit No. 97-4691
12/24/97	97-BE010-5	FORTHCOMMING	Grupe Communities Ron Rugani	Brookside Estates - Bridgewater Circle	Unit 2 - Lot #273	Single Family Residence
12/30/97	97-BE012-7	FORTHCOMMING	Lenzi Construction & Management Cliff Lenzi	Brookside Estates - Pebble Beach Drive	Unit 28 - Lot 1579	4126 Pebble Beach - Permit No. 97-4345
12/31/97	97-BE015-4	FORTHCOMMING	Coy N. Elvis Ron Rugani	Brookside Estates - St. Andrews Drive	Unit 23 - Lot 1421 4-30-98 added Unit 2 Lot 109	4456 St. Andrews Drive - Permit No. 97-5211
2/20/98	98-TC001-0	FORTHCOMMING	Miller - Klein Development, Inc. Kris Miller	Twin Creek Estates - Deepwater Lane	Unit 2 - Lot 253	9762 Deepwater Lane
3/2/98	98-BE012-9	FORTHCOMMING	Caresco Development Doug Carruesco	Brookside Estates - Pebble Beach Drive	Unit 28 - Lot #1561 amended 3/27 for Lot #1571	4317 Pebble Beach Drive - Permit No. 97-5341
3/4/98	98-BE010-6	FORTHCOMMING	Grupe Communities Ron Rugani	Brookside Estates - Longcove Drive	Unit 2 - Lot #100	Single Family Residence

SWPPP Approved	SWPPP #	WDID	Owner Responsible Person	Address	Lot Numbers	Description
4/13/98	98-8S004-0	5S39S308780	Trimark Homes Phil Miller	8th Street Area - Bridgeport Trails Unit 3-5	Various	Unit 3 initially
4/22/98	97-BE012-8	FORTHCOMMING	Simas Const. & Painting David J. Simas	Brookside Estates - Pebble Beach Drive	Unit 28 - Lot 1551	4161 Pebble Beach - Permit No. 97-5638
5/11/98	98-BE010-7	FORTHCOMMING	Kessler, Adam Scott	Brookside Estates - 4807 Bridgewater Drive	Unit 2 - Lot # 272	Single Family Residence
5/19/98	97-LB001-0	5B39S307245	LeBaron Ranches L.P. Wayne LeBaron	LeBaron Estates	Lots 1 to 219	Single Family Residential
5/29/98	98-BE012-A	FORTHCOMMING	Schingler Development Company Richard Schingler	Brookside Estates - Pebble Beach Drive	Unit 28 - Lot #1572 and #1573	Single Family Residence
6/4/98	98-BE017-1	FORTHCOMMING	Kencor Development Ken Brown	Brookside Estates - 4305 Glen Eagles Drive	Unit 3 - Lot # 384	Single Family Residence
6/5/98	98-AG002-0	FORTHCOMMING	Catellus Development Richard Rose	Airport Gateway Industrial Complex	GATX Site Improvements (Kelloggs)	Permit No. 98-1074, 6810 McKinley cc: Thom Blach, L.E. Wentz with SWPPP
6/16/98	98-SP006-1	FORTHCOMMING	Chapman Co., Inc. Paul Chapman	Spanos Park - Country Side Village #1 and Spanish Bay	Unit 1	Spanos Park - Index Map Area "F" and "M"
6/24/98	98-SC001-0	FORTHCOMMING	Village Properties Dan Schalit	Soda Corners - 7920 - 8014 Lower Sacramento Road	Various	Commercial Site Improvements

APPENDIX
BMP-D 3.1

Inspection Summary Report (Letters Sent) - Between 7/1/97 and 6/30/98

SWPPP #	Owner Responsible Person	Address	Lot Numbers	Comments
97-SR001-0	Florsheim Homes David Florsheim	Sperry Ranch - Hanna Bay Ave. & Ct., Nathaniel St., and Lyle Ave.	Unit 6, Lots 381-422.	Dirt, pictures & letter sent , checked out OK on 10/20
97-WR009-0	Forecast Group Richard Alexander	Weston Ranch - Carolyn Weston & William Moss to Dominque & Nisperos	Units 11 & 14 - Unit 11, Lots 1 - 55 & Unit 14, Lots 1- 61	Very messy, left written notice of violation.
97-LJ001-0	Verner Group III Dan Casey	Little John Creek Subdivision	Little John Creek Unit #1; 4; 5; Unit 2, lots 2-4, 51-60, and 65-68; and	Moved trash material pile, nothing else. New stockpile on Wausau St.
97-WR005-0	Kimball Hill Homes Mike Leal	Weston Ranch - Sierra Meadows	Unit 15, Lots 1-14 and 26-62. 3/6 add 55, 63-67, 72, and 105-111. 4/20 add 70, 71, 75, 80, 83, 87, 89, 90, 94, 105, 112-114.	Looks good.
97-WR002-0	Florsheim Homes David Florsheim	Weston Ranch - Belleterra	Unit 3, Lots 1-10, 15, 73-91, and 106-136.	Not very good.
97-WR005-0	Kimball Hill Homes Mike Leal	Weston Ranch - Sierra Meadows	Unit 15, Lots 1-14 and 26-62. 3/6 add 55, 63-67, 72, and 105-111. 4/20 add 70, 71, 75, 80, 83, 87, 89, 90, 94, 105, 112-114.	Generally messy, dirt in R/W.
97-BE009-0	Florsheim Homes David Florsheim	Brookside Estates - Autumn Chase Circle Area	Unit 24 - Various	Grading ordinance, s/w discharge, letter sent.
97-WR006-0	R.E. Development dba C Anita Duran	Weston Ranch - Mirage	Units 16 & 17, Lots 1-44 (16) & 1-48 (17)	great job.
97-WR007-0	R.E. Development dba C Anita Duran	Weston Ranch - Paradise	Units 10 & 27, Lots 1-48 (10), 12-26 (27), and 37-52 (27)	Great job.
97-BE009-0	Florsheim Homes David Florsheim	Brookside Estates - Autumn Chase Circle Area	Unit 24 - Various	Messy, stockpile in street. MUD.
97-BE012-1	Grupe Communities Ron Rugani	Brookside Estates - 4149 Pebble Beach	Unit 28 - Lot #1549	Wash water runing off property into gutter. Pictures taken & letter sent.
97-WR005-0	Kimball Hill Homes Mike Leal	Weston Ranch - Sierra Meadows	Unit 15, Lots 1-14 and 26-62. 3/6 add 55, 63-67, 72, and 105-111. 4/20 add 70, 71, 75, 80, 83, 87, 89, 90, 94, 105, 112-114.	G&G Concrete Contractors washing out in gutter!
97-8S001-0	Bright Development John Zellhoefr	River Estates - Steamboat Junction - 2175 Volpi Drive	River Estates Units 5 & 7 - Various	Stockpile in R/W, excess dirt & sediment; messy; pics and letter.
97-8S001-0	Bright Development John Zellhoefr	River Estates - Steamboat Junction - 2175 Volpi Drive	River Estates Units 5 & 7 - Various	Dirt and sediment
97-BE013-0	Grupe Communities Shane Hart	Brookside Estates - Unit 4 - Phases 1 & 2.	Various	OK, some d&s in street
97-BE012-1	Grupe Communities Ron Rugani	Brookside Estates - 4149 Pebble Beach	Unit 28 - Lot #1549	OK, GENERAL TRASH & DEBRIS IN C&G
97-LJ001-0	Verner Group III Dan Casey	Little John Creek Subdivision	Little John Creek Unit #1; 4; 5; Unit 2, lots 2-4, 51-60, and 65-68; and	COS MARK TRUJILLO ON SITE, HAY BALES OUT OF POSITION, NO BAGS, NO CHANGE FROM THURS 3/19
97-WR004-0	Kaufman & Broad Mike Squier	Weston Ranch - California Marquis / Prarie Meadows	Units 21 & 22, Various, Lots 10 & 63 first.	LOOKS GOOD

SWPPP #	Owner Responsible Person	Address	Lot Numbers	Comments
97-LJ001-0	Verner Group III Dan Casey	Little John Creek Subdivision	Little John Creek Unit #1; 4; 5; Unit 2, lots 2-4, 51-60, and 65-68; and	LETTER #3 - ERROSION ACROSS SIDEWALKS
97-WR009-0	Forecast Group Richard Alexander	Weston Ranch - Carolyn Weston & William Moss to Dominque & Nisperos	Units 11 & 14 - Unit 11, Lots 1 - 55 & Unit 14, Lots 1- 61	*FAX #3 - LETTER, LOT #16 TO PAST DOMINIQUE, VERY MESSY
97-SP001-1	R.E. Development dba C Anita Duran	Spanos Park - Bravo	Spanos Park - Whistler Meadows Unit 1, Lots 1-34, 36-42, 45-64, and 66-104.	Lots 83-94 in court, messy. Lots of D&S on sidewalk C&G.
97-8S002-0	Kaufman & Broad Mike Squier	8th Street Area - California Greens II	Golf Course Terrace - Unit 6, Lots 1-40, 30 & 17 first	Mud in Peacock Gap Court - 3 houses - street, sidewalk, curb & gutter, west end of Houston Ave.
97-WR001-0	Bright Development John Zellhoefr	Weston Ranch - Coral Ridge West	Unit 8 - Lots 1-7, 46, 57, 61-68, 73-110, and 158-186.	Catch Basin inserts broken.
97-BE011-1	Florsheim Homes David Florsheim	Brookside Estates - Amberfield Circle.	Unit 22, Lots 1333-1358. Amendment No. 2 changed description to Lots 1333-1388.	Messy
97-BE011-1	Florsheim Homes David Florsheim	Brookside Estates - Amberfield Circle.	Unit 22, Lots 1333-1358. Amendment No. 2 changed description to Lots 1333-1388.	Messy

Total Letters Sent = 25

APPENDIX
BMP-M 1

City of Stockton

1997-98
Storm Water Monitoring Program

Prepared for:

City of Stockton
Department of Municipal Utilities

Prepared by:

Kinnetic Laboratories, Inc.

August 1998

KINNETIC
LABORATORIES
INCORPORATED

1997-98 STORM WATER MONITORING REPORT

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1.0 SUMMARY AND RECOMMENDATIONS

The City's storm water permit monitoring program is intended to support the goals and elements of the storm water management program. A priority of the City is to accomplish these goals in the most cost-effective manner possible. The following recommendations are intended as refinements to the monitoring program to improve the overall effectiveness of the monitoring program in supporting the goals of the City's storm water management program.

- **Reduce frequency of storm water monitoring and implement a receiving water monitoring program**

  A total of 66 storm water samples have been analyzed since the initial characterization program in 1992. Cumulative data from these sampling efforts have been statistically summarized at the end of each monitoring year. These statistical summaries now incorporate data from 39 storm events in drainages representative of residential land use, 14 storm events in areas dominated by commercial land use, and 13 storm events from industrial land use.

  Based upon the coefficient of variation (CV) calculated for representative trace metals (copper, lead and zinc), existing data are considered to be sufficient to provide adequate load estimations. In the Part II Application, an estimated CV of 1.00 was used to project the number of observations necessary to obtain representative EMCs. Based upon these projections, it was determined that 27 observations would be necessary to obtain a representative mean concentration for a particular constituent given an 80 percent level of confidence and a relative error of 25 percent. Actual CVs for both total and dissolved concentrations of copper, lead and zinc by land use are all less than 0.40.

  Annual comparisons of the quality of storm water runoff from the City of Stockton continue to indicate that concentrations of most trace metals are equivalent or lower than reported in comparable studies and that discharges of conventional polluants are similar to levels reported in the original NURP studies.

  Based upon this information, it is recommended that routine discharge monitoring be reduced in frequency to once every five years. The reduced frequency would be designed to assure that longer term changes in discharge characteristics are not encountered. In lieu of routine discharge monitoring, it is recommended that a staged receiving water program be developed to directly assess potential impacts of storm discharges.

- **Eliminate Toxicity Identification Evaluations (TIEs)**

  TIE testing has continued to implicate organophosphate pesticides as the primary source of toxicity to *Ceriodaphnia dubia* in runoff. During the previous year, analytical data from these sites clearly indicated that diazinon and, in some cases, chlorpyrifos concentrations were sufficient to produce significant mortality to the test organism, *Ceriodaphnia dubia*. This season diazinon and malathion were identified as the primary toxicants in runoff from MS-14

(Kelley and Mosher Slough). This site is a residential land use site. Monitoring of organophosphate pesticides in runoff from the five land use sites continues to suggest that these pesticides are generally more common and present in highest concentrations in runoff from residential areas.

TIE tests using an alga, *Selenastrum*, indicated that productivity was significantly reduced in runoff from all three test sites. A fungicide (Bravo), herbicide (Dacthal), metal (zinc) and volatile or surfactant compounds were implicated as potential contributors to reduced algal productivity. Interpretation of this test, however, is complicated by lack of appropriate reference water from each discharge site.

The recommended receiving water program should incorporate toxicity testing and water quality monitoring to assess potential impacts to aquatic communities during storm events.

2.0 INTRODUCTION

The Clean Water Act of 1987 required National Pollution Discharge Elimination System (NPDES) permits for discharges from municipal storm drain systems serving populations of 100,000 or more, as well as for certain storm water discharges associated with industrial activities. The Act specifies that NPDES permits for discharge from municipal storm drains require controls to reduce the discharge of pollutants to the maximum extent practicable. The U.S. Environmental Protection Agency (USEPA) issued regulations governing NPDES storm water permits in October, 1990. The regulations required that municipal storm water dischargers submit detailed permit applications in two parts. In accordance with the USEPA storm water regulations, the City of Stockton (City) submitted a Part 1 Application in May of 1992. Part 2 of the City's application for an NPDES storm water discharge permit was submitted to the Central Valley Regional Water Quality Control Board (RWQCB) in May of 1993. On February 25, 1995 the RWQCB issued NPDES storm water permit number CA0083470 to the City of Stockton.

The Part 2 Application included an initial Characterization Study conducted during the 1992-93 wet weather season as well as a proposed monitoring program for representative data collection during the term of the permit. Following review of the Part 2 Application, modifications were made to the proposed monitoring program and submitted to the RWQCB in May of 1995. The NPDES monitoring program was then implemented during the 1995-96 wet weather season.

The current scope of the monitoring program involves the following:

- Monitoring at five sites representative of land use within the City of Stockton.
- Use of automated samplers to collect full flow-weighted composite samples of storm water runoff from each site.
- Monitoring of three events per year.
- Chemical analysis of total and dissolved concentrations of six trace metals, organophosphorate pesticides, nutrients, TDS, TSS, hardness, BOD and COD in the flow-weighted composite samples.
- Analysis of oil & grease, pH, fecal coliform bacteria and fecal streptococcus bacteria in grab samples from each site.
- Phase I, II and III Toxicity Identification Evaluations conducted using flow-weighted composite samples collected from three sites during one event.

It was intended that sampling requirements be continually reevaluated to assess overall variability of the data set and effectiveness of the program.

3.0 MONITORING PROGRAM DESCRIPTION

3.1 MONITORING SITES

The monitoring program was designed to employ the same five monitoring stations used in the initial year of monitoring (Figure 1). These sites are representative of commercial, industrial and residential land uses within the City of Stockton. The selected sites reflect an appropriate balance of representative watersheds and practical considerations. The selected sites and their characteristics are summarized in Table 1.

West Lane at Calaveras River (CR-46) - Commercial Land Use. The watershed discharging to this site is comprised of primarily commercial land use, but also includes residential and industrial (a Pacific Gas and Electric Service Center) land uses. Thus, the monitored watershed is not entirely homogeneous. However, the site is considered to be similar to established commercial areas throughout Stockton, and is thought to be a likely location to observe illicit discharges.

Western Pacific Industrial Park and Duck Creek (DC-65) - Industrial Land Use. The land use within the watershed draining to this station is mainly industrial, with a variety of industries present in the industrial park. However, the park is not yet completely developed. The undeveloped, northern portion of the park drains into the northern part of the basin, not through the monitoring site. Within the developed area of the park, industries are widely spaced, with substantial expanses of open space. For this reason, the monitoring site is likely to be more representative of modern suburban industrial parks than of older, higher density, urban industrial watersheds. However, information gathered in the industrial monitoring program (see Part 2 Application, Section 4.4) can be used to compare the discharge characteristics measured at DC-65 with other industrial land uses in the Stockton area.

Sutter Street at Calaveras River (CR-45) - Residential Land Use. This station is at the discharge point of an older, predominantly residential watershed. Land use is mostly single family residential although zoning in this region provides for limited duplex and apartment districts. This area also includes a large residential park.

Kelley Drive at Mosher Slough (MS-14) - Residential Land Use. The watershed draining to this monitoring station is comprised primarily of relatively newer residential development, constructed within the past 10 to 20 years. This is the largest watershed of the five monitored, covering approximately 533 acres of land.

Thornton Road at Mosher Slough (MS-18) - Residential Land Use. The watershed draining to this sampling site is characterized primarily by moderately old residential development, with some strip commercial development.

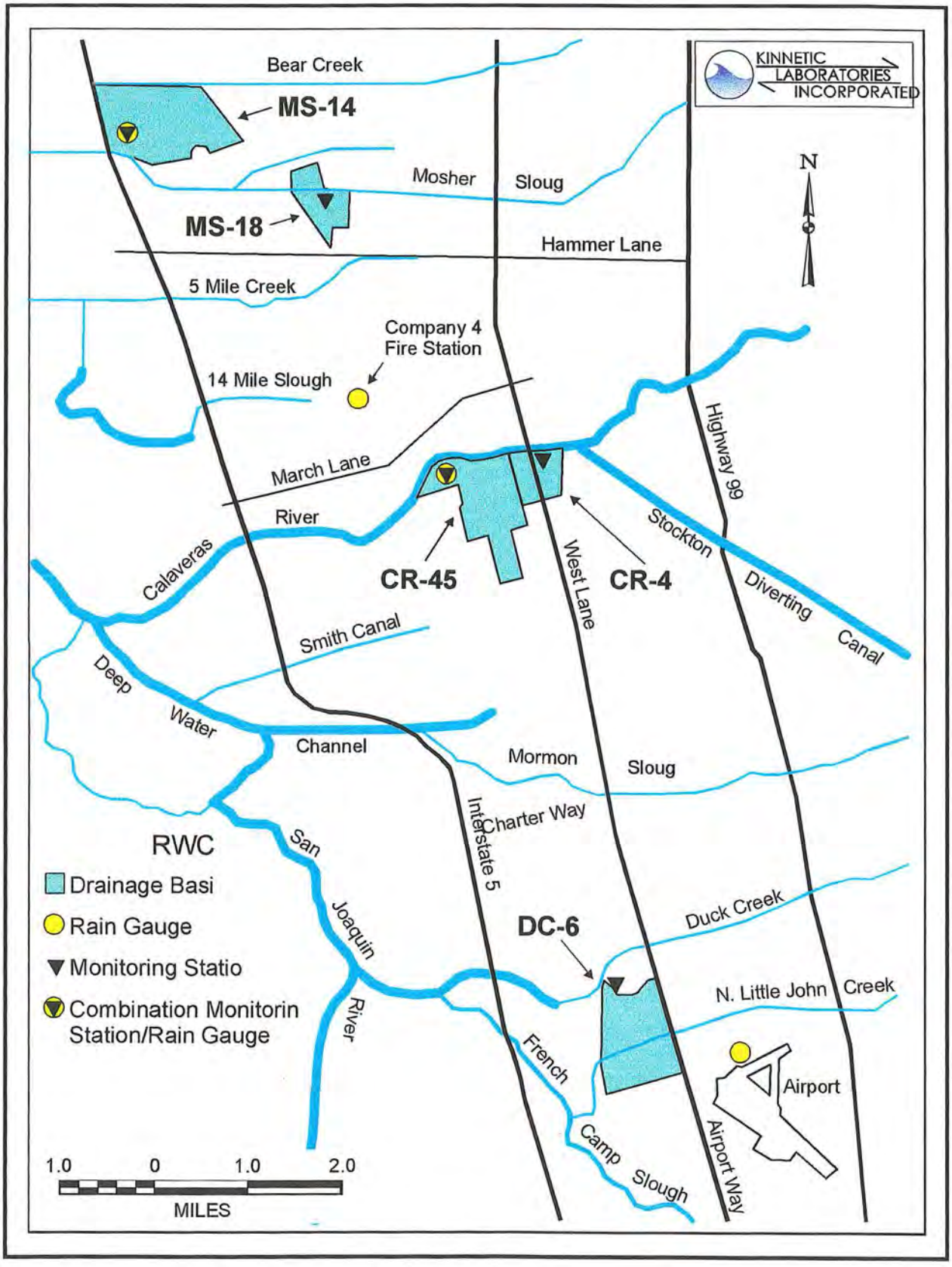


Figure 1. Monitoring Station and Rain Gauge Locations

Table 1. Location, land use and area of monitored drainages

Monitoring Site (Location/Destination)	Outfall Code	Predominant Land Use	Area (acres)
West Lane/ Calaveras River (South)	CR-46	Commercial	169
W. Pacific Industrial Park/Duck Creek	DC-65	Industrial	343
Sutter Street/Calaveras River	CR-45	Residential	360
Kelley Drive/Mosher Slough	MS-14	Residential	533
Thornton Road/Mosher Slough	MS-18	Residential	102

3.2 WATER SAMPLING AND FLOW MONITORING EQUIPMENT

Storm water monitoring equipment configurations for the three stations selected as representative of residential sites were all similar. Each of these monitoring sites was located at pumping stations that discharge storm water directly to the receiving waters. All pumps at these sites are operated by electric motors. Contact breakers were continuously monitored at each of the pumps to determine if the pumps are operating. Storm water discharge rates were then calculated in real-time based upon hydraulic head differentials (measured by a pressure sensor in the sump) and the pump discharge equations.

The only differences in station configurations at the three residential sites were the number of pumps requiring instrumentation. Two of the residential stations utilize three electrically-operated pumps. The third station has only two pumps.

Since power was readily available at all residential monitoring sites, refrigerated samples were used. This reduced manpower requirements during the prestorm mobilizations. If standard DC powered water samplers were used, stations would have required servicing in anticipation of storm events to ice the sample containers.

The commercial site, CR-46 (West Lane and Calaveras), selected for monitoring, is similar in configuration to the residential sites. Since a pump house is present at this site, equipment was placed inside, eliminating the need for a special security enclosure. As with other pump station site, storm water discharge rates were calculated in real-time based upon hydraulic head differentials (measured by a pressure sensor in the sump) and the pump discharge equations.

The industrial site, DC-65(Western Pacific Industrial Park and Duck Creek), is located at a manhole that accesses a 72-inch pipe just before it discharges into a large detention basin. Power and telephone service were not easily accessible at this site. This station therefore required a DC-

powered water sampler and a cellular modem (with solar panels) for communication. A velocity/pressure sensor was used at this site for direct measurement of flow. Because power was not available for a refrigerated sampler, the composite bottles were iced down prior to the onset of sampling, and kept iced throughout each monitoring event.

3.3 RAIN GAUGES

Continuous recording rain gauges were installed at two sites (Figure 1) to augment existing monitoring sites. Gauges were installed at the northernmost site, MS-18 (Thornton Road at Mosher Slough) and at one of the centrally located sites, CR-45 (Sutter and Calaveras). The existing rain gage located at the Stockton airport was utilized for coverage of the southern portion of the study area. Additional data were obtained this year from the Stockton Company 4 Fire Station.

3.4 SAMPLING PERIOD AND FREQUENCY

Three storm events were required to be monitored during each year of the five year term of the permit. Preferably, monitoring events were to be separated temporally by at least one month. This sampling frequency was selected in order to provide a reasonable quantity of data to support the required estimates of seasonal pollutant loadings (Part 2 Application, Section 3.3).

In the Stockton area, approximately 95 percent of the annual precipitation occurs between the months of October and April. Storm events can, however, occur as early as September and as late as May. Average monthly precipitation is less than 0.1 inches from June through August. Based upon USEPA guidelines, storms exceeding the minimum rainfall of 0.33 inches were targeted for monitoring.

SYNOP modeling of long-term precipitation records from the Stockton Wastewater Treatment Plant was used to assist in targeting representative storm events. This modeling indicated that between 6 to 18 events could be expected that would exceed 0.1 inches and be separated by at least 72 hours of less than a tenth of an inch of rain. On the average, thirteen events were expected to meet the target criteria. Average rainfall volume for each event was estimated at 0.65 inches.

3.5 ANALYTICAL PARAMETERS, METHODS AND DETECTION LIMITS

Flow-weighted composites were used in the analyses whenever possible to minimize error in the estimation of pollutant loads. Grab sampling techniques were utilized for some of the parameters due to holding time considerations, volatilization of key constituents, or potential contamination due to use of automatic samplers. Both the grab samples and the flow-weighted samples were collected in the field and then transported to the laboratory for analysis.

Two different analytical laboratories were utilized. Analytical Laboratories, Inc. (Anlab) analyzed samples collected during the first storm event. Storm water runoff from the second and third storm events was analyzed by BSK Analytical Laboratories located in Fresno, California.

3.5.1 Analytical Methods and Detection Limits

Storm water constituents analyzed under the monitoring program are summarized in Tables 2 and 3 together with specified analytical methods and detection limits. Flow-weighted composite samples were used for analysis of all parameters listed in Table 2. In addition to the chemical analyses, toxicity testing was conducted using water from the composite samples. Grab samples were used to measure all parameters listed in Table 3. Target detection limits for specific organic compounds are listed in Appendix B (Tables B1-B3). All constituents commonly detected during the initial monitoring effort were included. Dissolved metals were included due to the latest recommendations by EPA evaluation of National Water Quality Criteria and the California Toxics Rule.

Three groups of organic compounds were initially included in the analytical suite for NPDES storm water monitoring in February 1995. These included the chlorinated pesticides (EPA Method 608), organophosphorus pesticides (EPA Method 614), and semivolatile organic compounds (EPA Method 625). Based upon monitoring data from the first year of NPDES storm water monitoring, the Central Valley RWQCB authorized elimination of requirements to analyze semivolatile organic compounds and chlorinated pesticides in December 1996 (RWQCB letter dated December 5, 1996)..

Organophosphorus pesticides were added to the original set of analytical requirements proposed in the monitoring plan when the final permit was issued in 1995. The addition of these compounds was incorporated as a result of special studies conducted by the Regional Board which identified diazinon as a potential source of toxicity in urban runoff within the Central Valley region.

Toxicity testing was conducted to characterize toxicity in storm water runoff and identify the constituents contributing to the toxicity. The study plan called for all toxicity testing to utilize flow-weighted composites in order to assure that samples are representative of storm water discharges. At the direction of Regional Board staff, storm water toxicity samples were taken as grab samples this year.

Toxicity testing was to conducted using storm water collected from three different sites. One site was to be selected from the northern portion of the City (MS-14 or MS-18), a second site from central Stockton (CR-45 or CR-46), and third site was to be DC-65 which is the southernmost monitoring station (DC-65). Although preference was to assure that tests were conducted at stations representative of each major land use category, final selection was to be based upon availability of sufficient sample volumes at each site. Sample volumes were not an issue this year since grab samples were used for the test procedures.

Tests utilized aspects of both Phase I, II, and III procedures (EPA 1991; EPA 1993; Bailey et al. 1994) to develop information on the general class of contaminants and then identify specific toxicants responsible for observed toxicity. An abbreviated Phase I testing procedure was used in order to accelerate the initial testing process and reduce holding times for possible Phase II and III testing procedures.

Table 2. List of constituents, analytical methods and detection limits for analysis of composite samples

Constituent	EPA Method	Units	MDL
Total Recoverable Metals			
Cadmium	213.2	ug/L	0.1
Chromium	218.2	ug/L	1.0
Copper	200.7	ug/L	10
Lead	239.2	ug/L	1.0
Nickel	249.2	ug/L	1.0
Zinc	200.7	ug/L	5.0
Dissolved Metals			
Cadmium	213.2	ug/L	0.1
Chromium	218.2	ug/L	1.0
Copper	220.2	ug/L	1.0
Lead	239.2	ug/L	1.0
Nickel	249.2	ug/L	1.0
Zinc	200.7	ug/L	5.0
Organic Compounds[1] (low level)			
Organophosphorus Pesticides	614	ug/L	0.05-1.0
General/Physical			
BOD_5	SM5210B	mg/L	6
COD[2]	HACH8000	mg/L	3
TOC	415.1	mg/L	1
TDS	SM2540C	mg/L	5
TSS	160.2	mg/L	3
Total Hardness	SM2540C	mg/L	1
Nutrients			
Total Phosphorus[3]	365.2	mg/L	0.01
Dissolved Phosphorus[3]	365.2	mg/L	0.01
TKN[4]	351.3	mg/L	0.05
Nitrate plus Nitrite-N	353.2	mg/L	0.05
Total Nitrogen	calculated	mg/L	
Ammonia-N	350.3	mg/L	0.05

1. A complete listing of specific organic compounds and target detection limits is provided in Appendix B.
2. COD analyzed by SM 5220D during second and third events.
3. Total and Dissolved Phosphorus analyzed by SM 4500PB during second and third events.
4. TKN analyzed by SM 4500-Norg-C during second and third events.

Table 3. List of constituents, analytical methods and detection limits for analysis of grab samples

Constituent	EPA Method	Units	MDL
General/Physical			
Oil and Grease	413.2	mg/L	0.1
Laboratory pH	150.1	---	N/A
Microbiology			
Total Coliform	9221B[1]	MPN/100mL	20[2]
Fecal Coliform	9221E[1]	MPN/100mL	20[2]
Fecal Streptococcus	9230C[1]	MPN/100mL	20[2]

1. Method number refers to Standard Methods.
2. Detection limit of 2 MPN/100mL for blanks.

3.6 QUALITY ASSURANCE/QUALITY CONTROL

The quality assurance/quality control procedures and analytical methods are presented in detail in the City of Stockton's Proposed Storm Water Monitoring Program (KLI/CDM 1995). The purpose of quality assurance (QA) and quality control (QC) procedures is to ensure data of known high quality and to verify that the monitoring is operating within acceptable error rates. QA/QC provides a method for ongoing evaluation and control of data quality throughout the sampling program.

The major elements of the QA/QC program included:

- Use of established Standard Operating Procedures (SOPs) to assure that sampling equipment, subsampling procedures, and sample containers did not introduce contamination;
- Specification of proper sample containers, preservation and holding times required for each required analysis;
- Use of blind field duplicates to evaluate combined effects of sampling and analytical variability on the precision of measurements;
- Use of matrix spikes and matrix spike duplicates to evaluate precision and accuracy,
- Analysis of blanks (field, bottle, equipment, filter and method blanks) to assess possible sources of contaminants; and
- A detailed review and evaluation of all laboratory results to evaluate if specified data quality objectives were met and possible impacts on interpretation of the data.

3.7 SPECIAL STUDY- AMBIENT CONDITIONS IN RECEIVING WATERS

A special study was conducted during the 1997-98 storm water season to determine background concentrations of typical storm water contaminants in the receiving waters prior to a storm event. Samples were taken at two receiving water sites monitored as part of the City's Ambient Water Quality Monitoring Program. Each site was upstream of major storm water discharges from the City of Stockton. The monitoring sites included:

- Mormon Slough- northeast of the diverting canal
- Calaveras River

These stations were sampled at 0945 and 1035, respectively, on September 9, 1997 just prior to an anticipated storm event. All samples were analyzed for all constituents measured in composite samples for the storm water NPDES. Analyses included dissolved and total trace metals, conventional parameters (ie. TSS, TDS, BOD_5, TOC and nutrients), and organophosphate pesticides. All methods were consistent with the storm water program and detection limits were consistent with or lower than used in the storm water monitoring study.

4.0 RESULTS AND DISCUSSION

4.1 RAINFALL AND RUNOFF

4.1.1 Rainfall

Seasonal rainfall totals and intensities for four regions within the Stockton area are represented in Figures 2 through 5. Rainfall data for the Stockton Airport (Station #23237 WSO) are used to estimate rainfall within the catchment of Station DC-65 (Duck Creek). Data for Station CR-45 (Sutter Street) approximates rainfall for stations CR-45 and CR-46 (West Lane); and data for Station MS-14 (Kelley Drive) approximates rainfall for stations MS-14 and MS-18 (Thornton Road). Rainfall data was also collected at the Stockton Fire Station which is located about one mile northwest of the sampling station at CR-45. Seasonal totals ranged from 15.4 inches at Station MS-14 to 23.4 inches at Station CR-45.

The maximum rainfall intensity for the season ranged from 0.33 inches/hour on January 29, 1998 at the Stockton Airport to 5.44 inches/hour on November 13, 1997 at Station CR-45.

Stockton Airport Rainfall- October 1997- March 1998

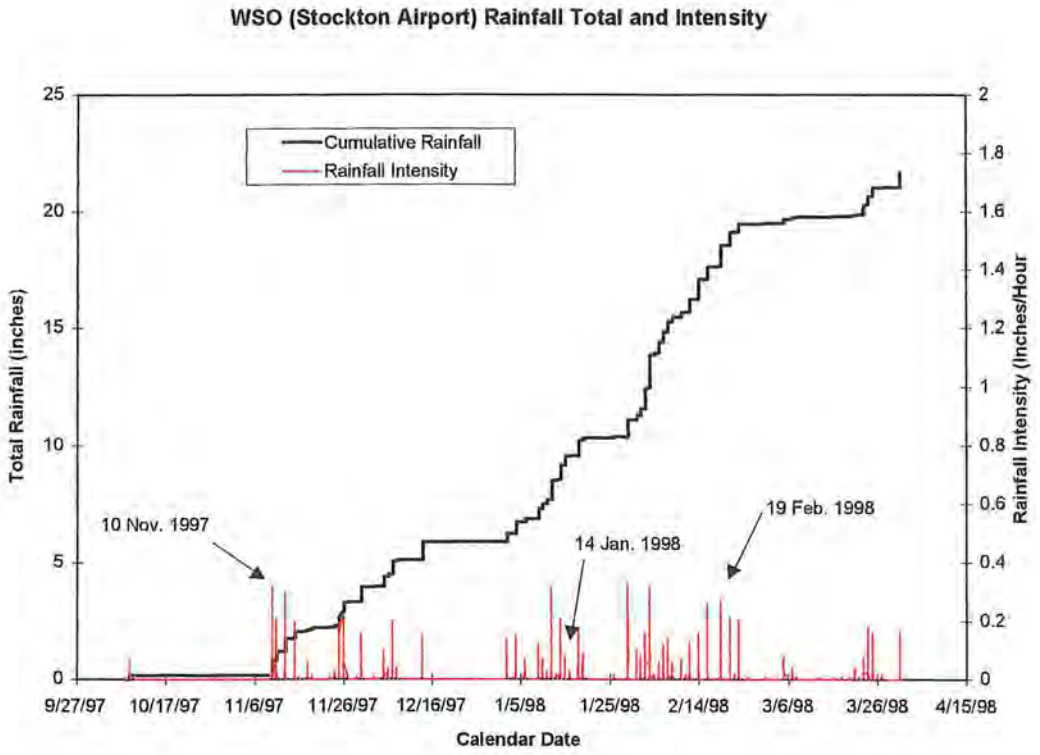


Figure 2. Daily and cumulative season rainfall at the Stockton Airport

Stockton Fire Station Rainfall- October 1997- March 1998

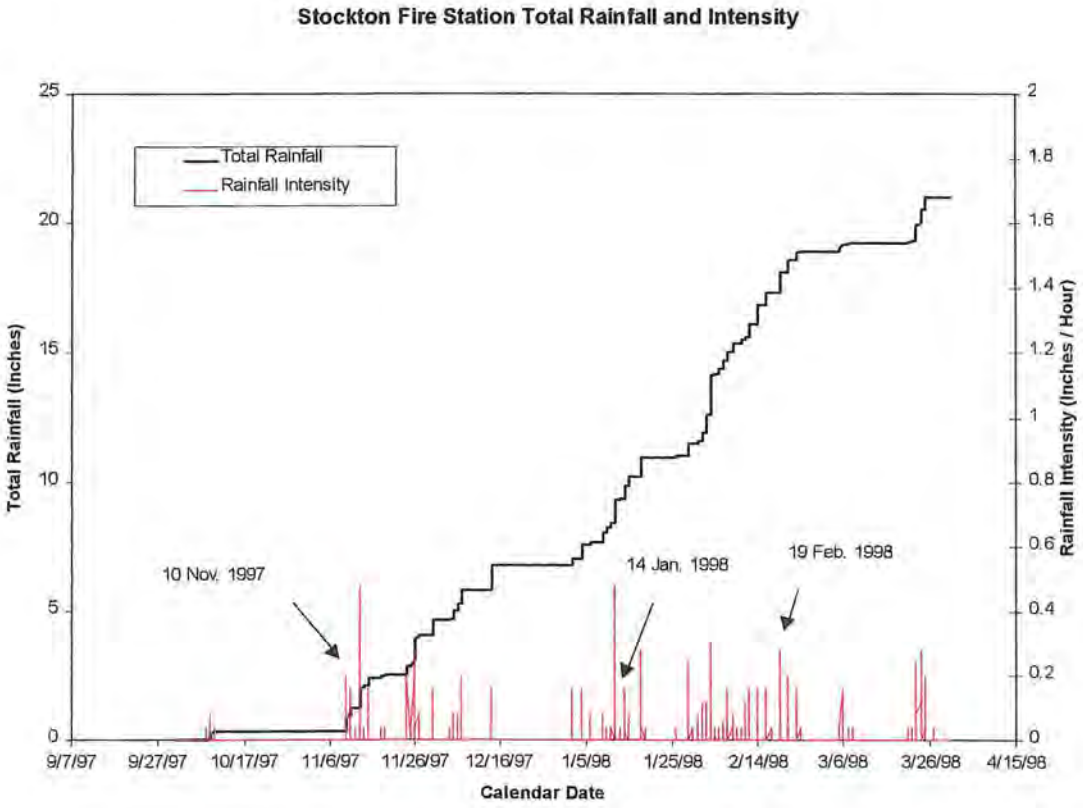


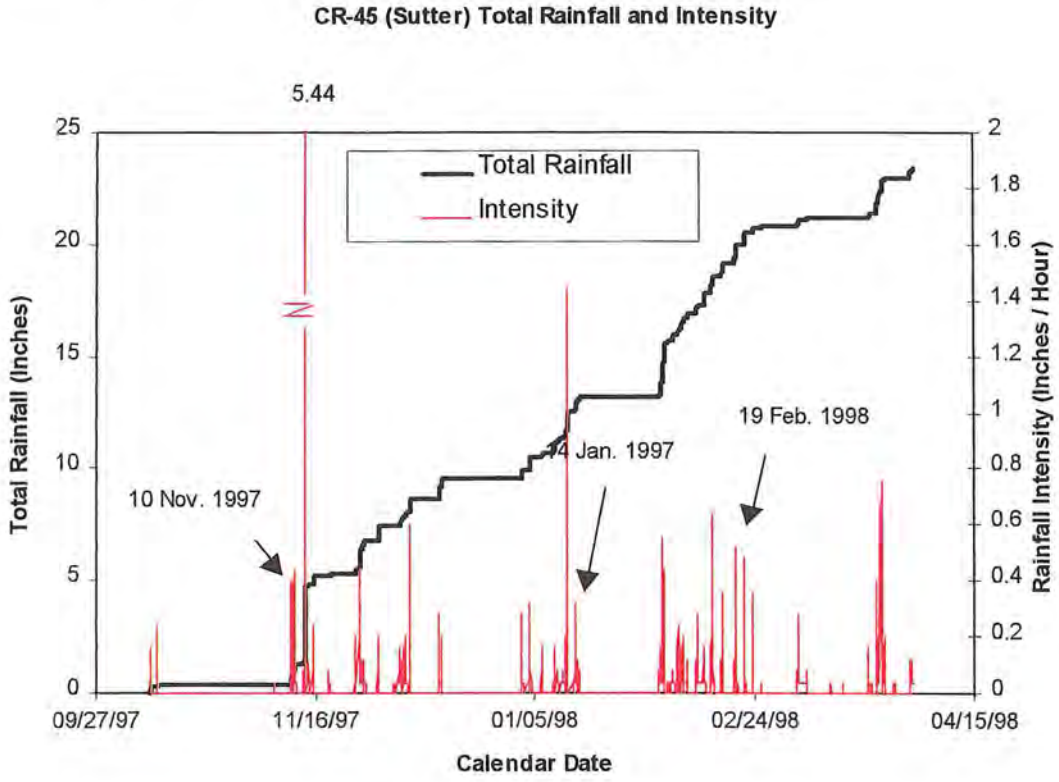
Figure 3. Daily and cumulative season rainfall at the Stockton Fire Station

A total of three storm events were monitored during the 1997-98 monitoring season (Figures 2-5 Tables 4 and 5). These events were designated SE13 through SE15.

The first monitored event started on November 10, 1997 (Figure 2, Table 4). Average rainfall in the study area was 0.56 inches. Average seasonal rainfall prior to this event was 0.33 inches. This event followed a 32-day period of dry weather. The last significant rainfall (greater than 0.1 inches) prior to this storm was reported in early October. The second monitored event started on January 14, 1998. At the time of this event, an average of 10.2 inches of rainfall had been recorded in the study area. Average rainfall measured during this event was 0.58 inches. This event was the last of a series of events and was preceded by 1.2 to 1.8 days of dry weather. The storm preceding the second monitoring event (SE14) was a large event yielding nearly an inch of rain at most sites. The third storm event was monitored on February 19, 1998. Average rainfall during this event was 0.86 inches and followed a dry period of 2.1 to 2.4 days. This final storm was also one that was preceded by a series of closely spaced events.

Sutter Street (CR-45) Rainfall- October 1997- March 1998

Figure 4. Daily and cumulative season rainfall at Sutter Street Station



Kelley Drive (MS-14) Rainfall- October 1997- March 1998

Figure 5. Daily and cumulative season rainfall at Kelley Drive Station

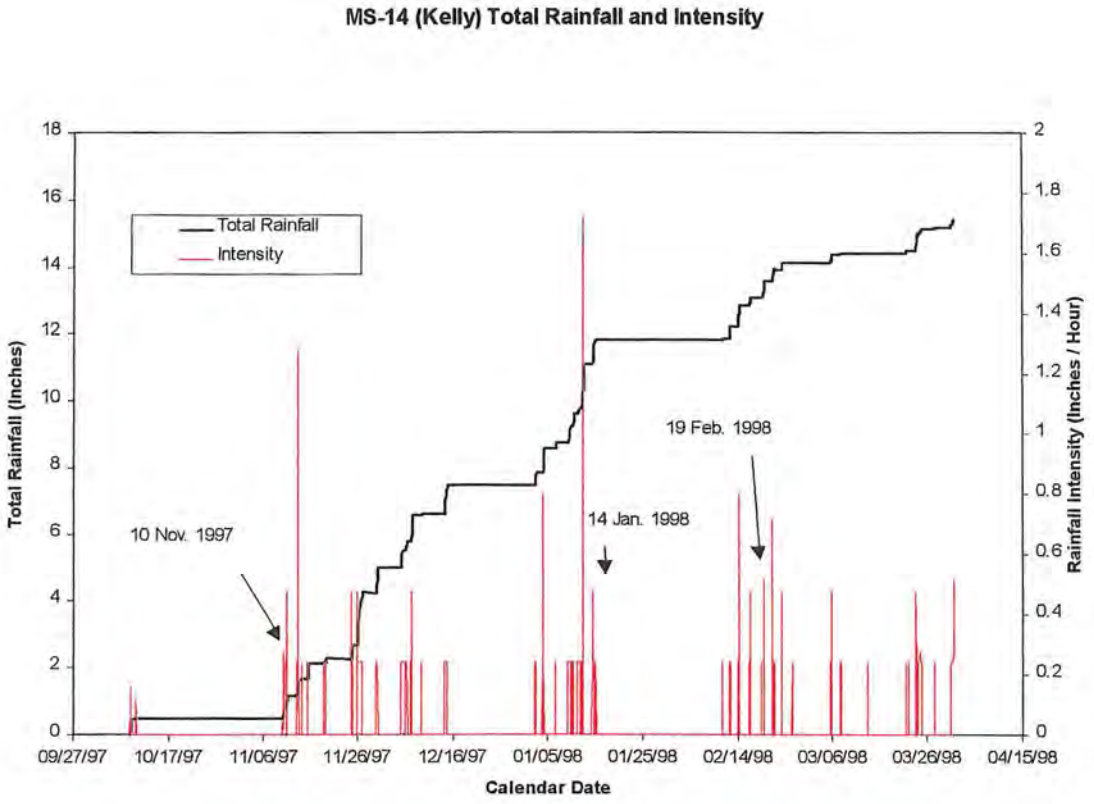


Table 4. Rainfall measurements for monitored storm events

Station Designation/ Storm Event Number	RAINFALL DATA								
	Start Data		End Data		Duration (hours)	Rainfall Total (inches)	Maximum Intensity (inches/hr)	Antecedent Rain (days)	Cumulative Season Rainfall (inches)
	Date	Time	Date	Time					
Kelley Drive (MS-14)[1] & Thornton Road (MS-18)									
SE13	11/10/97	0730	11/10/97	1720	9.8	0.46	0.24	32	0.50
SE14	1/14/98	1048	1/14/98	1444	3.0	0.54	0.36	1.8	11.09
SE15	2/19/98	0343	2/19/98	1409	10.4	0.81	0.52	2.4	13.08
Stockton Fire Station[2] (MS-14 and MS-18)									
SE13	11/10/97	0900	11/10/97	1800	9.0	0.60	0.32	32	0.19
SE14	1/14/98	1100	1/14/98	1600	5.0	0.49	0.21	2.0	8.53
SE15	2/19/98	0400	2/19/98	1700	13.0	0.86	0.28	2.1	17.64
Sutter Street (CR-45)[3] & West Lane (CR-46)									
SE13	11/10/97	0700	11/10/97	1815	11.3	0.58	0.24	32	0.41
SE14	1/14/98	1100	1/14/98	1515	4.3	0.41	0.28	1.8	12.59
SE15	2/19/98	0145	2/19/98	1945	18.0	0.87	0.52	2.1	19.14
Duck Creek (DC-65)[4]									
SE13	11/10/97	0900	11/10/97	1800	9.0	0.60	0.32	32	0.19
SE14	1/13/98	2100	1/14/98	1600	19.0	0.54	0.21	1.2	8.48
SE15	2/19/98	0100	2/19/98	2300	22.0	0.91	0.27	2.1	17.64

1. Based upon rain gauge located at MS-14. Intensities based upon 15-minute intervals.
2. Rain gauge located at Company 4 Fire Station. Intensities based upon one hour reporting intervals.
3. Based upon rain gauge located at CR-45. Intensities based upon 15-minute intervals.
4. Based upon rain gauge located at the Stockton Airport. Intensities based upon one hour reporting intervals.

4.4.2 Runoff

The automated monitoring equipment used for this study records timing of storm water discharges and provides an estimate of the total volume of storm water discharged during each event. It also provides an estimate of the percentage of the total runoff represented by the composite sample (percent capture). The percent capture provides a measure of the representativeness of the composite sample for the specific sampling event. It is common for slight reductions in percent capture to occur during periods when a composite bottle is being changed.

Data files from the dataloggers are incomplete at three of the sites during the third and final event therefore some data are missing regarding the precise beginning and end of the event, storm volumes, and percent capture.

Percent capture varied from 54 to 100 percent (Table 5). In most cases of lower percent capture, collection of storm water was terminated when storm control staff determined that rainfall had ended for that particular event. In these situations, all water from the event was not always fully discharged from the catchments creating lower percent capture values. Water analyzed from these events was typically comprised of runoff from the first portion of the storm events. It would be expected that values for the

Table 5. Storm water runoff discharge volumes and sampling efficiency at each site

	Runoff Data						
	Start Data		End Data				
Station/Event	Date	Time	Date	Time	Event Duration (hours)	Total Storm Volume (KCF)	Percent Capture (%)
Kelley Drive (MS-14)							
SE13	11/10/97	0912	11/10/97	2026	11.2	244	100
SE14	1/14/98	0030	1/15/98	0511	28.7	617	64
SE15	2/19/98	-[1]	2/19/98	-	-	-	-
Thornton Road (MS-18)							
SE13	11/10/97	1634	11/10/97	1806	1.5	95	72
SE14	1/14/98	1221	1/14/98	1534	3.2	106	65
SE15	2/19/98	0937	2/19/98	1425	4.8	232	54
Sutter Street (CR-45)							
SE13	11/10/97	0846	11/11/97	0451	20.1	271	66
SE14	1/14/98	0225	1/14/98	2252	20.5	265	71
SE15	2/19/98	-	2/20/98	0407	-	532	79
West Lane (CR-46)							
SE13	11/10/97	0848	11/11/97	0458	20.2	828	55
SE14	1/14/98	1025	1/14/98	1508	4.8	396	95
SE15	2/19/98	0514	2/19/98	1610	11.1	845	81
Duck Creek (DC-65)							
SE13	11/10/97	1749	11/10/97	1936	1.8	64	100
SE14	1/13/98	2256	1/14/98	1555	17.0	261	87
SE15	2/19/98	-	2/19/98	-	-	-	-

1. "-" indicates specific data are not available from these sites.

4.2 STORM WATER QUALITY

All water quality data collected during the third year of NPDES monitoring (1997-98) are summarized by event in Tables 6 through 15. Statistical data summaries are provided in the attached appendices. Appendix C summarizes all existing data from each monitoring site. This summary includes data from both the Characterization Study and the first three years of NPDES monitoring. Appendix D provides a statistical data summary of all existing data aggregated by land use. These statistical summaries incorporate data from 39 storm events in drainages representative of residential land use, 14 storm events in areas dominated by commercial land use, and 13 storm events from industrial land use.

Tables 16 through 17 provide a cumulative summary of water quality data from both the initial Characterization Study and the first year of NPDES monitoring. These tables are limited to constituents included in the current NPDES monitoring requirements.

Table 18 compares median EMCs for the combined data set from storm water monitoring within the City of Stockton with comparable data from other regional and national studies. City of Stockton data are based upon a total of 66 samples. This table is limited to parameters that are more routinely measured in storm water monitoring studies.

The approach utilized for statistical data summaries in Appendices C through E of organic compounds differed from all other storm water constituents. In the case of all organic constituents, "n" indicates the number of events in which each particular constituent was detected. The arithmetic mean, geometric mean, median and coefficient of variation are all based upon values that exceeded detection limits. Alternative methods of utilizing values of zero, one-half the detection limit, or the actual detection limit were rejected due to the substantial differences in detection limits between the Characterization Study and the first year of NPDES monitoring. For all other constituents, "n" indicates the number of monitored events in which the constituent was analyzed. For these constituents, the detection limit was used to calculate summary statistics in cases where any particular parameter was not detected.

This same, conservative approach was utilized during for summarization of data during the initial Characterization Study due to the low detection limits used in the program. As the database increases, alternative approaches for evaluation of "below detection limit" data may be utilized if necessary to refine estimation of critical storm water contaminants. The approach recommended in the Part II Application will be used for constituents that are detected in at least 60% of the samples. This method utilizes the log-normal distribution to estimate the distribution of data below the established detection limit.

4.2.1 Trace Metals, Conventional and Microbiological Constituents

The results of the initial Characterization Study submitted with the Part II Application indicated that concentrations of trace metals, conventional pollutants and bacteria in storm water runoff from the City of Stockton were consistent with the lower ranges of data reported by other regional and national studies. Monitoring conducted during the first and second years of the NPDES Permit

provided general confirmation of these finding. Results of the third year of the NPDES permit (Tables 6 through 15) continues to support earlier conclusions.

A qualitative review of summary data for each land use (Tables 16 through 17) indicates that land use characteristics have not resulted in substantially different water quality characteristics for most of the target constituents. Statistical comparisons of data sets from studies in Santa Clara Valley and Alameda County have resulted in similar conclusions for most pollutants of concern (BASMAA 1996). Cumulative data from all sites and storm events were therefore used for comparison with other studies (Table 18).

Total recoverable concentrations of cadmium, chromium, copper, lead, nickel and zinc are frequently detected at all sites (Table 16). Median EMCs of each metal from all sites combined tend to be much lower than similar data from the San Francisco Bay area but very comparable to results reported for other relatively arid areas such as Sacramento and San Diego (Table 19). Concentrations of copper, lead and zinc are below ranges reported for median urban sites from EPA's National Urban Runoff Project (1983).

Measurable concentrations of dissolved trace metals have been less common in storm water runoff from the City of Stockton (Table 16). Zinc was the only metal present above project detection limits in all samples at all sites. Dissolved copper was measured in 79 percent of the samples. Concentrations of dissolved cadmium, chromium, nickel and lead are often below detection limits or, when detected, were just above detection limits.

The profile of conventional pollutants measured in Stockton's NPDES monitoring program are unremarkable (Tables 16 and 19). Concentrations of these constituents tend to mimic levels from the original studies conducted by EPA (1983).

High concentrations of bacteria are consistently present in storm water runoff from Stockton (Table 16 and 19). The occurrence of high concentrations of bacteria in runoff, however, is certainly not unique to the City of Stockton. Similar high concentrations were reported over a three year period of monitoring in San Diego County. Monitoring conducted in Sacramento (LWA 1995) also indicates that bacterial concentrations are high in storm water runoff. Work conducted by Kinnetic Laboratories, Inc. (1995) to identify potential sources of bacteria in storm water runoff from the San Diego County area indicated that undeveloped land in non-urban environments can result in bacterial concentrations similar to those measured in urban areas.

4.2.2 Organophosphate Pesticides

A total of six organophosphate pesticides were detected in storm water samples during the 1997-98 monitoring season (Table 18). Chlorpyrifos was measured in 80 percent of the samples but was often measured at levels just above the detection limit. The median EMC for measured values was 0.09 ug/l. Diazinon was found in 73 percent of the samples but typically present in concentration well above the 0.05 ug/l detection limit. The median EMC for diazinon was 0.77 ug/l. The four remaining compounds were found primarily at the residential sites and were present at very low levels (one to two times the detection limit).

4.3 COMPARISON WITH RECEIVING WATER QUALITY STANDARDS

The concentrations of total recoverable metals from all samples taken since 1992 were compared against available receiving water quality standards to screen metals of greatest potential concern. Total recoverable metals were compared against EPA's 1992 National Toxics Rule with the 1995 updates (EPA 1996). Dissolve metals concentrations were compared against against criteria proposed in the 1997 California Toxics Rule (40 CFR 131 Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California, Proposed Rule). Although storm water discharges are not expected to meet receiving water standards, this screening process can assist in identification of metals that are most likely to violate standards once discharged to receiving waters. This comparison is provided as an interpretive tool rather than an indication of an actual problem.

Receiving water criteria have been established for two different exposure periods. Acute citeria are based upon 1-hour exposures while chronic criteria are based upon exposure durations of four days. Storm events are quite variable in duration. Events typically last on the order of 24 hours although they can persist for a number of days with brief dry periods between frontal systems passing through the area. Durations used to assess acute and chronic criteria would generally tend to bracket actual exposure times due to storm water runoff.

With the exception of chromium, water quality criteria for each metal are a function of hardness. Lower hardness values result in lower criteria. Previously, EPA recommended that 25 mg/L hardness be used a minimum threshold for evaluation of the criteria. They currently recommend (EPA 1996 and 1997) use of actual values when hardness goes under 25 mg/L. Storm water runoff is often near or below 25 mg/L such that this change tends to increase the number of samples that exceed receiving water standards and the overall magnitude of these excursions. Receiving waters are two to three times the typical hardness of storm water runoff from the City of Stockton. Dispersion of runoff in the receiving waters can be expected to substantially reduce the likelihood of excursions above the various criteria by the increased hardness values.

Based upon the frequency and magnitude of exceedances of the chromium and nickel criteria in storm water (Table 19), it is not considered likely that either would result in water quality exceedances in the receiving waters. Total chromium exceeded chronic criteria for hexavalent chromium 24 percent of the time and exceedances averaged less than two times the criterion. Dissolved concentrations of chromium never exceeded acute and chronic criteria. Since utilization of total chromium to compare against hexavalent chromium criteria is an extremely conservative approach, it is unlikely that chromium from storm water will result in receiving water quality violations. The acute criterion for total nickel was never exceeded and the chronic criterion was exceeded in 18 percent of the samples at an average exceedance factor of 1.7. The dissolved criteria were never exceeded.

Total cadmium in storm water exceeded the acute criterion in 20 percent of the samples and the chronic criterion in 27 percent of the samples. Exceedance factors were relatively low with 1.7 for the acute criterion and 1.5 for the chronic criterion. Dissolved cadmium never exceeded acute or chronic receiving water quality criteria. It is likely that increased hardness values and low concentrations in the receiving waters would mitigate any potential impacts of total cadmium.

Copper and zinc were the only metals that frequently exceeded acute and chronic criteria based upon both total and dissolved concentrations. Exceedance factor were similar for both metals. Total copper and zinc criteria were exceeded by average factors of 4.6 to 6.1. Dissolved copper and zinc criteria were exceeded by average factors of 2.2 to 2.7.

Concentrations of total lead exceeded the chronic criterion in 100 percent of the storm water samples by an average exceedance factor of 43.1. The chronic criterion for dissolved lead was exceeded in 80 percent of the samples by an average factor of 3.0. Since lead toxicity decreases very rapidly with increasing hardness, dilution in the receiving waters would be expected to substantially reduce the chance of exceedances in the receiving water bodies.

As noted in previous years, copper, zinc and lead would be the metals of greatest potential concern in storm water runoff from the City of Stockton. Both nickel and chromium appear to pose little risk to the receiving waters when considering the criteria based upon both total recoverable and dissolved changes. In the previous year, comparisons were limited to receiving water quality criteria as calculated in accordance with the 1992 National Toxics Rule. Comparisons using the 1995 updates to the EPA water quality criteria and dissolved criteria in the proposed California Toxics Rule resulted in very similar results to those reported in last years City of Stockton NPDES Storm Water Monitoring Report (KLI/CDM 1997).

4.4 SPECIAL STUDY - AMBIENT CONDITIONS IN RECEIVING WATERS

Water samples taken in receiving waters on 10 September 1997 (Table 20) were intended to provide background information in receiving waters prior to the storm season. Receiving water samples from Calaveras River and Mormon Slough were collected and analyzed for the same constituents as analyzed in the composite storm water samples.

Background concentrations of total and dissolved metals were low in both Calaveras River and Mormon Slough (Table 20). Total lead and nickel were the only metals detected above project detection limits. Dissolved nickel was the only dissolved metal present in concentrations exceeding the detection limits.

Concentrations of all conventional and miscellaneous constituents, with the exception of hardness, were far less than typically encountered in storm water. Organophosphate pesticides were measured at the specified detection limits in Appendix B and were all below detection limits.

Trace metal data from these receiving waters were compared against available trace metal water quality criteria (Table 21) for total metals and dissolved metals. As in the previous section, Criteria for total metals specified in the 1992 National Toxics Rule were used for comparison with measurements of total recoverable metals in the receiving waters. The criteria proposed in the 1997 California Toxics Rule were used for comparison with measurements of dissolved metals in these water bodies. None of the total recoverable or dissolved metals concentrations in Calaveras River and Mormon Slough exceeded these criteria.

4.5 TOXICITY IDENTIFICATION EVALUATIONS

The attached report (Appendix E) documents procedures, methods, results and conclusions of two Toxicity Identification Evaluations (TIEs) performed on three grab samples of storm water collected by the City of Stockton from MS-14 (Kelley Drive and Mosher Slough), CR-46 (West Lane and Calaveras River) and DC-65 (Duck Creek) on 10 November 1997. For the evaluations, a suite of toxicity testing, chemical and mechanical manipulations and chemical analyses were performed on the samples. Two test species, an alga and a water flea, were used in the toxicity evaluations. Algal testing included elements of Phase I and Phase II TIEs; water flea testing proceeded further, to Phase III TIE testing. Principal findings of this study include:

- Initial toxicity screening found significantly lowered algal productivity in all three samples, and acute toxicity to water fleas in the MS-14 sample.

- In the algal tests, Phase I (Characterization) manipulations included aeration and C_{18} SPE (Solid Phase Extraction), and produced contrasting results among the three samples tested. Aeration, which removes volatile or surfactant compounds, resulted in diminished productivity in one sample (MS-14), but significantly increased algal growth in the other two samples. C_{18} SPE treatment, which removes non-polar organic toxicants and some metals, resulted in increased growth in the MS-14 and CR-46 samples, but had no apparent effect on the DC-65 sample.

- Phase II (Identification) evaluations of algal toxicity included analysis for nutrients, total metals (MS-14 and CR-46) and organic toxicants (MS-14). Nutrient data did not correlate with observed algal bioassay productivity among the samples. In the MS-14 sample, analysis of concentrated sample found substantial amounts (9.3 µg/L whole sample) of the fungicide chlorothalonil (Bravo), and trace amounts (80 ng/L whole sample) of the herbicide DCPA (Dacthal). Metals analyses found zinc at concentrations potentially toxic to *Selenastrum* algae in the MS-14 and (especially) the CR-46 samples.

- In the water flea (*Ceriodaphnia*) tests, Phase I manipulations included aeration, filtration, C_{18} SPE, and the additions of STS, PBO and EDTA to the MS-14 sample. These manipulations implicated non-polar organic toxicants, specifically organophosphate pesticides (OP's). Volatile or surfactant compounds also may have contributed to sample toxicity.

- Phase II testing of the MS-14 sample with *Ceriodaphnia* confirmed partial inhibition of toxicity by PBO, and identified two organophosphate pesticides, diazinon and malathion, in whole-sample concentrations sufficient to cause the observed toxicity. No metals were found at levels sufficient to reduce water flea survival in the bioassays.

- In Phase III (Confirmation) testing with water fleas, add-back experiments were able to re-capture all original sample toxicity with back spikes of the two organophosphates. Individual back-spikes of Bravo and Dacthal did not affect *Ceriodaphnia* survival in the add-back experiments.

- In summary: MS-14 sample toxicity to water fleas (*Ceriodaphnia*) was attributable to the organophosphate pesticides diazinon and malathion. An unknown volatile or surfactant compound may have been a minor contributor to toxicity of this sample. In the limited *Selenastrum* evaluation, the identified algal toxicant suspects include Bravo, Dacthal, zinc and volatile or surfactant compounds.

Table 6. **Trace metal, conventional and microbiological measurements for each monitored event at MS-14 (Kelley and Mosher)**

Parameter Analyzed	Units	DL	SE-13 11/10/97	SE-14 1/14/98	SE-15 2/19/98
Total Metals					
Cadmium	ug/l	0.1/0.8/0.2	1	ND	ND
Chromium	ug/l	1/40/1	14	ND	1
Copper	ug/l	10/8/1	12U	22	4
Lead	ug/l	1/8/1	34	ND	4
Nickel	ug/l	1/8/2	15	ND	ND
Zinc	ug/l	5/8/1	160	73	33
Dissolved Metals					
Cadmium	ug/l	0.1/0.2/0.2	0.13	ND	ND
Chromium	ug/l	1/5/5	ND	ND	ND
Copper	ug/l	1/1/1	3.5J	2	1
Lead	ug/l	1/1/1	ND	ND	ND
Nickel	ug/l	1/2/2	2.1	ND	ND
Zinc	ug/l	5/1/5	41	19	13
Conventional, Microbiological and Miscellaneous Constituents					
Laboratory pH	pH units	--	-	7.8	7.8
Hardness as CaCO3	mg/l	1/1/1	30	29	26
Tot. Suspended Solids	mg/l	3/4/4	200	56	30
Tot. Dissolved Solids	mg/l	5/10/10	61	32	38
BOD	mg/l	6/5/5	25	ND	ND
COD	mg/l	3/2/4	57	20	21
TOC	mg/l	1/2/2	18	6.4	5.5
Total Coliform	MPN/100ml	20/2/2	13000000	50000	16000
Fecal Coliform	MPN/100ml	20/2/2	2200000	24000	5000
Fecal Streptococcus	MPN/100ml	20/1/200	300000	8900	24000
Total Grease & Oil	mg/l	0.1/1/1	18	1.5	ND
Tot. Kjeldahl Nitrogen	mg/l	0.05/0.4/ 0.1	4.2	1	1.8
Nitrate/Nitrite as N	mg/l	0.05/0.2/ 0.1	0.86	0.7	1.8
Total Nitrogen	mg/l		5.06	1.7	3.6
Ammonia as N	mg/l	0.05/0.05/0.05	0.42	0.53	0.38
Total Phosphorus	mg/l	0.010/0.1/ 0.2	0.72	0.12	ND
Dissolved Phosphorus	mg/l	0.01/0.1/ 0.2	0.32	ND	ND

Table 7. Organic constituents detected in runoff for each monitored event at MS-14 (Kelley and Mosher)

Parameter Analyzed	Units	DL	SE-13 11/10/97	SE-14 1/14/98	SE-15 2/19/98
Organophosphate Pesticides (EPA 614)					
Chlorpyrifos	ug/l	0.05/0.50/0.50	0.15	ND	ND
Diazinon	ug/l	0.25/0.50/0.50	2.3	0.83	0.43 J
Malathion	ug/l	0.50/0.50/0.50	0.72	ND	ND
Parathion, methyl	ug/l	0.10/0.50/0.50	ND	ND	ND
Prometon[1]	ug/l	0.10/0.50/0.50	0.21		
Prowl	ug/l	0.10/0.50/0.50	ND	ND	ND

"J" indicates value is an estimate measured below the laboratory reporting limit

1. Prometon was not included in the analytical set for storms SE14 and SE15.

Table 8. Trace metal, conventional and microbiological measurements for each monitored event at MS-18 (Thornton and Mosher)

Parameter Analyzed	Units	DL	SE-13 11/10/97	SE-14 1/14/98	SE-15 2/19/98
Total Metals					
Cadmium	ug/l	0.1/0.8/ 0.2	1.1	ND	0.3
Chromium	ug/l	1/40/1	19	ND	1
Copper	ug/l	10/8/1	25U	25	6
Lead	ug/l	1/8/1	50	ND	9
Nickel	ug/l	1/8/2	13	ND	2
Zinc	ug/l	5/8/1	340	91	64
Dissolved Metals					
Cadmium	ug/l	0.1/0.2/0.2	0.11	ND	ND
Chromium	ug/l	1/5/5	ND	ND	ND
Copper	ug/l	1/1/1	4U	3	2
Lead	ug/l	1/1/1	ND	ND	ND
Nickel	ug/l	1/2/2	1.9	ND	ND
Zinc	ug/l	5/1/5	97	36	28
Conventional, Microbiological and Miscellaneous Constituents					
Laboratory pH	pH units	--	-	7.9	7.5
Hardness as CaCO3	mg/l	1/1/1	36	18	17
Tot. Suspended Solids	mg/l	3/4/4	200	52	53
Tot. Dissolved Solids	mg/l	5/10/10	76	10	24
BOD	mg/l	6/5/5	33	ND	6
COD	mg/l	3/4/4	50	8.7	41
TOC	mg/l	1/2/2	20	7.9	5.8
Total Coliform	MPN/100ml	20/2/2	700000	80000	90000
Fecal Coliform	MPN/100ml	20/2/2	9000	7000	50000
Fecal Streptococcus	MPN/100ml	20/1/200	80000	13000	50000
Total Grease & Oil	mg/l	0.1/1/1	2.6	ND	2.9
Tot. Kjeldahl Nitrogen	mg/l	0.05/0.4/0.1	5.2	0.6	1
Nitrate/Nitrite as N	mg/l	0.05/0.2/0.2	1	0.4	ND
Total Nitrogen	mg/l		6.2	1	1
Ammonia as N	mg/l	0.05/0.10/ 0.05	0.62	0.6	0.46
Total Phosphorus	mg/l	0.010/ 0.1/0.2	0.84	0.14	0.25
Dissolved Phosphorus	mg/l	0.01/0.1/ 0.2	0.36	ND	ND

Table 9. Organic constituents detected in runoff for each monitored event at MS-18 (Thornton and Mosher)

Parameter Analyzed	Units	DL	SE-13 11/10/97	SE-14 1/14/97	SE-15 2/19/98
Organophosphate Pesticides (EPA 614)					
Chlorpyrifos	ug/l	0.05/0.50/0.50	0.1	ND	ND
Diazinon	ug/l	0.25/ 0.50/0.50	1.5	0.36 J	0.32 J
Malathion	ug/l	0.50/0.50/0.50	1.4	ND	ND
Parathion, methyl	ug/l	0.10/0.50/0.50	ND	ND	ND
Prometon[1]	ug/l	0.10/-/-	0.16		
Prowl	ug/l	0.10/0.50	ND	ND	0.32 J

"J" indicates value is an estimate measured below the laboratory reporting limit

1. Prometon was not included in the analytical set for storms SE14 and SE15.

Table 10. Trace metal, conventional and microbiological measurements for each monitored event at CR-45 (Sutter and Calaveras)

Parameter Analyzed	Units	DL	SE-13 11/10/97	SE-14 1/14/98	SE-15 2/19/98
Total Metals					
Cadmium	ug/l	0.1/0.8/0.2	0.99	ND	ND
Chromium	ug/l	1/40/1	17	ND	1
Copper	ug/l	10/8/1	32	29	6
Lead	ug/l	1/8/1	41	21	8
Nickel	ug/l	1/8/2	15	16	3
Zinc	ug/l	5/8/1	260	73	38
Dissolved Metals					
Cadmium	ug/l	0.1/0.2/0.2	0.1	ND	ND
Chromium	ug/l	1/5/5	ND	ND	ND
Copper	ug/l	1/1/1	4U	2	4
Lead	ug/l	1/1/1	ND	ND	6
Nickel	ug/l	1/2/2	3.6	ND	8
Zinc	ug/l	5/1/5	11	17	11
Conventional, Microbiological and Miscellaneous Constituents					
Laboratory pH	pH units	--	7.3	7.7	7.7/7.7
Hardness as CaCO3	mg/l	1/1/1	35	24	14
Tot. Suspended Solids	mg/l	3/4/4	230	130	63
Tot. Dissolved Solids	mg/l	5/10/10	170	18	36
BOD	mg/l	6/5/5	448	6	ND
COD	mg/l	3/4/4	60	11	33
TOC	mg/l	1.0/2/2	30	8.6	8
Total Coliform	MPN/100ml	20/2/2	4300000	80000	16000
Fecal Coliform	MPN/100ml	20/2/2	500000	2000	9000
Fecal Streptococcus	MPN/100ml	20/1/200	700000	11000	30000
Total Grease & Oil	mg/l	0.1/1/1	4.5	10	1.6
Tot. Kjeldahl Nitrogen	mg/l	0.05/0.4/0.1	5.9	0.8	1
Nitrate/Nitrite as N	mg/l	0.05/0.2/0.2	0.06	0.3	ND
Total Nitrogen	mg/l		5.96	1.1	1
Ammonia as N	mg/l	0.05/0.10/0.05	0.24	0.64	0.31
Total Phosphorus	mg/l	0.01/0.1/0.2	0.94	0.1	0.29
Dissolved Phosphorus	mg/l	0.01/0.1/0.2	0.21	ND	

Table 11. Organic constituents detected in runoff for each monitored event at CR-45 (Sutter and Calaveras)

Parameter Analyzed	Units	DL	SE-13 11/10/97	SE-14 1/14/98	SE-15 2/19/98
Organophosphate Pesticides (EPA 614)					
Chlorpyrifos	ug/l	0.05/0.50/0.50	ND	ND	ND
Diazinon	ug/l	0.05/0.50/0.50	0.48	0.32 J	ND
Malathion	ug/l	0.40/0.50/0.50	ND	ND	ND
Parathion, methyl	ug/l	0.10/0.50/0.50	ND	ND	ND
Prometon[1]	ug/l	0.10/-/-	ND	-	-
Prowl	ug/l	0.10/0.50/0.50	ND	ND	ND

"J" indicates value is an estimate measured below the laboratory reporting limit

1. Prometon was not included in the analytical set for storms SE14 and SE15.

Table 12. Trace metal, conventional and microbiological measurements for each monitored event at CR-46 (West Lane and Calaveras)

Parameter Analyzed	Units	DL	SE-13 11/10/97	SE-14 1/14/98	SE-15 2/19/98
Total Metals					
Cadmium	ug/l	0.1/0.8/0.2	1.3	0.9	0.3
Chromium	ug/l	1/40/1	16	41	ND
Copper	ug/l	10/8/1	10U	38	5
Lead	ug/l	1/8/1	32	26	6
Nickel	ug/l	1/8/2	14	20	2
Zinc	ug/l	5/8/1	320	170	70
Dissolved Metals					
Cadmium	ug/l	0.1/0.2	0.26	ND	ND
Chromium	ug/l	1/5/5	1.3	ND	ND
Copper	ug/l	1/1/1	5.8U	3	2
Lead	ug/l	1/1/1	ND	ND	ND
Nickel	ug/l	1/2/2	2.8	ND	ND
Zinc	ug/l	5/1/5	97	26	24
Conventional, Microbiological and Miscellaneous Constituents					
Laboratory pH	pH units	--	7.3	8.0	8.2
Hardness as CaCO3	mg/l	1/1/1	39	27	14
Tot. Suspended Solids	mg/l	3/4/4	140	150	54
Tot. Dissolved Solids	mg/l	5/10/10	55	30	14
BOD	mg/l	6/5/5	16	ND	6
COD	mg/l	3/4/4	34	12	28
TOC	mg/l	1/2/2	15	9.2	4.9
Total Coliform	MPN/100ml	20/2/2	1700000	30000	9000
Fecal Coliform	MPN/100ml	20/2/2	11000	11000	3000
Fecal Streptococcus	MPN/100ml	20/1/200	130000	9800	50000
Total Grease & Oil	mg/l	0.1/1/1	11	6.6	1.9
Tot. Kjeldahl Nitrogen	mg/l	0.05/0.4/0.1	2.8	1.1	1.1
Nitrate/Nitrite as N	mg/l	0.05/0.2/0.2	0.74	0.3	ND
Total Nitrogen	mg/l		3.54	1.4	1.1
Ammonia as N	mg/l	0.05/0.10/0.05	0.86	0.66	0.44
Total Phosphorus	mg/l	0.010/0.1/0.2	0.54	ND	ND
Dissolved Phosphorus	mg/l	0.01/0.1/0.2	0.19	ND	ND

Table 13. Organic constituents detected in runoff for each monitored event at CR-46 (West Lane and Calaveras)

Parameter Analyzed	Units	DL	SE-13 11/10/97	SE-14 1/14/98	SE-15 2/19/98
Organophosphate Pesticides (EPA 614)					
Chlorpyrifos	ug/l	0.05/0.50	ND	ND	ND
Diazinon	ug/l	0.05/0.50	0.38	0.31 J	ND
Malathion	ug/l	0.40/0.50	ND	ND	ND
Parathion, methyl	ug/l	0.10/0.50	ND	ND	ND
Prometon[1]	ug/l	0.10	ND		
Prowl	ug/l	0.10/0.50	ND	ND	ND

"J" indicates value is an estimate measured below the laboratory reporting limit

1. Prometon was not included in the analytical set for storms SE14 and SE15.

Table 14. Trace metal, conventional and microbiological measurements for each monitored event at DC-65 (Western Pacific Industrial Park and Duck Creek)

Parameter Analyzed	Units	DL	SE-13 11/10/97	SE-14 1/14/98	SE-15 2/19/98
Total Metals					
Cadmium	ug/l	0.1/0.8/0.2	0.53	2.7	0.2
Chromium	ug/l	1/40/1	8.4	65	2
Copper	ug/l	10/8/1	19U	39	5
Lead	ug/l	1/8/1	4.3	35	3
Nickel	ug/l	1/8/2	22	47	3
Zinc	ug/l	5/20/1	270	290	83
Dissolved Metals					
Cadmium	ug/l	0.1/0.2	ND	ND	ND
Chromium	ug/l	1/5	ND	ND	ND
Copper	ug/l	1	14U	2	2
Lead	ug/l	1	ND	ND	ND
Nickel	ug/l	1/2	12	3	ND
Zinc	ug/l	5/1/5	96	21	22
Conventional, Microbiological and Miscellaneous Constituents					
Laboratory pH	pH units	--	-	8.3	7.2
Hardness as CaCO3	mg/l	1	37	74	37
Tot. Suspended Solids	mg/l	3/4	92	360	73
Tot. Dissolved Solids	mg/l	5/10	99	89	52
BOD	mg/l	6/5	**NA**	28	26
COD	mg/l	3/4	100	43	64
TOC	mg/l	1/2	21	24	19
Total Coliform	MPN/100ml	20/2	900000	90000	240000
Fecal Coliform	MPN/100ml	20/2	30000	8000	3000
Fecal Streptococcus	MPN/100ml	20/1/200	1700000	29000	240000
Total Grease & Oil	mg/l	0.1/1	3.8	1.8	2.1
Tot. Kjeldahl Nitrogen	mg/l	0.05/0.4/0.1	7.2	1.1	3
Nitrate/Nitrite as N	mg/l	0.05/0.2	1.9	0.5	0.5
Total Nitrogen	mg/l		9.1	1.6	3.5
Ammonia as N	mg/l	0.05/0.10/0.05	1.7	0.62	1
Total Phosphorus	mg/l	0.010/0.1/0.2	1.5	0.12	0.78
Dissolved Phosphorus	mg/l	0.01/0.1/0.2	1.1	ND	0.53

Table 15. **Organic constituents detected in runoff for each monitored event at DC-65 (Western Pacific Industrial Park and Duck Creek)**

Parameter Analyzed	Units	DL	SE-13 11/10/97	SE-14 1/14/98	SE-15 2/19/98
Organophosphate Pesticides (EPA 614)					
Chlorpyrifos	ug/l	0.05/0.50/0.50	ND	ND	ND
Diazinon	ug/l	0.05/0.50/0.50	ND	0.32 J	ND
Malathion	ug/l	0.40/0.50/0.50	ND	ND	ND
Parathion, methyl	ug/l	0.10/0.50/0.50	ND	ND	ND
Prometon[1]	ug/l	0.10/-/-	ND		
Prowl	ug/l	0.10/0.50/0.50	ND	ND	ND

"J" indicates value is an estimate measured below the laboratory reporting limit

1. Prometon was not included in the analytical set for storms SE14 and SE15.

Table 16. Summary of event mean concentration (EMC) data for trace metals, conventional and microbiological constituents by land use.

Constituents	Units	All Sites (n=66)		Residential (n=39)		Commercial (n=14)		Industrial (n=13)	
		Percent Detected	Median EMC	Percent Detected	Median EMC	Percent Detected	Median EMC	Percent Detected	Median EMC
Total Metals									
Cadmium	ug/L	88	0.4	82	0.3	100	0.7	92	0.5
Chromium	ug/L	95	4.7	95	3.1	93	8.1	100	10
Copper	ug/L	100	13	100	11	100	16	100	15
Lead	ug/L	97	12	95	11	100	21	100	8.1
Nickel	ug/L	94	6.5	87	4.9	100	9.3	100	11
Zinc	ug/L	100	127	100	106	100	184	100	147
Dissolved Metals									
Cadmium	ug/L	35	0.1	33	0.1	71	0.2	0	0.1
Chromium	ug/L	20	1.3	5	1.2	57	1.5	23	1.2
Copper	ug/L	97	3.5	100	3.5	93	4.3	92	2.9
Nickel	ug/L	54	1.7	46	1.2	64	1.3	69	1.0
Lead	ug/L	33	1.2	36	1.6	43	1.8	15	2.0
Zinc	ug/L	98	35	100	38	100	64	92	16
Conventional, Misc.									
Laboratory pH	pH	NA	6.9	NA	6.7	NA	6.7	NA	7.2
Hardness	mg/L	100	24	100	22	100	19	100	40
TSS	mg/L	77[1]	76	77	59	78	77	77	179
TDS	mg/L	100	59	100	56	100	45	100	94
BOD	mg/L	91	13	87	12	93	11	92	14
COD	mg/L	100	62	100	59	100	53	100	85
TOC	mg/L	100	9.5	100	9.0	100	9.3	100	11.3
Total Coliform	MPN/100ml	100	1.32E5	100	1.47E5	100	9.74E4	100	1.32E5
Fecal Coliform	MPN/100ml	100	1.77E4	100	2.38E4	100	1.37E4	100	9.17E3
Fecal Streptococcus	MPN/100ml	100	1.32E5	100	1.31E5	100	7.49E4	100	2.64E5
Total Grease & Oil	mg/L	78	1.8	68	1.4	87	2.0	92	3.2
TKN	mg/L	100	2.1	100	2.0	100	1.8	100	2.7
Nitrate/Nitrite-N	mg/L	91	0.51	90	0.44	86	0.50	100	0.80
Total Nitrogen	mg/L	91	2.62	90	2.47	86	2.34	100	3.14
Ammonia-N	mg/L	98	0.59	100	0.51	100	0.70	92	0.76
Total Phosphorus	mg/L	95	0.38	97	0.35	86	0.32	100	0.63
Diss. Phosphorus	mg/L	86	0.20	85	0.20	86	0.18	92	0.23

1. TSS was not analyzed during one year of the program. Values reflect percentage of samples where TSS was analyzed.

Table 17. Summary of event mean concentration (EMC) data for organophosphate pesticides by land use.

Constituents	Units	All Sites (n=42)		Residential (n=22)		Commercial (n=10)		Industrial (n=10)	
		Percent Detected	Median EMC	Percent Detected	Median EMC	Percent Detected	Median EMC	Percent Detected	Median EMC
Organophosphate Pesticides									
Chlorpyrifos	ug/L	43	0.09	55	0.10	30	0.09	30	0.10
Diazinon	ug/L	74	0.56	91	0.62	50	0.54	60	0.25
Malathion	ug/L	7	0.49	14	0.49	0	-	0	-
Parathion, methyl	ug/L	2	0.12	5	0.14	0	-	0	-
Prometon	ug/L	17	0.20	32	0.21	0	-	0	-
Prowl	ug/L	5	0.23	5	0.20	10	0.10	0	-

Table 18. Comparison of City of Stockton monitoring data with regional and national data sets.

Constituent	Units	City of Stockton[1]	SantaClara/ Alameda[2]	City/County of San Diego[3]			Sacramento[4]	Fresno[5]			NURP[6]
		Urban	Urban	Res	Com	Ind	Urban	Res	Com	Ind	Median Urban Site
Total Metals											
Cadmium	ug/L	0.4	1.9	0.6	0.4	0.4	0.2	-	-	-	-
Chromium	ug/L	4.7	22	5.0	4.2	5.0	5.1	7	11	21	-
Copper	ug/L	13	47	20	11	14	14	12	14	68	38-48
Lead	ug/L	12	108	14	11	9.3	17	140	100	87	161-204
Nickel	ug/L	6.5	34	5.0	5.5	6.0	4.2	11	6	25	-
Zinc	ug/L	127	284	91	130	172	108	90	180	520	179-226
Conventionals											
BOD	mg/L	13		12	11	12	7.4	-	-	-	10-13
COD	mg/L	62		69	83	83	-	65	81	460	73-92
TOC	mg/L	9.5		-	-	-	-	-	-	-	-
Oil & Grease	mg/L	1.8		1.9	2.0	1.3	1.1	-	-	-	-
TDS	mg/L	59		96	86	120	95	27	25	121	-
TSS	mg/L	76	76-192	92	68	114	30	105	51	578	141-224
Total Phosphorus	mg/L	0.38		0.40	0.39	0.45	0.30	-	-	-	0.37-0.47
Diss. Phosphorus	mg/L	0.20		0.40	0.30	0.26	-	0.20	0.11	4.8	0.13-0.17
TKN	mg/L	2.1		1.30	1.45	2.30	-	2.0	1.6	13	1.68-2.12
Nitrate-N	mg/L	0.51		1.00	0.79	0.80	0.88	0.4	0.41	0.63	0.76-0.96
Total Nitrogen	mg/L	2.62		2.30	2.24	3.10	-	2.4	2.0	13.6	2.44-3.08
Ammonia-N	mg/L	0.59		0.30	0.32	0.50	0.52	-	-	-	-
Bacteria											
Total Coliform	MPN/100ml	1.32E5		1.20E5	5.00E4	9.00E4					
Fecal Coliform	MPN/100ml	1.77E4		1.60E4	9.00E3	4.60E3					
Fecal Streptococcus	MPN/100ml	1.32E5		2.80E4	1.60E4	1.60E4					

Res=Residential, Com=Commercial, Ind=Industrial

1. City of Stockton 1992-98 data from all sites, data are median EMCs.
2. BASMAA, 1996
3. City of San Diego and Co-Permittee NPDES Stormwater Monitoring Program (Kinnetic Laboratories, Inc. 1994, Kinnetic Laboratories, Inc. 1995, and WCC 1996)
4. Larry Walker Associates, 1992. " Final Discharge Characterization Report, Sacramento."
5. Oltman and Shulters, 1987. "Rainfall and Runoff Quantity and Quality Characteristics of Four Urban Land-Use Catchments in Fresno, California, October 1981 to April 1983, "USGS Open File Report 84-710" - Values reported are mean EMCs
6. USEPA, 1983, "Results of the Nationwide Urban Runoff Program, " Volume 1-Final Report. Data are mean EMCs from Table 6-24

Table 19. Comparison of storm water quality with receiving water quality standards.

Parameter	Total				Dissolved			
	Acute		Chronic		Acute		Chronic	
	Percent Exceeding Criterion	Average Exceedance Factor	Percent Exceeding Criterion	Average Exceedance Factor	Percent Exceeding Criterion	Average Exceedance Factor	Percent Exceeding Criterion	Average Exceedance Factor
Cadmium	20	1.7	27	1.5	0	-	0	-
Chromium	15	1.6	24	1.9	0	-	0	-
Copper	66	4.7	66	6.1	56	2.2	70	2.5
Nickel	0	-	18	1.7	0	-	0	-
Lead	59	2.6	100	43.1	0	0	80	3.0
Zinc	97	4.6	97	4.6	59	2.7	59	2.7

Table 20. Ambient trace metal and conventional measurements in Calaveras River, Mormon Slough and Bear Creek, 10 September 1997

Parameter Analyzed	Units	DL	Calaveras River	Mormon Slough
Total Metals				
Cadmium	ug/l	0.1	ND	ND
Chromium	ug/l	1	ND	ND
Copper	ug/l	10	ND	ND
Lead	ug/l	1	3.5	ND
Nickel	ug/l	1	3.3	2.1
Zinc	ug/l	5	ND	ND
Dissolved Metals				
Cadmium	ug/l	0.1	ND	ND
Chromium	ug/l	1	ND	ND
Copper	ug/l	1	ND	ND
Lead	ug/l	1	ND	ND
Nickel	ug/l	1	3.4	2.4
Zinc	ug/l	5	ND	ND
Conventional and Miscellaneous Constituents				
Hardness as CaCO3	mg/l	1	62	64
Tot. Suspended Solids	mg/l	3	ND	ND
Tot. Dissolved Solids	mg/l	5	86	85
BOD	mg/l	2	ND	ND
COD	mg/l	3	ND	ND
TOC	mg/l	1	2.1	2.4
Tot. Kjeldahl Nitrogen	mg/l	0.05	0.42	0.52
Nitrate/Nitrite as N	mg/l	0.02	0.17	0.067
Total Nitrogen	mg/l		0.59	0.587
Ammonia as N	mg/l	0.05	0.053	0.059
Total Phosphorus	mg/l	0.010	0.022	0.049
Dissolved Phosphorus	mg/l	0.010	0.018	0.049
Organophosphate Pesticides (EPA 614)[1]			ND	ND

1. Detection limits for each compound are listed in Appendix B.

Table 21. Comparison of ambient metals concentrations with receiving water criteria.

Parameter Analyzed	Units	DL	Calaveras River	Criteria[1] (Hardness=62 mg/L)		Mormon Slough	Criteria[1] (Hardness=64 mg/L)	
				Acute	Chronic		Acute	Chronic
Total Metals								
Cadmium	ug/l	0.1	ND	2.6	1.7	ND	2.7	1.7
Chromium	ug/l	1	ND	16	11	ND	16	11
Copper	ug/l	10	ND	8.9	6.2	ND	9.2	6.4
Lead	ug/l	1	3.5	44	1.7	ND	46	1.8
Nickel	ug/l	1	3.3	310	35	2.1	320	36
Zinc	ug/l	5	ND	80	80	ND	82	82
Dissolved Metals								
Cadmium	ug/l	0.1	ND	2.5	1.6	ND	2.6	1.6
Chromium	ug/l	1	ND	16	11	ND	16	11
Copper	ug/l	1	ND	8.6	6.0	ND	8.8	6.1
Lead	ug/l	1	ND	38	1.5	ND	40	1.5
Nickel	ug/l	1	3.4	310	35	2.4	320	36
Zinc	ug/l	5	ND	78	79	ND	80	81

1. Total recoverable concentrations of trace metals compared against EPA water quality criteria in the 1992 National Toxics Rule (40 CFR 131.35) as updated by the 1995 Updates: Water Quality Criteria Documents for the Protection of Aquatic Life in Ambient Water (EPA-820-B-96-001, September 1996). Dissolved concentrations of trace metals compared against criteria proposed in the 1997 California Toxics Rule (40 CFR 131 Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California, Proposed Rule)

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APPENDIX A

QUALITY ASSURANCE/QUALITY CONTROL

EVALUATION

APPENDIX A

QUALITY ASSURANCE/QUALITY CONTROL EVALUATION

This section provides a brief summary and interpretation of quality assurance/quality control data collected during the first year of NPDES monitoring. The quality assurance/quality control evaluation included an assessment of:

- Holding times for extraction or analysis
- Adherence to project detection limits
- Blanks
- Accuracy and Precision

A.1 HOLDING TIMES

Extraction and analysis of samples within holding time limitations specified by the analytical method is important in assuring the integrity of the field samples. Holding times for each analysis were specified in Table 6 of the Proposed Stormwater Monitoring Program (KLI/CDM 1995). With the exception of Total Dissolved Solids (TDS) and Total Suspended Solids (TSS) during the third storm event, all specified holding times were met for each analysis.

In the case of TDS and TSS, a holding time criteria of seven days was utilized between sample collection and initiation of test procedures (EPA Methods 160.1 and 160.2). This limit was exceeded by six days for all samples of the third storm event. TDS and TSS do not normally change significantly past seven days, however, TSS may degrade due to microbiological activity.

A.2 DETECTION LIMITS

On occasion, method detection limits (MDLs) may be elevated above project specified values due to interferences due to other compounds present in the sample matrix. When interferences are identified, the laboratory will is required to elevate the detection limit to a level where presence of the analyte could be detected above the level of interference. Specified detection limits were met for all constituents analyzed during the first storm event. A number of detection limits were elevated by the laboratory during both the second and third storm events. The following samples required some level of adjustment to the project detection limits due to either limited sample volumes, matrix interferences or incomplete instructions to a subcontract laboratory.

Event 1

- Detection limits for total copper elevated to 10 μg/L at three sites.

Event 2

- Detection limits for dissolved cadmium, chromium, and nickel increased by a factor of 1 to 5 at the five sites due to background levels of these metals present in instrument and reagent blanks.

- Total metals for the five sites were run at 1/4 dilution due to turbidity. This increased laboratory detection limits by a factor of four.

- Analyses of nitrate/nitrite-N detection limits were elevated from the Project Reporting Limit of 0.05 mg/L to 0.2 mg/L.

- Detection limits used for analysis of organophosphates (EPA Method 614) were 5 to 10 times project detection limits.

Event 3

- Detection limits for total cadmium and nickel, and dissolved cadmium, chromium, and nickel for the five sites were increased due to background levels of these metals that were detectable in instrument and reagent blanks.

- Detection limits used for analysis of organophosphates (EPA Method 614) were 5 to 10 times project detection limits.

Changes in detection limits for nitrate/nitrite-N, metals and organophosphates for each event are compared against the project detection limits in Table A.1.

Table A.1 Comparison of project reporting limits with analyses where detection limits were elevated

Analyte	Project Reporting Limits	Actual Reporting Limits
Event 1		
Copper (total)[1]	1.0μg/L	10μg/L
Event 2		
NO_3/NO_2-N	0.05 mg/L	0.2 mg/L
Cadmium (total)	0.1μg/L	0.8 μg/L
Chromium (total)	1.0μg/L	40 μg/L
Nickel (total)	1.0μg/L	8 μg/L
Lead (total)	1.0μg/L	8 μg/L
Cadmium (dissolved)	0.1μg/L	0.2μg/L
Chromium (dissolved)	1.0μg/L	5.0μg/L
Nickel (dissolved)	1.0μg/L	2.0μg/L
Organophosphates	0.05 to 1.0 μg/L	0.50 to 5.0 μg/L
Event 3		
NO_3/NO_2-N	0.05 mg/L	0.2 mg/L
Phosphorus (total)	0.1 mg/L	0.2 mg/L
Phosphorus (dissolved)	0.1 mg/L	0.2 mg/L
Cadmium (total)	0.1μg/L	0.2 μg/L
Nickel (total)	1.0μg/L	2 μg/L
Cadmium (dissolved)	0.1μg/L	0.2μg/L
Chromium (dissolved)	1.0μg/L	1.0μg/L
Nickel (dissolved)	1.0μg/L	2.0μg/L
Organophosphates	0.05 to 1.0 μg/L	0.50 to 5.0 μg/L

1. Copper DL's were elevated at 3 of the five stations. Copper was detected at the detection limit (10μg/L) at one site and just above the detection limit (12μg/L) at another site during the first event of the season.

Overall, elevated detection limits had little impact on data quality. A slight decrease in accuracy may have resulted in total copper concentrations during the first event since two of the samples were at or close to the detection limit. These levels, however, are considered relatively low for total copper and would have little effect on site median EMCs. Nitrate/nitrite-nitrogen was detected in excess of the increased detection limit at all but two sites during the third storm event. Increased detection limits for phosphorus during the third event were associated with several nondetects for both total and dissolved forms but the new detection limit of 0.2 mg/L will not substantially impact statistical analysis of the data.

Impacts of trace metal analyses were mostly limited to the second event when increased detection limits for total cadmium, chromium, lead and nickel were resulted in values below detection limits at one to three of the five monitoring sites.

Increased in project detection limits for the organophosphate pesticides had the largest impact since previously measured concentrations of diazinon and several other compounds have typically been reported below the detection limits used for the last two storm events. Diazinon was detected at four sites during the second event and two sites during the third event at concentrations below the reporting limits. Similarly, prowl was reported present at concentrations below reporting limits at one site during the third event. All these values were qualified with a "J" designating that the compounds were present but not quantifiable.

A.3 BLANKS

Several types of blanks were reported (Table A.2). Field blanks were evaluated for potential contamination associated with grab sampling. Various equipment blanks were analyzed to verify that sampling bottles, composite bottles, intake hoses and mounting hardware did not contaminate the field samples. In the laboratory, filter blanks were analyzed for trace metals to evaluate potential contamination from the filtering process. Laboratory method blanks were analyzed to evaluate introduction of possible contaminants in the laboratory.

One contaminant, copper, was detected in the first of two trace metal sample container blanks. Copper was reported at 5.9 μg/L in association with the first storm event of the season. Zinc was detected in the second of two trace metal sample container blanks at a level of 5 μg/L.

Field blanks analyzed for total oil and grease, total coliform, fecal coliform, and fecal streptococcus during the second event were all below detection limits.

All filter blanks analyzed for trace metals were below detection limits.

Method blanks were analyzed during all storm events including the special study. Trace metals and conventional constituents were analyzed for the special study and conventional constituents were analyzed for the first storm event. No contaminants were present in organophosphate pesticide blanks. Blank contamination was reported for dissolved cadmium, chromium, and nickel during the second event. Reagent blank contamination was reported for total cadmium and nickel as well as dissolved cadmium, chromium and nickel in association with analyses conducted during the third event (Letter from Jeff Koelewyn, BSK Analytical Laboratories to Larry Huber, City of Stockton dated 31 March 1997). These led to the increases in detection limits cited in the previous section. No contaminants were detected in conventional constituent blanks analyzed during the three storm events or the prestorm testing.

A.4 ACCURACY AND PRECISION

Internal laboratory accuracy was evaluated by spiking field samples with known amounts of analytes, use of laboratory control standards (LCS), and analysis of surrogate compounds. Analytical precision was evaluated by comparison of laboratory matrix spike and spike duplicate samples. These values are compared by calculation of the relative percent difference (RPD) between the two samples. The RPD is calculated according to the following formula:

$$RPD(\%)=((Result1-Result2)/0.5(Result1+Result2))*100$$

where Result 1 and 2 are the analytical results for duplicate analyses. RPDs were also evaluated for duplicate analysis of LCS samples. Results are compared with established laboratory quality control criteria.

Field duplicates were evaluated in a similar manner in order to assess added variability introduced by field processes. Standards are not established for RPDs calculated from field duplicates. Nevertheless, these data serve to assist in refining field processes to reduce this source of variability.

Laboratory Spikes and Matrix Spike Duplicates

All reported spike recoveries and RPDs for matrix spike/spike duplicates met laboratory data quality objectives for grease and oil, trace metals and conventional pollutants during each event (Table A.3). The complete set of spike and spike duplicates identified in the study plan were not completed during the second and third events (Table A.3). Single spikes were conducted for many conventional constituents during the second storm event. In these cases, spike and spike duplicate data reported for the LCS samples were used to assess precision in these cases. No matrix spike/spike duplicate data were reported for organophosphates during the second or third events of the season. Spike/spike duplicate data from the organophosphate LCS were used to evaluate precision and accuracy for these events.

Field Duplicates

Field duplicates were analyzed for most constituents during each of the three events. Organophosphate pesticides were excluded during the first event and the field duplicate for COD was inadvertently not analyzed during the second event (Table A.4 and A.5).. Relatively high RPDs were reported for COD, total copper and lead during the first event and total lead and zinc during the second event. RPDs for microbiological constituents and oil and grease were occasionally high but were not unusual for field replicates of these parameters.

A.5 OVERALL ASSESSMENT

In general, QA/QC results for the 1997-98 storm water monitoring indicate that the data are of acceptable quality for most constituents. Some adjustments in detection limits were necessary to correct problems various problems. Sample bottles, composite containers and equipment were found to be free of possible contamination except for copper and zinc in sample containers. Detection of copper at 5.9 μg/L in the sample container blank during the initial storm requires qualification of all dissolved copper and most total copper data from the first event with a "U" indicating that copper was not considered to be detected above the associated value. Other increases in detection limits were necessary due to contaminants in reagent blanks during the second and third torm events. Overall, the increases in detection limits causes a decrease in the reliability of a number of data points but had only minor impacts on statistical analysis of the data set.

Table A1. Summary of QA/QC samples submitted during the 1997-98 monitoring season

Event/Location	Date	g/c[1]	Comments
All Events			
Carboy Rinse #S04	8/8/97	NA	Cu, Pb, Zn / EPA 614
Carboy Rinse #S03	8/8/97	NA	Cu, Pb, Zn
Carboy Rinse #Q05	8/20/97	NA	Cu, Pb, Zn / EPA 614
Carboy Rinse #Q41	8/20/97	NA	Cu, Pb, Zn
Equipment Blank @ CR45	8/24/97	NA	Cu, Pb, Zn / EPA 614
Carboy Rinse #T03	10/23/97	NA	Cu, Pb, Zn
Event 1			
1-L plastic for SE1	11/11/97	NA	Cu, Pb, Zn
MS-14	11/10/97	g	Field Duplicate
MS-14	11/10/97	c	Field Duplicate
CR-45	11/10/97	g	Sample for Lab QC
CR-46	11/11/97	c	Sample for Lab QC
FB@ DC-65	11/11/97	g	Bacteria / Oil and Grease
Carboy Rinse #T02	11/11/97	NA	Cu, Pb, Zn / EPA 614
Event 2			
1-L plastic for SE2	1/15/98	NA	Cu, Pb, Zn
CR-45	1/14/98	g	Field Duplicate
CR-45	1/15/98	c	Field Duplicate
MS-18	1/14/98	g	Sample for Lab QC
MS-18	1/15/98	c	Sample for Lab QC
Carboy Rinse #S19	1/15/98	NA	Cu, Pb, Zn / EPA 614
Event 3			
MS-18	2/19/98	g	Field Duplicate
MS-18	2/19/98	c	Field Duplicate
CR-46	2/19/98	g	Sample for Lab QC
CR-46	2/19/98	c	Sample for Lab QC

1. g=grab sample, c=composite sample

Table A.2. Summary of laboratory precision and accuracy measurements

Parameter	Event 1		Event 2[1]		Event 3[2]	
	% Rec	Matrix Spike RPD	% Rec	Matrix Spike RPD	% Rec	Matrix Spike RPD
Grease & Oil	110	0				3
Cadmium	92	1	96,99	4	102, 101	1
Chromium	118, 110	1, 3	103,105	2	100,100	0
Copper	82	3	95, 95	0	106, 104	1
Lead	78, 92	3, 1	99, 97	2	100, 100	0
Nickel	80	2	101, 104	3	99, 101	2
Zinc	80	0	102, 101	2	117, 115	1
Hardness as CaCO3		0				
Nitrate/Nitrite-N	100	1	96	15	107, 107	0
BOD		4				
COD	110	2	106	2	108,102	6
TOC			104	4	102, 102	0
Phosphorus	102, 110	2, 2	93	1	100, 100	0
Ammonia	105	2	108	0	100, 100	0
TKN	109	1	91	2	92, 90	3
Disulfoton	109, 114	4	101, 105	5	78, 85	9
Ethion	91, 93	2	90, 92	2	83, 89	7.5
Parathion, methyl	106, 108	2	98, 106	9	95, 102	8
Phorate	66, 67	2	81, 82	2	75, 76	2
Stirophos	99, 102	3	112, 117	4	104, 111	7
Diazinon	87, 90	2	109, 115	5	95, 103	8

1. RPDs for conventional parameters and organophosphates based upon LCS spike/spike duplicates. Single spike was analyzed from storm water matrices.
2. Spike recoveries and RPDs for organophospates based upon LCS spike/spike duplicates. No matrix spike/spike duplicates reported for storm water matrices.

Table A.4 Field duplicates and relative percent differences for trace metals, conventional, microbiological, and miscellaneous parameters

Parameter Analyzed	Units	DL	SE-13			SE-14			SE-15		
			MS-14	MS-14 FD	RPD%	CR-45	CR-45 FD	RPD%	MS-18	MS-18 FD	RPD%
Total Metals											
Cadmium	ug/l	0.1/0.8/0.2	1	0.86	15	ND	2.6	NA	0.3	0.2	40
Chromium	ug/l	1/40/1	14	14	0	ND	46	NA	1	1	0
Copper	ug/l	10/8/1	12	40	133	29	32	10	6	5	18
Lead	ug/l	1/8/1	34	21	74	21	51	85	9	9	0
Nickel	ug/l	1/8/2	15	9.6	52	16	28	54	2	ND	NA
Zinc	ug/l	5/8/1	160	210	27	73	160	75	64	69	8
Dissolved Metals											
Cadmium	ug/l	0.1/0.2/0.2	0.13	0.1	26	ND	ND	NA	ND	ND	NA
Chromium	ug/l	1/5/5	ND	.53	ND	ND	ND	NA	ND	ND	NA
Copper	ug/l	1/1/1	3.5	3.2	9	2	3	40	2	2	0
Lead	ug/l	1/1/1	ND	0.55J	NA	ND	ND	NA	ND	ND	NA
Nickel	ug/l	1/2/2	2.1	ND	NA	ND	ND	NA	ND	ND	NA
Zinc	ug/l	5/1/5	41	50	20	17	10	52	28	28	0
Conventional, Microbiological and Miscellaneous Constituents											
Hardness as CaCO3	mg/l	1/1/1	30	34	13	24	27	12	17	17	0
Tot. Suspended Solids	mg/l	3/4/4	200	230	14	130	170	27	53	62	16
Tot. Dissolved Solids	mg/l	5/10/10	61	74	19	18	32	56	24	32	29
BOD	mg/l	6/5/5	25	20	22	6	ND	NA	6	ND	NA
COD	mg/l	3/2/4	57	110	75	11	-	-	41	38	8
TOC	mg/l	1/2/2	18	17	6	8.6	12	33	5.8	5.7	2
Total Coliform	MPN/100ml	20/2/2	1.3E7	2.2E7	51	8.0E4	1.3E5	48	9.0E4	3.0E4	100
Fecal Coliform	MPN/100ml	20/2/2	2.2E6	1.1E6	67	2.0E3	1.3E4	147	5.0E4	4.3E3	15
Fecal Streptococcus	MPN/100ml	20/1/200	3.0E5	7.0E5	80	1.1E4	1.2E4	9	5.0E4	5.0E4	0
Total Grease & Oil	mg/l	0.1/1/1	18	60	108	10	15	40	2.9	2.6	11
Tot. Kjeldahl Nitrogen	mg/l	0.05/0.4/ 0.1	4.2	4.5	7	0.8	0.5	46	1	1	0
Nitrate/Nitrite as N	mg/l	0.05/0.2/ 0.1	0.86	0.80	7	0.3	0.3	0	ND	ND	NA
Total Nitrogen	mg/l		5.06	5.30	5	1.1	0.8	32	1	1	0
Ammonia as N	mg/l	0.05/0.05/0.05	0.42	0.34	21	0.64	0.52	21	0.46	0.46	0
Total Phosphorus	mg/l	0.010/0.1/ 0.2	0.72	0.81	12	0.1	0.12	18	0.25	0.22	13
Dissolved Phosphorus	mg/l	0.01/0.1/ 0.2	0.32	0.27	17	ND	ND	NA	ND	ND	NA

Table A.5. Field duplicate and relative percent differences for organophosphate compounds.

Parameter Analyzed	Units	DL	SE-13 [1]			SE-14			SE-15		
			MS-14	MS-14 FD	RPD%	CR-45	CR-45 FD	RPD%	MS-18	MS-18 FD	RPD%
Organophosphate Pesticides (EPA 614)											
Chlorpyrifos	ug/l	0.05/0.50/0.50	0.1			ND	ND	NA	ND	ND	NA
Diazinon	ug/l	0.25/ 0.50/0.50	1.5			0.32 J	0.36J	12	0.32 J	0.27J	17
Malathion	ug/l	0.50/0.50/0.50	1.4			ND	ND	NA	ND	ND	NA
Parathion, methyl	ug/l	0.10/0.50/0.50	ND			ND	ND	NA	ND	ND	NA
Prometon[2]	ug/l	0.10/-/-	0.16			-	-	-	-	-	-
Prowl	ug/l	0.10/0.50	ND			ND	ND	NA	0.32 J	0.49J	42

1. Field duplicate sample was not analyzed for EPA 614 compounds during the first event.
2. Prometon was not included in the analytical set for storms SE14 and SE15.

APPENDIX A

QUALITY ASSURANCE/QUALITY CONTROL

EVALUATION

APPENDIX B

TARGET DETECTION LIMITS FOR

ORGANIC CONSTITUENTS

(EPA METHOD 614)

Table B1. Target detection limits for organophosphate pesticides using EPA Method 614

Constituent	MDL	Units
Azinphosmethyl	1	ug/l
Bolstar	0.1	ug/l
Chlorpyrifos	0.05	ug/l
Coumaphos	0.2	ug/l
Def	0.1	ug/l
Demeton-s	0.2	ug/l
Diazinon	0.25	ug/l
Dichlorvos	0.2	ug/l
Dimethoate	0.1	ug/l
Disulphoton	0.1	ug/l
EPN	0.1	ug/l
Ethion	0.1	ug/l
Ethoprop	0.1	ug/l
Fensulfothion	0.5	ug/l
Fenthion	0.1	ug/l
Malathion	0.1	ug/l
Merphos	0.1	ug/l
Mevinphos	0.7	ug/l
Naled	0.5	ug/l
Parathion, ethyl	0.1	ug/l
Parathion, methyl	0.1	ug/l
Phorate	0.1	ug/l
Prowl	0.1	ug/l
Ronnel	0.1	ug/l
Stirophos	0.1	ug/l
Tokuthion	0.1	ug/l
Trichloronate	0.1	ug/l
Trifluralin	0.1	ug/l

APPENDIX C

STATISTICAL DATA SUMMARIES FOR EACH

SITE - 1992 THROUGH 1998

Table C1. Statistical data summary of trace metals, conventional and microbiological constituents in runoff from MS-14 (Kelley and Mosher) - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Total Metals							
Cadmium	ug/l	0.1	13	0.3	0.3	0.2	0.69
Chromium	ug/l	1	12	3.7	3.0	2.7	0.38
Copper	ug/l	1	13	11	9	8	0.25
Lead	ug/l	1	13	9.2	6	5	0.45
Nickel	ug/l	1	13	5.1	4.0	3.4	0.40
Zinc	ug/l	5	13	102	92	90	0.11
Dissolved Metals							
Cadmium	ug/l	0.1	13	0.1	0.1	0.1	0.29
Chromium	ug/l	1	13	1.6	1.4	1.2	0.48
Copper	ug/l	1	13	4.4	4	3	0.38
Lead	ug/l	1	13	1.1	1	1	0.16
Nickel	ug/l	1	13	1.5	1.5	1.4	0.30
Zinc	ug/l	5	13	47	41	39	0.15
Conventional, Microbiological and Miscellaneous Constituents							
Laboratory pH	pH units	--	11	6.9	3.5	2.5	0.64
Hardness as CaCO3	mg/l	1	13	24	23	23	0.08
Tot. Suspended Solids	mg/l	4	10	53	40	37	0.20
Tot. Dissolved Solids	mg/l	5	13	55	53	52	0.07
BOD	mg/l	2	13	15	12	11	0.27
COD	mg/l	20	13	63	52	50	0.16
TOC	mg/l	1	13	14	12	11	0.22
Total Coliform	MPN/100ml	2	14	2013143	205140	171488	0.17
Fecal Coliform	MPN/100ml	2	14	1141179	52632	40673	0.22
Fecal Streptococcus	MPN/100ml	2	14	2174850	223478	179584	0.19
Total Grease & Oil	mg/l	0.1	14	3.2	1.6	1.0	0.92
Tot. Kjeldahl Nitrogen	mg/l	0.1	13	2.3	2.0	1.9	0.34
Nitrate as N	mg/l	0.05	13	0.60	0.58	0.55	0.33
Total Nitrogen	mg/l		13	2.64	2.63	2.46	0.28
Ammonia as N	mg/l	0.1	13	0.50	0.5	0.5	0.34
Total Phosphorus	mg/l	0.1	13	0.36	0.3	0.3	0.41
Dissolved Phosphorus	mg/l	0.1	13	0.23	0.2	0.2	0.28

Table C2. Statistical data summary of organic compounds in runoff from MS-14 (Kelley and Mosher) - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Chlorinated Pesticides (608)							
alpha-BHC	ug/l	0.01	1	0.05	0.1		
gamma-BHC	ug/l	0.01	1	0.02	0.0		
4,4'-DDT	ug/l	0.020	0				
4,4'-DDE	ug/l	0.023	0				
Organophosphate Pesticides (EPA 614)							
Chlorpyrifos	ug/l	0.05	8	0.14	0.13	0.1	0.58
Diazinon	ug/l	0.05	8	0.90	0.81	0.7	0.57
Malathion	ug/l	0.10	8	0.19	0.17	0.1	1.08
Parathion, methyl	ug/l	0.10	8	0.12	0.11	0.1	0.71
Prometon	ug/l	0.10	6	0.15	0.14	0.1	0.72
Prowl	ug/l	0.10	8	0.11	0.11	0.1	0.73
Semi-volatile Organics (EPA 625)							
phenol	ug/l	0.20	2	0.23	0.22	0.22	0.03
2-methylphenol	ug/l	0.20	0				
4-methylphenol	ug/l	0.20	0				
2-nitrophenol	ug/l	0.20	1	0.35	0.35		
benzoic acid	ug/l	1.0	3	2.8	2.7	2.6	0.21
naphthalene	ug/l	0.10	0				
2-methylnaphthalene	ug/l	0.10	1	0.28	0.28		
dimethylphthalate	ug/l	0.10	3	0.13	0.13	0.13	0.23
acenaphthene	ug/l	0.10	0				
dinitrophenol	ug/l	0.50	3	1.5	1.4	1.4	0.26
4-nitrophenol	ug/l	0.50	2	1.6	1.5	1.3	0.49
fluorene	ug/l	0.10	0				
diethylphthalate	ug/l	0.10	4	3.8	1.6	0.8	1.23
4,6-dinitro-2-methylphenol	ug/l	0.50	1	0.7	0.7		
pentachlorophenol	ug/l	0.50	0				
phenanthrene	ug/l	0.10	1	0.12	0.12		
anthracene	ug/l	0.10	0				
di-n-butyl phthalate	ug/l	0.10	2	0.80	0.79	0.76	0.24
fluoranthene	ug/l	0.10	0				
pyrene	ug/l	0.10	1	0.15	0.15		
butyl benzyl phthalate	ug/l	0.10	3	0.35	0.35	0.33	0.31
chrysene	ug/l	0.20	0				
bis(2-ethylhexyl)phthalate	ug/l	0.10	4	5.3	3.7	2.9	0.54
di-n-octylphthalate	ug/l	0.10	3	0.26	0.26	0.25	0.24
benzo(b)fluoranthene	ug/l	0.10	0				

Table C3. Statistical data summary of trace metals, conventional and microbiological constituents in runoff from MS-18 (Thornton and Mosher) - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Total Metals							
Cadmium	ug/l	0.1	12	0.5	0.5	0.4	0.53
Chromium	ug/l	1	11	5.9	4.6	4.0	0.39
Copper	ug/l	1	12	15	13	12	0.22
Lead	ug/l	1	12	21	17	16	0.26
Nickel	ug/l	1	12	6.0	4.9	4.4	0.35
Zinc	ug/l	5	12	162	137	132	0.12
Dissolved Metals							
Cadmium	ug/l	0.1	12	0.1	0.1	0.1	0.30
Chromium	ug/l	1	12	1.7	1.4	1.2	0.49
Copper	ug/l	1	12	4.1	3.9	3.7	0.22
Lead	ug/l	1	12	1.4	1.4	1.3	0.28
Nickel	ug/l	1	12	1.7	1.6	1.5	0.33
Zinc	ug/l	5	12	67	60	58	0.12
Conventional, Microbiological and Miscellaneous Constituents							
Laboratory pH	pH units	--	10	6.8	3.2	2.3	0.69
Hardness as CaCO3	mg/l	1	12	20	19	19	0.11
Tot. Suspended Solids	mg/l	4	9	77	63	60	0.15
Tot. Dissolved Solids	mg/l	5	12	47	42	41	0.14
BOD	mg/l	2	12	15	12	11	0.27
COD	mg/l	20	12	87	65	60	0.20
TOC	mg/l	1	12	7.8	5.6	4.7	0.43
Total Coliform	MPN/100ml	2	13	999615	136793	120376	0.15
Fecal Coliform	MPN/100ml	2	13	871331	24610	19659	0.21
Fecal Streptococcus	MPN/100ml	2	13	1922715	105357	85728	0.19
Total Grease & Oil	mg/l	0.1	13	2.9	1.7	1.3	0.73
Tot. Kjeldahl Nitrogen	mg/l	0.1	12	2.4	2.1	1.9	0.38
Nitrate as N	mg/l	0.05	12	0.51	0.50	0.45	0.41
Total Nitrogen	mg/l		12	2.86	2.55	2.33	0.33
Ammonia as N	mg/l	0.1	12	0.64	0.61	0.57	0.35
Total Phosphorus	mg/l	0.1	12	0.43	0.41	0.38	0.40
Dissolved Phosphorus	mg/l	0.1	12	0.23	0.23	0.21	0.34

Table C4. Statistical data summary of organic compounds in runoff from MS-18 (Thornton and Mosher) - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Chlorinated Pesticides (EPA 608)							
alpha-BHC	ug/l	0.01	0				
gamma-BHC	ug/l	0.01	0				
4,4'-DDT	ug/l	0.020	0				
4,4'-DDE	ug/l	0.023	0				
Organophosphate Pesticides (EPA 614)							
Chlorpyrifos	ug/l	0.05	8	0.12	0.12	0.09	0.77
Diazinon	ug/l	0.05	8	0.69	0.62	0.51	0.62
Malathion	ug/l	0.10	8	0.27	0.22	0.12	1.46
Parathion, methyl	ug/l	0.10	8	0.11	0.11	0.09	0.58
Prometon	ug/l	0.10	6	0.11	0.11	0.09	0.58
Prowl	ug/l	0.10	8	0.13	0.13	0.11	0.64
Semi-volatile Organics (EPA 625)							
phenol	ug/l	0.20	2	0.27	0.26	0.26	0.07
2-methylphenol	ug/l	0.20	0				
4-methylphenol	ug/l	0.20	0				
2-nitrophenol	ug/l	0.20	2	0.27	0.27	0.26	0.28
benzoic acid	ug/l	1.0	3	3.0	2.9	2.7	0.24
naphthalene	ug/l	0.10	0				
2-methylnaphthalene	ug/l	0.10	0				
dimethylphthalate	ug/l	0.10	3	0.25	0.24	0.20	0.63
acenaphthene	ug/l	0.10	0				
dinitrophenol	ug/l	0.50	2	1.8	1.7	1.5	0.35
4-nitrophenol	ug/l	0.50	2	1.3	1.3	1.3	0.26
fluorene	ug/l	0.10	0				
diethylphthalate	ug/l	0.10	3	0.44	0.43	0.42	0.25
4,6-dinitro-2-methylphenol	ug/l	0.50	0				
pentachlorophenol	ug/l	0.50	0				
phenanthrene	ug/l	0.10	1	0.14	0.14		
anthracene	ug/l	0.10	0				
di-n-butyl phthalate	ug/l	0.10	2	0.79	0.78	0.77	0.16
fluoranthene	ug/l	0.10	3	0.17	0.17	0.16	0.35
pyrene	ug/l	0.10	3	0.19	0.19	0.17	0.52
butyl benzyl phthalate	ug/l	0.10	2	0.36	0.35	0.31	0.47
chrysene	ug/l	0.20	0				
bis(2-ethylhexyl)phthalate	ug/l	0.10	5	27	9.5	6.5	0.60
di-n-octylphthalate	ug/l	0.10	3	0.52	0.51	0.46	0.42
benzo(b)fluoranthene	ug/l	0.10	0				

Table C5. Statistical data summary of trace metals, conventional and microbiological constituents in runoff from CR-45 (Sutter and Calaveras) - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Total Metals							
Cadmium	ug/l	0.1	14	0.5	0.5	0.4	0.49
Chromium	ug/l	1	13	7.7	6.3	5.6	0.32
Copper	ug/l	1	14	17.3	15	14	0.19
Lead	ug/l	1	14	22.6	20	19	0.16
Nickel	ug/l	1	14	10.0	8.2	7.5	0.27
Zinc	ug/l	5	14	133.2	109	104	0.14
Dissolved Metals							
Cadmium	ug/l	0.1	14	0.1	0.1	0.1	0.26
Chromium	ug/l	1	14	1.6	1.0	1.0	0.04
Copper	ug/l	1	14	4.5	4.1	3.8	0.32
Lead	ug/l	1	14	1.8	1.4	1.3	0.33
Nickel	ug/l	1	14	2.9	2.0	1.7	0.49
Zinc	ug/l	5	14	42.7	37	34	0.23
Conventional, Microbiological and Miscellaneous Constituents							
Laboratory pH	pH units	--	7	6.8	6.8	6.8	0.03
Hardness as CaCO3	mg/l	1	14	28.9	25	24	0.15
Tot. Suspended Solids	mg/l	4	11	108.8	94	90	0.13
Tot. Dissolved Solids	mg/l	5	14	122.4	87	80	0.19
BOD	mg/l	2	14	54.6	20	16	0.41
COD	mg/l	20	14	98.1	73	67	0.19
TOC	mg/l	1	14	21.2	15	14	0.29
Total Coliform	MPN/100ml	2	14	8505178.6	198012	148929	0.22
Fecal Coliform	MPN/100ml	2	14	5774521.4	23911	16286	0.28
Fecal Streptococcus	MPN/100ml	2	14	2454214.3	170936	140483	0.18
Total Grease & Oil	mg/l	0.1	14	2.8	2.0	1.6	0.58
Tot. Kjeldahl Nitrogen	mg/l	0.1	14	2.8	2.4	2.2	0.38
Nitrate as N	mg/l	0.05	14	0.5	0.42	0.34	0.67
Total Nitrogen	mg/l		14	3.3	2.85	2.58	0.35
Ammonia as N	mg/l	0.1	14	0.6	0.54	0.5	0.47
Total Phosphorus	mg/l	0.1	14	0.8	0.58	0.4	0.93
Dissolved Phosphorus	mg/l	0.1	14	0.2	0.20	0.2	0.54

Table C6. Statistical data summary of organic compounds in runoff from CR-45 (Sutter and Calaveras) - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Chlorinated Pesticides (EPA 608)							
alpha-BHC	ug/l	0.01	1	0.02	0.02		
gamma-BHC	ug/l	0.01	1	0.02	0.02		
4,4'-DDT	ug/l	0.020	1	0.033	0.033		
4,4'-DDE	ug/l	0.023	1	0.024	0.024		
Organophosphate Pesticides (EPA 614)							
Chlorpyrifos	ug/l	0.05	8	0.1	0.10	0.1	0.84
Diazinon	ug/l	0.05	8	0.5	0.39	0.3	0.93
Malathion	ug/l	0.10	8	0.1	0.10	0.1	0.80
Parathion, methyl	ug/l	0.10	8	0.1	0.10	0.1	0.80
Prometon	ug/l	0.10	8	0.1	0.04	0.0	0.72
Prowl	ug/l	0.10	8	0.1	0.10	0.1	0.80
Semi-volatile Organics (EPA 625)							
phenol	ug/l	0.20	3	0.7	0.68	0.5	0.63
2-methylphenol	ug/l	0.20	2	0.4	0.41		
4-methylphenol	ug/l	0.20	2	1.1	0.91		
2-nitrophenol	ug/l	0.20	3	0.3	0.31	0.3	0.29
benzoic acid	ug/l	1.0	4	5.6	4.58	3.9	0.40
naphthalene	ug/l	0.10	2	0.3	0.28	0.2	0.67
2-methylnaphthalene	ug/l	0.10	3	0.4	0.36	0.3	0.56
dimethylphthalate	ug/l	0.10	3	0.3	0.32	0.3	0.63
acenaphthene	ug/l	0.10	0				
dinitrophenol	ug/l	0.50	4	2.1	1.87	1.7	0.40
4-nitrophenol	ug/l	0.50	3	2.4	2.02	1.6	0.56
fluorene	ug/l	0.10	0				
diethylphthalate	ug/l	0.10	4	0.5	0.49	0.5	0.21
4,6-dinitro-2-methylphenol	ug/l	0.50	0				
pentachlorophenol	ug/l	0.50	1	0.6	0.59		
phenanthrene	ug/l	0.10	2	0.1	0.10	0.1	0.06
anthracene	ug/l	0.10	0				
di-n-butyl phthalate	ug/l	0.10	4	0.9	0.92	0.9	0.24
fluoranthene	ug/l	0.10	1	0.1	0.13		
pyrene	ug/l	0.10	2	0.1	0.12	0.1	0.27
butyl benzyl phthalate	ug/l	0.10	4	0.4	0.36	0.4	0.18
chrysene	ug/l	0.20	0				
bis(2-ethylhexyl)phthalate	ug/l	0.10	6	15.4	6.33	4.4	0.62
di-n-octylphthalate	ug/l	0.10	2	0.5	0.50	0.5	0.06
benzo(b)fluoranthene	ug/l	0.10	0				

Table C7. Statistical data summary of trace metals, conventional and microbiological constituents in runoff from CR-46 (West Lane and Calaveras) - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Total Metals							
Cadmium	ug/l	0.1	14	0.9	0.8	0.7	0.41
Chromium	ug/l	1	14	11.7	9.1	8.1	0.31
Copper	ug/l	1	14	20.5	17	16	0.20
Lead	ug/l	1	14	25.0	22	21	0.16
Nickel	ug/l	1	14	14.1	10	9	0.29
Zinc	ug/l	5	14	216.4	189	184	0.10
Dissolved Metals							
Cadmium	ug/l	0.1	14	0.3	0.3	0.2	0.47
Chromium	ug/l	1	14	1.8	1.6	1.5	0.39
Copper	ug/l	1	14	6.7	5.0	4.3	0.38
Lead	ug/l	1	14	1.4	1.3	1.3	0.24
Nickel	ug/l	1	14	2.1	2.0	1.8	0.32
Zinc	ug/l	5	14	95.9	69	64	0.20
Conventional, Microbiological and Miscellaneous Constituents							
Laboratory pH	pH units	--	11	6.8	3.4	2.5	0.64
Hardness as CaCO3	mg/l	1	14	20.6	19	19	0.13
Tot. Suspended Solids	mg/l	4	11	88.4	79	77	0.11
Tot. Dissolved Solids	mg/l	5	14	51.6	46	45	0.13
BOD	mg/l	2	14	13.0	11	11	0.20
COD	mg/l	20	14	71.3	56	53	0.18
TOC	mg/l	1	14	12.0	10	9	0.24
Total Coliform	MPN/100ml	2	15	5617866.7	122449	97390	0.20
Fecal Coliform	MPN/100ml	2	15	5427296.7	20655	13700	0.30
Fecal Streptococcus	MPN/100ml	2	14	3695128.6	91904	74900	0.19
Total Grease & Oil	mg/l	0.1	15	3.4	2.5	2.0	0.53
Tot. Kjeldahl Nitrogen	mg/l	0.1	14	2.1	2.0	1.8	0.29
Nitrate as N	mg/l	2.1	14	0.6	0.6	0.5	0.46
Total Nitrogen	mg/l	3.1	14	2.7	2.5	2.3	0.28
Ammonia as N	mg/l	4.1	14	0.8	0.8	0.7	0.37
Total Phosphorus	mg/l	5.1	14	0.4	0.4	0.3	0.50
Dissolved Phosphorus	mg/l	6.1	14	0.2	0.2	0.2	0.74

Table C8. Statistical data summary of organic compounds in runoff from CR-46 (West Lane and Calaveras) - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Chlorinated Pesticides (EPA 608)							
alpha-BHC	ug/l	0.01	1	0.05	0.05		
gamma-BHC	ug/l	0.01	1	1.10	1.10		
4,4'-DDT	ug/l	0.020	0				
4,4'-DDE	ug/l	0.023	0				
Organophosphate Pesticides (EPA 614)							
Chlorpyrifos	ug/l	0.05	9	0.1	0.10	0.1	0.87
Diazinon	ug/l	0.05	9	0.5	0.4	0.2	1.17
Malathion	ug/l	0.10	9	0.1	0.10	0.1	0.81
Parathion, methyl	ug/l	0.10	9	0.1	0.1	0.1	0.81
Prometon	ug/l	0.10	9	0.1	0.10	0.1	0.81
Prowl	ug/l	0.10	9	0.1	0.1	0.1	0.75
Semi-volatile Organics (EPA 625)							
phenol	ug/l	0.20	1	0.31	0.31		
2-methylphenol	ug/l	0.20	0				
4-methylphenol	ug/l	0.20	0				
2-nitrophenol	ug/l	0.20	3	0.33	0.33	0.32	0.16
benzoic acid	ug/l	1.0	4	3.6	3.5	3.4	0.19
naphthalene	ug/l	0.10	0				
2-methylnaphthalene	ug/l	0.10	1	0.11	0.11		
dimethylphthalate	ug/l	0.10	4	2.6	1.03	0.46	1.59
acenaphthene	ug/l	0.10	0				
dinitrophenol	ug/l	0.50	4	2.1	1.9	1.7	0.35
4-nitrophenol	ug/l	0.50	3	3.0	2.9	2.8	0.19
fluorene	ug/l	0.10	0				
diethylphthalate	ug/l	0.10	4	6.4	2.0	0.99	1.27
4,6-dinitro-2-methylphenol	ug/l	0.50	0				
pentachlorophenol	ug/l	0.50	3	3.4	3.4	3.3	0.14
phenanthrene	ug/l	0.10	2	0.30	0.29	0.29	0.19
anthracene	ug/l	0.10	0				
di-n-butyl phthalate	ug/l	0.10	4	0.94	0.92	0.89	0.22
fluoranthene	ug/l	0.10	4	0.37	0.35	0.31	0.53
pyrene	ug/l	0.10	3	0.49	0.49	0.49	0.09
butyl benzyl phthalate	ug/l	0.10	4	0.58	0.57	0.54	0.29
chrysene	ug/l	0.20	1	0.29	0.29		
bis(2-ethylhexyl)phthalate	ug/l	0.10	5	14	6.4	4.6	0.59
di-n-octylphthalate	ug/l	0.10	4	1.3	1.2	1.2	0.23
benzo(b)fluoranthene	ug/l	0.10	1	0.18	0.18		

Table C9. Statistical data summary of trace metals, conventional and microbiological constituents in runoff from DC-65 (W. Pacific Industrial Park and Duck Creek) - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Total Metals							
Cadmium	ug/l	0.1	13	0.7	0.6	0.5	0.67
Chromium	ug/l	1	13	15.1	11	10	0.32
Copper	ug/l	1	13	17.8	15	15	0.20
Lead	ug/l	1	13	12.9	9.4	8.1	0.35
Nickel	ug/l	1	13	15.0	12	11	0.26
Zinc	ug/l	5	13	175.7	152	147	0.12
Dissolved Metals							
Cadmium	ug/l	0.1	13	0.1	0.1	0.1	0.30
Chromium	ug/l	1	13	1.7	1.4	1.2	0.46
Copper	ug/l	1	13	4.1	3.3	2.9	0.39
Lead	ug/l	1	13	1.0	1.0	1.0	0.10
Nickel	ug/l	1	13	2.8	2.3	2.0	0.41
Zinc	ug/l	5	13	25.6	18	16	0.29
Conventional, Microbiological and Miscellaneous Constituents							
Laboratory pH	pH units	--	12	7.3	2.4	1.5	0.88
Hardness as CaCO3	mg/l	1	13	42.2	41	40	0.07
Tot. Suspended Solids	mg/l	4	8	217.5	187	179	0.13
Tot. Dissolved Solids	mg/l	5	13	104.0	96	94	0.08
BOD	mg/l	2	12	23.0	20.9	20	0.15
COD	mg/l	20	13	102.8	88	85	0.13
TOC	mg/l	1	13	14.3	12.2	11.3	0.23
Total Coliform	MPN/100ml	2	12	217750.0	138742	132290	0.09
Fecal Coliform	MPN/100ml	2	12	22558.3	10283	9172	0.16
Fecal Streptococcus	MPN/100ml	2	12	557000.0	284696	263636	0.11
Total Grease & Oil	mg/l	0.1	13	4.1	3.5	3.2	0.35
Tot. Kjeldahl Nitrogen	mg/l	0.1	13	3.4	3.0	2.7	0.33
Nitrate as N	mg/l	0.05	13	0.9	0.86	0.80	0.35
Total Nitrogen	mg/l		13	3.5	3.84	3.56	0.28
Ammonia as N	mg/l	0.1	12	0.8	0.85	0.77	0.40
Total Phosphorus	mg/l	0.1	13	0.9	0.79	0.65	0.61
Dissolved Phosphorus	mg/l	0.1	13	0.5	0.42	0.30	0.87

Table C10. Statistical data summary of organic compounds in runoff from DC-65 (W. Pacific Industrial Park and Duck Creek) - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Chlorinated Pesticides (EPA 608)							
alpha-BHC	ug/l	0.01	0				
gamma-BHC	ug/l	0.01	0				
4,4'-DDT	ug/l	0.020	0				
4,4'-DDE	ug/l	0.023	0				
Organophosphate Pesticides (EPA 614)							
Chlorpyrifos	ug/l	0.05	8	0.1	0.11	0.09	0.77
Diazinon	ug/l	0.05	8	0.4	0.33	0.20	1.19
Malathion	ug/l	0.10	8	0.1	0.12	0.09	0.77
Parathion, methyl	ug/l	0.10	8	0.2	0.15	0.10	0.98
Prometon	ug/l	0.10	8	0.2	0.15	0.10	0.98
Prowl	ug/l	0.10	8	0.2	0.17	0.13	0.83
Semi-volatile Organics (EPA 625)							
phenol	ug/l	0.20	2	0.4	0.38	0.38	0.13
2-methylphenol	ug/l	0.20	0				
4-methylphenol	ug/l	0.20	0				
2-nitrophenol	ug/l	0.20	2	0.61	0.61	0.61	0.02
benzoic acid	ug/l	1.0	4	3.6	3.5	3.4	0.16
naphthalene	ug/l	0.10	3	0.56	0.47	0.29	1.12
2-methylnaphthalene	ug/l	0.10	2	0.16	0.16	0.15	0.25
dimethylphthalate	ug/l	0.10	2	0.30	0.29	0.24	0.63
acenaphthene	ug/l	0.10	2	0.36	0.35	0.34	0.22
dinitrophenol	ug/l	0.50	4	2.1	2.0	1.9	0.20
4-nitrophenol	ug/l	0.50	4	1.6	1.5	1.4	0.33
fluorene	ug/l	0.10	3	0.2	0.20	0.19	0.34
diethylphthalate	ug/l	0.10	4	0.6	0.57	0.47	0.58
4,6-dinitro-2-methylphenol	ug/l	0.50	2	1.1	1.1	1.0	0.22
pentachlorophenol	ug/l	0.50	1	14	14		
phenanthrene	ug/l	0.10	3	0.14	0.14	0.14	0.20
anthracene	ug/l	0.10	3	0.15	0.15	0.15	0.25
di-n-butyl phthalate	ug/l	0.10	4	1.3	1.2	1.2	0.30
fluoranthene	ug/l	0.10	2	0.20	0.19	0.18	0.44
pyrene	ug/l	0.10	4	0.20	0.20	0.19	0.36
butyl benzyl phthalate	ug/l	0.10	4	0.43	0.42	0.41	0.24
chrysene	ug/l	0.20	0				
bis(2-ethylhexyl)phthalate	ug/l	0.10	6	23	5.4	3.1	0.87
di-n-octylphthalate	ug/l	0.10	1	0.29	0.29		
benzo(b)fluoranthene	ug/l	0.10	0				

APPENDIX D

STATISTICAL DATA SUMMARIES BY

LAND USE - 1992 THROUGH 1998

Table D1. Statistical data summary of trace metals, conventional and microbiological constituents in runoff from residential land use sites - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Total Metals							
Cadmium	ug/l	0.1	39	0.4	0.4	0.3	0.58
Chromium	ug/l	1	39	5.8	3.8	3.1	0.49
Copper	ug/l	1	39	14.4	12	11	0.23
Lead	ug/l	1	39	17.8	13	11	0.32
Nickel	ug/l	1	39	7.1	5.6	4.9	0.35
Zinc	ug/l	5	39	131.6	110	106	0.13
Dissolved Metals							
Cadmium	ug/l	0.1	39	0.1	0.1	0.1	0.30
Chromium	ug/l	1	39	1.6	1.4	1.2	0.46
Copper	ug/l	1	39	4.4	3.8	3.5	0.30
Lead	ug/l	1	39	1.4	1.3	1.2	0.34
Nickel	ug/l	1	39	2.1	1.8	1.6	0.41
Zinc	ug/l	5	39	51.6	41	38	0.19
Conventional, Microbiological and Miscellaneous Constituents							
Laboratory pH	pH units	--	19	6.8	6.7	6.7	0.02
Hardness as CaCO3	mg/l	1	36	24.5	22	21	0.12
Tot. Suspended Solids	mg/l	4	30	80.9	57	54	0.17
Tot. Dissolved Solids	mg/l	5	39	76.9	61	58	0.17
BOD	mg/l	2	39	29.2	16	14	0.33
COD	mg/l	20	39	83.0	58	52	0.22
TOC	mg/l	1	39	14.5	11	9.8	0.34
Total Coliform	MPN/100ml	2	41	3908573.2	85617	54721	0.29
Fecal Coliform	MPN/100ml	2	41	2637734.1	34553	25675	0.24
Fecal Streptococcus	MPN/100ml	2	41	2190297.6	166318	134772	0.19
Total Grease & Oil	mg/l	0.1	41	3.0	4.5	1.5	1.56
Tot. Kjeldahl Nitrogen	mg/l	0.1	39	2.5	2.3	2.0	0.42
Nitrate as N	mg/l	0.05	39	0.5	0.57	0.46	0.65
Total Nitrogen	mg/l		39	3.0	2.46	2.20	0.37
Ammonia as N	mg/l	0.1	39	0.6	0.68	0.56	0.59
Total Phosphorus	mg/l	0.1	39	0.5	0.46	0.36	0.72
Dissolved Phosphorus	mg/l	0.1	39	0.2	0.23	0.20	0.46

Table D2. Statistical data summary of organic compounds in runoff from residential land use sites - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Chlorinated Pesticides (EPA 608)							
alpha-BHC	ug/l	0.01	2	0.04	0.03	0.03	0.60
gamma-BHC	ug/l	0.01	3	0.38	0.30	0.15	1.60
4,4'-DDT	ug/l	0.020	1	0.033	0.033		
4,4'-DDE	ug/l	0.023	1	0.024	0.024		
Organophosphate Pesticides (EPA 614)							
Chlorpyrifos	ug/l	0.05	24	0.1	0.12	0.10	0.66
Diazinon	ug/l	0.05	24	0.7	0.59	0.47	0.69
Malathion	ug/l	0.10	24	0.2	0.16	0.10	1.28
Parathion, methyl	ug/l	0.10	24	0.1	0.11	0.09	0.71
Prometon	ug/l	0.10	20	0.1	0.13	0.11	0.66
Prowl	ug/l	0.10	24	0.1	0.11	0.09	0.69
Semi-volatile Organics (EPA 625)							
phenol	ug/l	0.20	8	0.44	0.40	0.32	0.69
benzyl alcohol	ug/l	1.0	2	2.2	2.1	2.1	0.06
2-methylphenol	ug/l	0.20	3	0.43	0.43	0.40	0.34
4-methylphenol	ug/l	0.20	3	0.88	0.75	0.55	0.79
2-nitrophenol	ug/l	0.20	8	0.33	0.33	0.32	0.22
benzoic acid	ug/l	1.0	12	4.1	3.6	3.3	0.29
naphthalene	ug/l	0.10	2	0.29	0.28	0.23	0.67
4-chloro-3-methylphenol	ug/l	0.10	2	0.20	0.20	0.19	0.32
2-methylnaphthalene	ug/l	0.10	4	0.35	0.34	0.30	0.49
dimethylphthalate	ug/l	0.10	11	0.90	0.46	0.22	1.60
acenaphthene	ug/l	0.10	0				
dinitrophenol	ug/l	0.50	11	1.8	1.7	1.6	0.28
4-nitrophenol	ug/l	0.50	9	2.1	1.8	1.7	0.38
fluorene	ug/l	0.10	0				
diethylphthalate	ug/l	0.10	13	2.7	1.1	0.61	1.21
4,6-dinitro-2-methylphenol	ug/l	0.50	1	0.67	0.67		
pentachlorophenol	ug/l	0.50	2	0.59	0.59		
phenanthrene	ug/l	0.10	4	0.12	0.12	0.12	0.14
anthracene	ug/l	0.10	0				
di-n-butyl phthalate	ug/l	0.10	10	0.80	0.79	0.76	0.23
fluoranthene	ug/l	0.10	4	0.16	0.16	0.15	0.32
pyrene	ug/l	0.10	6	0.16	0.16	0.15	0.44
butyl benzyl phthalate	ug/l	0.10	11	0.34	0.34	0.33	0.25
chrysene	ug/l	0.20	0				
bis(2-ethylhexyl)phthalate	ug/l	0.10	18	15	4.8	3.2	0.69
di-n-octylphthalate	ug/l	0.10	9	0.40	0.39	0.36	0.39
benzo(b)fluoranthene	ug/l	0.10	0				

Table D3. Statistical data summary of trace metals, conventional and microbiological constituents in runoff from commercial land use sites - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Total Metals							
Cadmium	ug/l	0.1	14	0.9	0.8	0.7	0.41
Chromium	ug/l	1	14	11.7	9.1	8.1	0.31
Copper	ug/l	1	14	20.5	17	16	0.20
Lead	ug/l	1	14	25.0	22	21	0.16
Nickel	ug/l	1	14	14.1	10	9.3	0.29
Zinc	ug/l	5	14	216.4	189	184	0.10
Dissolved Metals							
Cadmium	ug/l	0.1	14	0.3	0.3	0.2	0.47
Chromium	ug/l	1	14	1.8	1.6	1.5	0.39
Copper	ug/l	1	14	6.7	5.0	4.3	0.38
Lead	ug/l	1	14	1.4	1.3	1.3	0.24
Nickel	ug/l	1	14	2.1	2.0	1.8	0.32
Zinc	ug/l	5	14	95.9	69	64	0.20
Conventional, Microbiological and Miscellaneous Constituents							
Laboratory pH	pH units	--	8	6.8	6.7	6.7	0.04
Hardness as CaCO3	mg/l	1	11	20.6	19.1	18.7	0.13
Tot. Suspended Solids	mg/l	4	11	88.4	79.0	76.8	0.11
Tot. Dissolved Solids	mg/l	5	14	51.6	46.4	44.9	0.13
BOD	mg/l	2	14	13.0	11.4	10.8	0.20
COD	mg/l	20	14	71.3	56.4	52.9	0.18
TOC	mg/l	1	14	12.0	10.0	9.3	0.24
Total Coliform	MPN/100ml	2	15	5617866.7	122449.4	97390.5	0.20
Fecal Coliform	MPN/100ml	2	15	5427296.7	20655.4	13700.3	0.30
Fecal Streptococcus	MPN/100ml	2	14	3695128.6	91903.6	74900.2	0.19
Total Grease & Oil	mg/l	0.1	15	3.4	2.5	2.0	0.53
Tot. Kjeldahl Nitrogen	mg/l	0.1	14	2.1	2.0	1.8	0.29
Nitrate as N	mg/l	0.05	14	0.6	0.6	0.5	0.46
Total Nitrogen	mg/l		14	2.7	2.5	2.3	0.28
Ammonia as N	mg/l	0.1	14	0.8	0.8	0.7	0.37
Total Phosphorus	mg/l	0.1	14	0.4	0.4	0.3	0.50
Dissolved Phosphorus	mg/l	0.1	14	0.2	0.2	0.2	0.74

Table D4. Statistical data summary of organic compounds in runoff from commercial land use sites - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Chlorinated Pesticides (EPA 608)							
alpha-BHC	ug/l	0.01	1	0.1	0.00		
gamma-BHC	ug/l	0.01	1	1.1	0.1		
4,4'-DDT	ug/l	0.020	0				
4,4'-DDE	ug/l	0.023	0				
Organophosphate Pesticides (EPA 614)							
Chlorpyrifos	ug/l	0.05	9	0.1	0.1	0.1	0.87
Diazinon	ug/l	0.05	9	0.5	0.3	0.2	1.35
Malathion	ug/l	0.10	9	0.1	0.3	0.2	1.35
Parathion, methyl	ug/l	0.10	9	0.1	0.1	0.1	0.93
Prometon	ug/l	0.10	9	0.1	0.1	0.1	0.81
Prowl	ug/l	0.10	9	0.1	0.1	0.1	0.81
Semi-volatile Organics (EPA 625)							
phenol	ug/l	0.20	1	0.31	0.31		
2-methylphenol	ug/l	0.20	0				
4-methylphenol	ug/l	0.20	0				
2-nitrophenol	ug/l	0.20	2	0.31	0.30	0.30	0.18
benzoic acid	ug/l	1.0	3	3.4	3.3	3.1	0.23
naphthalene	ug/l	0.10	0				
2-methylnaphthalene	ug/l	0.10	1	0.11	0.11		
dimethylphthalate	ug/l	0.10	3	0.16	0.16	0.15	0.40
acenaphthene	ug/l	0.10	0				
dinitrophenol	ug/l	0.50	3	1.7	1.6	1.4	0.38
4-nitrophenol	ug/l	0.50	2	2.7	2.6	2.5	0.23
fluorene	ug/l	0.10	0				
diethylphthalate	ug/l	0.10	3	0.51	0.50	0.49	0.18
4,6-dinitro-2-methylphenol	ug/l	0.50	0				
pentachlorophenol	ug/l	0.50	2	3.4	3.3	3.2	0.20
phenanthrene	ug/l	0.10	2	0.30	0.29	0.29	0.19
anthracene	ug/l	0.10	0				
di-n-butyl phthalate	ug/l	0.10	3	1.1	1.0	1.0	0.12
fluoranthene	ug/l	0.10	3	0.45	0.45	0.43	0.27
pyrene	ug/l	0.10	3	0.49	0.49	0.49	0.09
butyl benzyl phthalate	ug/l	0.10	3	0.64	0.63	0.60	0.28
chrysene	ug/l	0.20	1	0.29	0.29		
bis(2-ethylhexyl)phthalate	ug/l	0.10	4	17	8.5	6.3	0.53
di-n-octylphthalate	ug/l	0.10	3	1.4	1.4	1.3	0.19
benzo(b)fluoranthene	ug/l	0.10	1	0.18	0.18		

Table D5. Statistical data summary of trace metals, conventional and microbiological constituents in runoff from industrial land use sites - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Total Metals							
Cadmium	ug/l	0.1	13	0.7	0.6	0.5	0.67
Chromium	ug/l	1	13	15.1	11	10	0.32
Copper	ug/l	1	13	17.8	15	15	0.20
Lead	ug/l	1	13	12.9	9.4	8.1	0.35
Nickel	ug/l	1	13	15.0	12	11	0.26
Zinc	ug/l	5	13	175.7	152	147	0.12
Dissolved Metals							
Cadmium	ug/l	0.1	13	0.1	0.1	0.1	0.30
Chromium	ug/l	1	13	1.7	1.4	1.2	0.46
Copper	ug/l	1	13	4.1	3.3	2.9	0.39
Lead	ug/l	1	13	1.0	1.0	1.0	0.10
Nickel	ug/l	1	13	2.8	2.3	2.0	0.41
Zinc	ug/l	5	13	25.6	18	16	0.29
Conventional, Microbiological and Miscellaneous Constituents							
Laboratory pH	pH units	--	7	7.3	7.3	7.2	0.05
Hardness as CaCO3	mg/l	1	13	42.2	41	40	0.07
Tot. Suspended Solids	mg/l	4	8	217.5	187	179	0.13
Tot. Dissolved Solids	mg/l	5	13	104.0	96	94	0.08
BOD	mg/l	2	13	23.0	16.2	14	0.34
COD	mg/l	20	13	102.8	88	85	0.13
TOC	mg/l	1	13	14.3	12.2	11.3	0.23
Total Coliform	MPN/100ml	2	12	21775.0	138742	132290	0.09
Fecal Coliform	MPN/100ml	2	12	22558.3	10283	9172	0.16
Fecal Streptococcus	MPN/100ml	2	12	557000.0	284696	263636	0.11
Total Grease & Oil	mg/l	0.1	13	4.1	3.5	3.2	0.35
Tot. Kjeldahl Nitrogen	mg/l	0.1	13	3.4	3.0	2.7	0.33
Nitrate as N	mg/l	0.05	13	0.9	0.86	0.80	0.35
Total Nitrogen	mg/l		13	3.7	3.37	3.14	0.28
Ammonia as N	mg/l	0.1	12	0.9	0.84	0.76	0.39
Total Phosphorus	mg/l	0.1	13	0.9	0.77	0.63	0.61
Dissolved Phosphorus	mg/l	0.1	13	0.4	0.34	0.23	1.00

Table D6. Statistical data summary of organic compounds in runoff from industrial land use sites - 1992 through 1998

Parameter Analyzed	Units	DL	n	Arithmetic Mean	Geometric Mean	Median	CV
Chlorinated Pesticides (EPA 608)							
alpha-BHC	ug/l	0.01	0				
gamma-BHC	ug/l	0.01	0				
4,4'-DDT	ug/l	0.020	0				
4,4'-DDE	ug/l	0.023	0				
Organophosphate Pesticides (EPA 614)							
Chlorpyrifos	ug/l	0.05	8	0.1	0.11	0.09	0.77
Diazinon	ug/l	0.05	8	0.4	0.33	0.20	1.19
Malathion	ug/l	0.10	8	0.1	0.12	0.09	0.77
Parathion, methyl	ug/l	0.10	8	0.2	0.15	0.10	0.98
Prometon	ug/l	0.10	8	0.2	0.15	0.10	0.98
Prowl	ug/l	0.10	8	0.2	0.17	0.13	0.83
Semi-volatile Organics (EPA 625)							
phenol	ug/l	0.20	2	0.4	0.38	0.38	0.13
2-methylphenol	ug/l	0.20	0				
4-methylphenol	ug/l	0.20	0				
2-nitrophenol	ug/l	0.20	2	0.61	0.61	0.61	0.02
benzoic acid	ug/l	1.0	4	3.6	3.5	3.4	0.16
naphthalene	ug/l	0.10	3	0.56	0.47	0.29	1.12
2-methylnaphthalene	ug/l	0.10	2	0.16	0.16	0.15	0.25
dimethylphthalate	ug/l	0.10	2	0.30	0.29	0.24	0.63
acenaphthene	ug/l	0.10	2	0.36	0.35	0.34	0.22
dinitrophenol	ug/l	0.50	4	2.1	2.0	1.9	0.20
4-nitrophenol	ug/l	0.50	4	1.6	1.5	1.4	0.33
fluorene	ug/l	0.10	3	0.2	0.20	0.19	0.34
diethylphthalate	ug/l	0.10	4	0.6	0.57	0.47	0.58
4,6-dinitro-2-methylphenol	ug/l	0.50	2	1.1	1.1	1.0	0.22
pentachlorophenol	ug/l	0.50	1	14	14		
phenanthrene	ug/l	0.10	3	0.14	0.14	0.14	0.20
anthracene	ug/l	0.10	3	0.15	0.15	0.15	0.25
di-n-butyl phthalate	ug/l	0.10	4	1.3	1.2	1.2	0.30
fluoranthene	ug/l	0.10	2	0.20	0.19	0.18	0.44
pyrene	ug/l	0.10	4	0.20	0.20	0.19	0.36
butyl benzyl phthalate	ug/l	0.10	4	0.43	0.42	0.41	0.24
chrysene	ug/l	0.20	0				
bis(2-ethylhexyl)phthalate	ug/l	0.10	6	23	5.4	3.1	0.87
di-n-octylphthalate	ug/l	0.10	1	0.29	0.29		
benzo(b)fluoranthene	ug/l	0.10	0				

APPENDIX E

PHASE I, II AND III

TOXICITY IDENTIFICATION EVALUATION RESULTS:

CITY OF STOCKTON STORMWATER PROJECT

TOXICITY IDENTIFICATION EVALUATIONS (T.I.E.s):

CITY OF STOCKTON STORMWATER PROJECT

Wet Weather Event
(10-11 November 1997)

Sampling Stations:

MS14 • CR46 • DC65

FINAL REPORT

Prepared for:

CITY OF STOCKTON, CA

Prepared by:

TOXSCAN, INC.
Watsonville, CA

April 1998

TOXICITY IDENTIFICATION EVALUATIONS (TIEs):
City of Stockton Stormwater Project
Wet Weather Event: 10 - 11 November 1997

EXECUTIVE SUMMARY

The attached report documents procedures, methods, results and conclusions of two Toxicity Identification Evaluations (TIEs) performed on three stormwater samples collected by the City of Stockton from Mosher Slough, Calaveras River and Duck Creek on 10 November 1997. For the evaluations, a suite of toxicity testing, chemical and mechanical manipulations and chemical analyses were performed on the samples. Two test species, an alga and a water flea, were used in the toxicity evaluations. Algal testing included elements of Phase I and Phase II TIEs; water flea testing proceeded further, to Phase III TIE testing. Principal findings of this study include:

- Initial toxicity screening found significantly lowered algal productivity in all three samples, and acute toxicity to water fleas in the Mosher Slough sample.

- In the algal tests, Phase I (Characterization) manipulations included aeration and C_{18} SPE, and produced contrasting results among the three samples tested. Aeration, which removes volatile or surfactant compounds, resulted in diminished productivity in one sample (Mosher Slough), but significantly increased algal growth in the other two samples. C_{18} SPE treatment, which removes non-polar organic toxicants and some metals, resulted in increased growth in the Mosher Slough and Calaveras River samples, but had no apparent effect on the Duck Creek sample.

- Phase II (Identification) evaluations of algal toxicity included analysis for nutrients, total metals (Mosher Slough and Calaveras River) and organic toxicants (Mosher Slough). Nutrient data did not correlate with observed algal bioassay productivity among the samples. In the Mosher Slough sample, analysis of concentrated sample found substantial amounts (9.3 µg/L whole sample) of the fungicide chlorothalonil (Bravo), and trace amounts (80 ng/L whole sample) of the herbicide DCPA (Dacthal). Metals analyses found zinc at concentrations potentially toxic to *Selenastrum* algae in the Mosher Slough and (especially) the Calaveras River samples.

- In the water flea (*Ceriodaphnia*) tests, Phase I manipulations included aeration, filtration, C_{18} SPE, and the additions of STS, PBO and EDTA to the Mosher Slough sample. These manipulations implicated non-polar organic toxicants, specifically organophosphate pesticides (OP's). Volatile or surfactant compounds also may have contributed to sample toxicity.

- Phase II testing of the Mosher Slough sample with *Ceriodaphnia* confirmed partial inhibition of toxicity by PBO, and identified two organophosphate pesticides, diazinon and malathion, in whole-sample concentrations sufficient to cause the observed toxicity. No metals were found at levels sufficient to reduce water flea survival in the bioassays.

- In Phase III (Confirmation) testing with water fleas, add-back experiments were able to re-capture all original sample toxicity with back spikes of the two organophosphates. Individual back-spikes of Bravo and Dacthal did not affect *Ceriodaphnia* survival in the add-back experiments.

- In Summary: Mosher Slough sample toxicity to water fleas (*Ceriodaphnia*) was attributable to the organophosphate pesticides diazinon and malathion. An unknown volatile or surfactant compound may have been a minor contributor to toxicity of this sample. In the limited *Selenastrum* evaluation, the identified algal toxicant suspects include Bravo, Dacthal, zinc and volatile or surfactant compounds.

TOXICITY IDENTIFICATION EVALUATIONS (TIEs):
City of Stockton Stormwater Project

Wet Weather Event: 10 - 11 November 1997

Sampling Stations

MS14 • CR46 • DC65

INTRODUCTION

ToxScan Inc. performed abbreviated Phase I, Phase II or Phase III Toxicity Identification Evaluations (TIEs) of water samples collected by the City of Stockton from three sampling stations during a wet-weather event on 10 - 11 November 1997. TIEs seek to identify toxicants in an effluent via a series of manipulations and associated bioassays which target a systematically narrowing list of suspect toxicants (EPA 1991, EPA 1993A, EPA 1993B).

During this storm event, a tiered series of testing and analyses was performed on the three stormwater sump samples. Each of the samples was screened for toxicity to the two test species employed in these evaluations: A freshwater alga (*Selenastrum capricornutum*) and a water flea (*Ceriodaphnia dubia*). If toxicity was demonstrated, modified Phase I TIE procedures were implemented. Phase II TIE procedures, to identify suspect toxicants characterized during Phase I, were pursued with both test species. Phase III TIEs, to confirm the suspect toxicants' contributions to sample toxicity, were performed with *Ceriodaphnia* only.

The three stormwater samples, identified as MS14, CR46 and DC65, were collected between 1645h and 1655h on 10 November 1977, and were received at 1235h on 11 November at ToxScan's Watsonville laboratories. An additional sample, also identified as DC65, was collected at 0835h on 10 November, and was characterized as "Receiving water- background comparison for algae". The four samples, received intact, were assigned ToxScan laboratory identification numbers T-15725-01, -02, -03 and -04, respectively. Grab samples were collected by the City of Stockton, perquisite to discussions with staff of the Central Valley Regional Water Quality Control Board.

TIEs using each test species are treated separately in this report to accommodate the methodologies and responses observed. Table 1 summarizes the Phase I toxicity testing and manipulations; Table 2 summarizes the Phase I testing schedule.

Selenastrum capricornutum

METHODS

SCREENING PHASE

For *Selenastrum*, screening toxicity was measured relative to a receiving water sample collected immediately prior to the storm event. The chronic test endpoint was cell growth. Screening Phase samples were considered toxic if algal cell growth was significantly diminished compared to the DC65 receiving water sample, by ANOVA and Dunnett's Tests at $\alpha = 0.05$.

The three stormwater sump samples, a receiving water sample (near site DC-65) and a laboratory control were inoculated with unicellular alga (*Selenastrum capricornutum*) from our laboratory cultures. Testing procedures followed EPA/600/4-91/002 (USEPA 1994). Laboratory control water was E-pure deionized water. Samples and controls were enriched with *Selenastrum* Culture Medium (without EDTA) prior to filtering.

Algal assays were conducted in sterile 250 mL Erlenmeyer flasks. All algal counts were made manually with a hemacytometer and microscope. Treatment groups and controls were set up with four replicates, which included one dummy replicate for monitoring. Testing was conducted under continuous illumination of 86 ± 10% microE/M^2/s at 25 ± 1°C for 96 hours. Test flasks were inoculated with approximately 1×10^4 cells/mL from a 4-day-old stock culture. Cultures were shaken twice daily by hand and systematically rotated on the shelf. Test temperature and pH were monitored once daily in the dummy replicate test container. Laboratory control alkalinity and hardness were monitored in the sump water samples at test breakdown on Day 4.

PHASE I - Characterization

Phase I TIE manipulations were conducted on samples demonstrating screening phase toxicity. Samples were bioassay tested with *Selenastrum* after C_{18} SPE and after aeration. Bioassay test procedures for the alga were the same as in the Screening Phase testing. Phase I testing compared the toxicities of unaltered and TIE-manipulated samples.

PHASE II - Identification

Phase II treatment of *Selenastrum* bioassay samples included chemical analyses for organochlorine pesticides, total metals and for algal nutrient compounds (total ammonia, nitrate, nitrite and orthophosphate). C_{18} SPE 100% MEOH eluate of sample MS14 was analyzed for organophosphate (OP) and organochlorine (OC) pesticides by EPA Methods 8140 and 8080. Metals were analyzed in samples MS14 and CR46 by EPA Methods 200.8, 206.3, 245.1 and 270.3. Ammonia testing used an ammonia probe calibrated with three standards (1.0 mg/L, 10 mg/L and 100 mg/L). Analyses of nitrate, nitrite and phosphorus were performed by Soil Control Lab, Watsonville, CA.

RESULTS

SCREENING PHASE

Bioassay data from the three stormwaters were compared with receiving water data. The algal bioassays, initiated on 11 November, yielded the following results (see Table 3): Mean cell density in the receiving water control at the end of the four-day test was 5.24×10^6 cells per mL. Stormwater sample MS14 produced 3.55×10^6 cells/mL, sample CR46 produced 3.78×10^6 cells/mL, and sample DC-65 produced 3.28×10^6 cells/mL. Comparison of these cell densities by ANOVA/Dunnett's test showed that productivity in each of the stormwaters was significantly lower than the receiving water control, suggesting that the runoff samples may have contained algal toxicants, or lacked sufficient nutrients.

PHASE I

Follow-up TIE manipulations were performed on 18 November. The limited manipulations employed were sample aeration and SPE using a C_{18} column. Each of the three stormwater samples was bioassayed before and after TIE manipulations. The fourth (receiving water) was also re-tested to assess changes in growth resulting from sample aging and/or sample storage. The results of these bioassays are summarized in Table 3.

In comparison with the initial bases on 11 November, the ability of all four water samples to support *Selenastrum* growth was reduced by laboratory storage of the samples in the dark at 4 °C for seven days. However, a similar drop in productivity was also seen in the laboratory control, which suggests that the change in productivity was unrelated to storage. Statistical comparison with baseline data showed that aeration significantly decreased the ability of sample MS-14 to support algal growth. In contrast, algal growth was significantly increased after aeration of samples CR-46 and DC-65. Our aeration blank showed significantly reduced algal growth in laboratory control water after aeration (Table 3).

C_{18} SPE treatment dramatically increased growth of *Selenastrum* in sample MS14, substantially increased growth in sample CR46, and had no statistically significant effect on algal growth in sample DC65. Our C_{18} blank showed that growth was significantly reduced in laboratory control water which had been passed through a C_{18} column (Table 3).

PHASE II

The results of Phase II analytical efforts are summarized in Table 4, including nutrient and metals analyses performed on the original water samples and pesticide analyses performed on the 100% MEOH eluate of a C_{18} SPE column.

DISCUSSION

Discussion of the *Selenastrum* TIE results is complicated by the absence of paired pre-storm receiving water samples for all three stormwater samples and by the fact that blank toxicity was observed in connection with both of the TIE manipulations performed in this very limited study. Assuming that our single receiving water control is comparable for all runoff samples, we conclude that growth of *Selenastrum* was significantly inhibited in all stormwaters tested, with cell densities in stormwaters ranging from 63% to 72% of that achieved in the pre-storm control.

The inhibition of growth produced by aeration in sample MS14 is attributable to toxicity produced by the aeration itself, as evidenced by the positive aeration blank. The fact that aeration significantly enhanced algal growth in samples CR46 and DC65 suggests that a volatile toxicant was removed by the manipulation; further, the increase in growth was sufficient to overwhelm the toxicity introduced by the aeration, suggesting that toxicity attributable to volatiles was substantial.

C_{18} SPE treatment of sample MS14 produced an approximate 275% increase in cell density over baseline level; C_{18} treatment enhanced algal growth in sample CR46 by about 190%, while the growth increase produced by C_{18} in sample DC65 was slight (128%) and not statistically significant. These results suggest that algal toxicity in samples MS14 and CR46 was influenced by either a non-polar organic compound or, perhaps, by one of the heavy metals (nickel, silver, zinc, aluminum and, sometimes, copper) known to be removed by C_{18} columns. Again, the finding of C_{18} blank toxicity suggests that the efficacy of C_{18} in removing sample toxicants was substantial, overwhelming the apparent toxicity introduced by the column.

Nutrient data did not correlate with algal growth in the four water samples. Orthophosphate and nitrite were not detected in any sample. Nitrate was in highest concentration in the receiving water, correlating with the highest cell density found in the bioassays; however, nitrate in the three stormwaters varied by a factor of three and there was no relationship between nitrate and cell density in those samples. There was clearly no relationship between ammonia and cell growth, with the highest cell density found in one of the two samples with low ammonia.

Metals data may be of interest. ToxScan routinely uses zinc as the reference toxicant in *Selenastrum* bioassays, and the mean IC_{50} for zinc in our laboratory control chart is 11.4 ppb ± 5.5 ppb. The concentration of zinc in samples MS-14 (9.7 ppb) and, especially, CR-46 (78 ppb) could have produced growth inhibition in the range observed, which could have been alleviated by the C_{18} treatment. We cannot, however, unequivocally attribute toxicity (and reversal by C_{18}) in these samples to zinc because the water samples were analyzed for total metals rather than for the more bioactive dissolved metals. In any case, C_{18} showed a more dramatic effect in the sample which had the lower measured zinc level (MS14) ; this may suggest that the metal was not bioavailable and therefore was not an active toxicant in these samples.

Among the pesticides detected in sample MS14 were two organochlorine compounds. DCPA (Dacthal), an herbicide, was detected at a concentration of 80 parts per trillion (ppt); Chlorothalonil (Bravo), a fungicide, was found at the much higher concentration of 9.3 parts per billion (ppb). In addition, the organophosphate insecticides Diazinon and Malathion were found at 2.99 and 1.26 ppb, respectively.

We were unable to find literature reporting the sensitivity of *Selenastrum* to any of these pesticides and thus have no means of evaluating their possible contribution to the toxicity detected by this algal bioassay.

In summary, significant reduction of algal growth was documented in three stormwater samples relative to a single pre-storm sample. Aeration of the stormwaters had mixed effect, apparently increasing toxicity in sample MS-14 and reducing toxicity in samples CR-46 and DC-65. C_{18} SPE treatment also affected the stormwaters differentially, apparently reducing toxicity in samples MS-14 and CR-46 and having no effect on toxicity in sample DC-65. Interpretation of the aeration and C_{18} data was complicated by apparent toxicity in both treatment blanks. Analysis of plant nutrients in all four samples showed no correlation of nutrients with algal growth. Analysis of total metals showed that zinc was present in potentially toxic concentrations in samples MS-14 and CR-46, but absence of analytical data on dissolved zinc precludes definitive conclusions relative to the contribution of this metal to sample toxicity. Pesticide analyses detected two organophosphate insecticides and two organochlorine pesticides (a fungicide and an herbicide) among the constituents removed from sample MS-14 by the C_{18} column. The absence of toxicity information to *Selenastrum* for these pesticides prevents attribution of observed algal toxicity to these compounds.

Ceriodaphnia dubia

METHODS

SCREENING PHASE

For *Ceriodaphnia*, screening toxicity was determined by the acute endpoint within a chronic test. A sample was considered toxic if 50% mortality was observed within 48 hr of test initiation. The toxic sample(s) were then subjected to Phase I TIE manipulations (see below).

Water fleas were exposed to 100% concentrations of each sump water sample, and to a laboratory control. Test procedures followed EPA600/4-91/002 (USEPA 1994). Laboratory control water was synthetic moderately hard with 10% Perrier® plus selenium. Test organisms were <24 hr old neonates derived from in-house cultures. Original broodstock was from EPA Duluth, received 11 May, 1988 and cultured in laboratory control water prepared with E-Pure water.

Testing was conducted with 10 individuals per treatment, each in individual plastic cups containing 20 mL of test solution. Test temperature was 25 ± 1°C and photoperiod was 16:8 L:D. Test solutions were renewed daily, concurrent with transfers, water quality measurements and assessment of survival and reproduction. At each daily transfer, new media were inoculated with food (200 μL of a 3:1 mixture of *Selenastrum* culture, density approximately 2.5 X 10^6 cells/mL and *Ceriodaphnia* chow).

PHASE I - Characterization

Phase I water flea bioassays were conducted under EPA Acute protocols (USEPA 1991). For *Ceriodaphnia*, acute lethality toxicity tests were used throughout the post-screening phase TIE

characterizations (the screening phase testing assessed mortality data from a 7-day chronic test). Initial (range-finding) tests of acute toxicity were set up on Day 0, along with samples treated with piperonyl butoxide (PBO). Elimination of all measurable toxicity in PBO-treated qualifying toxic samples was considered presumptive evidence of organophosphate toxicity, and further testing was rescinded. If PBO only partially eliminated the observed toxicity, then broader scale Phase I testing was continued. Sample aliquots were manipulated and the Baseline acute test was set up with exposure concentrations based on mortality observed after 24h in the Initial test. Final analyses compared *Ceriodaphnia* 96h LC_{50}s of each manipulated aliquot to that of an unaltered (Baseline) sample. Procedures of each chemical or physical manipulation followed those described in USEPA (1991):

- Filtration was by vacuum induction through a 1.0 micron glass-fiber filter.
- SPE of the sample utilized a C_{18} column. Two post-column aliquots were subjected to bioassay testing in each treatment. The first aliquot was taken after 25 mL of sample had passed the column to ensure that no dilution water is left in the system. To assess the extent of column overloading and possible toxicant breakthrough a second aliquot was taken after 150 mL of sample had passed.
- EDTA stock solution was added to each 10 mL test aliquot at three rates: 0.2 mL, 0.05 mL and 0.0125 mL. The stock solution concentration was determined based on the Initial effluent LC_{50} and hardness titration.
- STS stock solution was added to each 10mL test aliquot at three rates: 0.5g/L, 0.25 g/L and 0.125 g/L. The stock solution concentration was based on EPA recommendations (USEPA 1991).
- PBO stock solution was added to each 10mL test aliquot at five rates: 125 ppb, 250 ppb, 500 ppb, 750 ppb and 1000 ppb. The stock solution concentration was based on EPA recommendations (USEPA 1991).

Ceriodaphnia used in testing were <24 hr neonates derived from in-house cultures (see above). The Initial and Baseline tests were conducted with 10 individuals per treatment, five in each of two plastic cups containing 10 mL of test solution. All subsequent testing of manipulated samples involved only five individuals per treatment in a single cup containing 10 mL of test solution. Test temperature was 25 ± 1°C and photoperiod was 16:8 L:D. Toxicity tests were 96 hr in duration and test animals were fed at 0 hr and 48 h. Mortality was the only endpoint evaluated in these tests.

Sample concentration ranges for toxicity tests were dependent upon the sample's Initial 24 hr LC_{50}. If the 24 hr LC_{50} was less than 25% sample, a concentration series of 0.5x-, 1x-, 2x- and 4x-LC_{50} was used. If the 24 hr LC_{50} was greater than 25% sample, four concentrations beginning at 100% were dictated; for EDTA, STS and PBO manipulations of the sample, the three highest sample concentrations of those determined above were used.

For TIE comparisons, sample toxicity is expressed in Toxicity Units (TU) which increase directly with toxicity:

$$TU = \frac{100}{LC50}$$

Calculation of LC_{50}s was by the Trimmed Spearman-Karber method (Hamilton et al. 1977). If the Spearman-Karber LC_{50} was not calculable, linear interpolation was used (EPA Bootstrap; 120 iterations). Statistical calculations were facilitated by ToxStat®, ToxCalc™, TOXIS© or USEPA software.

Ammonia.

The graduated pH test was not included in the methodology for Phase I testing. Therefore, we analyzed the unaltered samples for total ammonia, as per the method described for *Selenastrum*.

PHASE II - Identification

Non-polar organic compounds were implicated as the primary toxicant class during the Phase I testing of the one sample (MS14) sufficiently toxic for TIE evaluation (See Results section, below). Therefore, Phase II TIE procedures targeted these compounds, especially organophosphate pesticides.

As in the Phase I TIE, acute lethality toxicity tests (with *Ceriodaphnia*) were used in the Phase II characterizations. In all steps, laboratory blanks were tested in parallel with manipulated stormwater to control for incidental toxicity, and standard water quality parameters (pH, D.O. and temperature) were closely monitored to ensure QA/QC limits were not exceeded.

Non-Polar Organics.

Our procedures followed those of EPA (1993), but also drew heavily on Bailey, et al. (1996). The approach is one of successive steps of fractionation, methanol elution and concentration, each followed by toxicity tests and chemical analyses until suspect toxicants are identified and compared with toxicity values. The following paragraphs summarize the methods employed during Phase II non-polar organic investigations.

C_{18} SPE Fractionation. Two C_{18} columns were conditioned with methanol (MEOH), deionized (E-Pure) water and diluent. Each column was then eluted consecutively with two successive 1.5 mL aliquots of increasing concentrations of MEOH in E-Pure water. A total of nine concentrations of MEOH were used for these blank elutions (25%, 50%, 70%, 75%, 80%, 85%, 90%, 95%, 100%). Corresponding elutions from each column were combined to get a total recovered volume of 6.0 mL for each MEOH concentration. The column was then reconditioned with MEOH and E-Pure.

Following collection of the elution blanks, 2133 mL of filtered (1 μ, glass fiber) stormwater sample were passed through the columns. The columns were then eluted (as above) with nine increasing concentrations of MEOH. The resulting fractions were 355.5x concentrates of the original sample.

Toxicity tests were run immediately after SPE fractionation on each MEOH fraction (blank and stormwater); each had been diluted back to 4x the original whole sample concentration. In addition, 3 aliquots of post-column sample (at 25 mL, 500 mL and 950 mL) were tested to determine toxicant breakthrough.

HPLC Fractionation. MEOH fractions which demonstrated toxicity, and their corresponding MEOH blank fractions were further concentrated, then fractionated using High Performance Liquid Chromatography (HPLC). For each sample, this produced a total of 20 concentrated (710x) sub-fractions which were tested for toxicity after dilution back to 8x original whole sample.

GC/NPD (EPA 8140) and GC/ECD (EPA 8080A) analysis. The original stormwater sample was extracted and concentrated with a C_{18} SPE column and analyzed by the nitrogen-phosphorous detection (NPD) method (EPA 8140) which screens for organophosphate pesticides, and by the electron-capture detection (ECD) method (EPA 8080) which targets organochlorine compounds. The MEOH and HPLC toxic fractions were also analyzed with GC/NPD and GC/ECD.

Carbamate analysis. The HPLC toxic fractions were analyzed by fluorescence detector (EPA Method 632) which screens for carbamate pesticides.

GC/MS analysis. The HPLC toxic fractions were extracted and analyzed for semi-volatile compounds by GC/MS (EPA Method 8270).

Metals.

Phase II identification of suspected metals toxicants in original whole sample MS14 was by EPA Methods 200.8, 206.3, 245.1 and 270.3, for ten metals: As, Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, and Zn.

PHASE III - Confirmation

Phase III TIE procedures were implemented for sample MS14 only. For non-polar organics, add-back experiments were performed with diazinon, malathion, chlorothalonil and dacthal. Concentrations of the suspected toxicants equivalent to those measured in whole sample were back-spiked into "stripped" whole sample which had been passed through a C_{18} SPE column. Add-back concentrations were based on the original whole sample concentrations.

The back-spiked samples were subsequently bioassay tested to determine the extent to which the original sample toxicity could be recovered. During Phase III testing, acute bioassays were performed with four replicates of five animals in five dilutions of back-spiked sample, to more precisely assess mass balance comparisons. Five add-back experiments were performed, one for each of the four detected organic toxicants, and one "mixed cocktail" in which all four analytes were added back at their original concentrations.

Phase III procedures for potential metals contributions to toxicity consisted of comparing metals concentrations found in the original whole sample with published *Ceriodaphnia* LC_{50} values.

RESULTS

SCREENING PHASE

The seven-day chronic screening tests were set up with 100% sample the afternoon of 11 November, within 24 hours of sample collection. Sample MS14 exhibited acute toxicity (100% mortality) within the first 24 hr of the bioassay, whereas neither of the other two samples (CR46 and DC65) exhibited measurable acute toxicity in the chronic screens (Table 5).

PHASE I

TIE procedures (Initial Effluent test, PBO screen and effluent manipulations) were started on 11 November. As in the Screening test, no measurable toxicity was observed in either sample CR46 or DC65. In sample MS14, the Initial Effluent test produced 100% mortality within 24 hours in all sample concentrations above 25%, and the 25% concentration produced 100% mortality at 48 hours. The 96-hour LC_{50} for MS14 in the Initial Effluent test was 17.0% (5.88 TU). PBO additions (125, 250 and 500 ppb) were partially protective of *Ceriodaphnia* in MS14, reducing toxicity to 1.6 to 1.3 TU (Table 5).

The Baseline Effluent test and tests of manipulated aliquots were initiated on 12 November. Based on the 24 hr Initial Effluent LC_{50} of 17.0%, the dilution series for the Baseline test was set at 12.5%, 25%, 50%, 75% and 100%. Bioassay results obtained from the Baseline test and the manipulated aliquots are summarized as follows (see Table 6).

- The Baseline 96 hr LC_{50} was 16.2% (6.2 TU), comparable to the Initial 96 hr LC_{50} of 17.0% (5.9 TU).

- Aeration of the sample appeared to reduce sample toxicity slightly, to 5.7 TU. Therefore, some toxicity may have been due to volatile, oxidizable or surfactant compounds

- Filtration of the sample appeared to increase sample toxicity somewhat, to 7.1 TU. Therefore, particulate-bound toxicants probably did not contribute to sample toxicity, and may have had a protective effect.

- Solid Phase Extraction with C_{18} eliminated all apparent toxicity at both elution volumes; no column overload was evident. Therefore, one or more non-polar organic compounds were probably contributing much of the toxicity of this sample. Since C_{18} SPE can also remove some metals or organo-metallic toxicity, these substances may also be contributing to the toxicity of this sample.

- Treatment of the sample with PBO reduced sample toxicity by 75% to 85% in each of the five concentration dosages. Therefore, metabolically-activated organophosphate compounds were suspected as the primary toxicants in the sample.

- EDTA additions did not appear to reduce sample toxicity. Thus, cationic metals were not likely to have contributed significant toxicity to the sample.

Ammonia.

Total ammonia in unaltered sample MS14 was 0.24 mg/L; this value translates to unionized ammonia concentrations of approximately 0.002 to 0.02 mg/L at ambient test temperature (25±1°C) and pH (7.2 to 8.2). These values are well below the 48 hr LC_{50} values of 0.78 and 1.73 mg/L for *Ceriodaphnia* at the two pHs (USEPA 1993A). Total ammonia 48 hr LC_{50} values for *Ceriodaphnia* at pH 7.2 and 8.2 are 81 mg/L and 20 mg/L, respectively. Thus, ammonia was not considered a significant factor in sample toxicity.

PHASE II

Non-polar Organics.

Phase II TIE testing of sample MS14 was initiated on 13 November, with C_{18} SPE concentration of whole sample for non-polar organic analyses (Table 7). Results of the analyses are summarized below (see Table 8).

GC/NPD and GC/ECD analysis of 100% MEOH eluate of two C_{18} SPE columns each loaded with 1-L of whole sample (333x concentration) detected four potential organic toxicants: Diazinon, malathion, chlorothalonil and dacthal.

SPE Fractionation. Acute toxicity was observed in two of the nine MEOH fractions. Complete mortality was evident within 24 hr in the 75% fraction, and within 48 hours in the 70% fraction. No measurable toxicity was found in any other elution (sample or blank). Subsequent toxicity testing of an 8x equivalent concentration of the combined toxic fractions produced 100% mortality within 24 hr.

GC/NPD and GC/ECD analysis of the combined 70% and 75% MEOH fractions found the same four organic compounds as in the original C_{18} extracted whole sample (diazinon, malathion, chlorothalonil and dacthal) but at somewhat reduced concentrations (Table 8).

During the concentration process, only 40% of the MEOH eluate was recovered from the C_{18} column (575 µL of 1440 µL). The remainder (865 µL) was apparently sequestered in tubing used in the extraction apparatus. Therefore, the concentration factors used in the back-calculations to equate analyte loads in whole sample are in doubt for the MEOH toxic fractions and for the HPLC toxic fractions. The concentration factors used in Table 8 for MEOH and HPLC toxic fractions are based on the arithmetic mean of the minimum (40%) and theoretical maximum (100%) recoveries of analytes in the 575 µL of MEOH eluate recovered. For the combined toxic 70%-75% MEOH fractions the min/max values are 1481x and 3710x ($\bar{x}$ = 2596x). For the HPLC fractions the min/max values are 405x and 1013x ($\bar{x}$ = 709x).

Subsequent bioassays found acute toxicity in HPLC fractions #14, #17 and #18. The #17 and #18 fractions were combined. This combined #17-#18 fraction and fraction #14 were each concentrated and extracted on a C_{18} SPE column (see above), then analyzed for OP's and OC's by GC, and for any tentatively identified compounds (TIN's) by GC/MS.

C_{18} extractions with three volumes of whole sample (25 mL, 500 mL and 950 mL) each removed virtually all toxicity. Therefore, toxicant breakthrough was not significant in the C_{18} SPE.

HPLC Fractionation. Toxicity testing found substantial toxicity in three of the 20 HPLC sub-fractions: #14 and #17 each produced 100% mortality within 24 hours, and #18 produced complete mortality at 96 hours. Additionally, toxicity (80% mortality in 96 h) was found in the fraction #16 blank. Subsequent retesting of Blank #16 failed to reproduce any toxicity.

GC/NPD, GC/ECD and HPLC (EPA 632) analyses of the toxic HPLC fractions revealed substantial concentrations of diazinon (approximately 240 μg/L) and lesser amounts of dacthal (3 μg/L) in combined fraction #17-18. These analyses also found approximately 185 μg/L of malathion in HPLC fraction #14. Carbamates were not detected in the toxic HPLC fractions. When adjusted for the 709x concentration factor, these quantities extrapolated to 340 ng/L diazinon, 261 ng/L malathion and 4.2 ng/L dacthal in the original stormwater sample (Table 8).

GC/MS analysis (EPA 8270) detected no targeted compounds or tentatively identified compounds in the toxic HPLC fractions from sample MS14.

Metals

Analysis of whole sample found no metals at levels considered deleterious to *Ceriodaphnia* (Table 9).

PHASE III

Non-polar Organics.

Add-back experiments with C_{18}- stripped whole sample MS14 are summarized in Table 10. Back- spiking of the individual suspect toxicants produced TU values of 7.5 and 2.5 for diazinon and malathion. Neither chlorothalonil nor dacthal produced significant toxicity in the add-backs. Back-spiking of the "Mixed Cocktail" of all four suspect toxicants produced a TU of 8.6.

Metals.

Because none of the metals detected in whole sample MS14 exceeded published toxicity levels, no confirmatory testing was deemed necessary during Phase III.

DISCUSSION

Stormwater sample MS14 harbored substantial toxicity (approximately 6 TU) which was essentially maintained throughout the two-month TIE- testing process: Baseline toxicity ranged from 4.3 to 8.0 TU, and averaged 5.8 TU over the course of ten bioassay events (Table 11). TIE procedures, results and

interpretations for sample MS14 are summarized in Table 12 using approaches developed during the Alameda DUST Marsh study (Woodward-Clyde 1995).

During Phase I testing, Initial and Baseline levels of toxicity (5.9 and 6.2 TU) were substantially diminished (up to 85.5%) by the addition of 125 ppb to 1000 ppb PBO. Toxicity was eliminated completely by C_{18} SPE, and reduced by about 8.3% after aeration of the sample. Therefore, Phase II focused on the identification of non-polar organic toxicants in the sample.

Phase II chemical analyses of C_{18} -extracted whole sample found diazinon (2990 ng/L) and malathion (1260 ng/L) in concentrations equivalent to 6.0 TU and 0.9 TU, respectively. These two OP pesticides theoretically account for the observed whole sample toxicity in MS14. In addition, an herbicide (dacthal) and a fungicide (chlorothalonil) were detected at levels of unknown toxicity to *Ceriodaphnia*. Successive fractionation and toxicity testing of MS14 by MEOH elution of the C_{18} column, and HPLC fractionation of the toxic MEOH fractions confirmed the presence of diazinon, malathion and dacthal. No other potential organic toxicants were identified during the fractionation and concentration process. Analysis of whole sample for ten metals found none at concentrations considered toxic to *Ceriodaphnia*.

In Phase III experiments, add-backs of the four identified suspect toxicants, individually and as a "mixed cocktail" produced more toxicity in C_{18}- stripped whole sample than in concurrently run baseline samples. The sum of TU's produced by the individual add-backs (10.0 TU) exceeded the observed toxicity of the "mixed cocktail (8.6 TU) by 16% and exceeded the 10 event mean baseline toxicity (5.8 TU) by 72%. Virtually all of the toxicity in the add-backs was accounted for by diazinon and malathion. Therefore, it appears that despite the presence of other potential toxicants in MS14, virtually all toxicity to *Ceriodaphnia* in the sample can be attributed to organophosphate pesticides, particularly diazinon.

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TABLES

Table 1. Phase I TIE toxicity tests and chemical manipulations, stormwater sump samples MS14, CR46 and DC65, collected 10 - 11 November 1997.

TREATMENT	*Selenastrum*			*Ceriodaphnia*		
	MS14	CR46	DC65	MS14	CR46	DC65
Chronic Toxicity Screen	X	X	X	X	X	X
Initial & Baseline Toxicity	X	X	X	X	X	X
Aeration	X	X	X	X		
Filtration				X		
C_{18} SPE	X	X	X	X		
Sodium Thiosulfate (STS)				X		
Piperonyl butoxide (PBO)				X	X	X
EDTA chelation				X		

Table 2. Schedule of Phase I TIE sample manipulations and analyses, stormwater samples MS14, CR46 and DC65 (10-11 November 1997).

Selenastrum	
Start chronic screen (4-day)	11 November 1997
Start Phase I manipulations: • Aeration • C_{18}	18 November 1997
Phase I Toxicity testing completed	22 November 1997
Ceriodaphnia	
Start chronic screen (7-day)	11 November 1997
a) Start Initial effluent and PBO Acute testing; and b) Phase I manipulations: • Aeration • Filtration • STS • C_{18} • PBO • EDTA	a) 11 November 1997 b) 12 November 1997
Phase I Toxicity testing completed	16 November 1997
Begin Phase II TIE procedures (See Table 7)	13 November 1997

Table 3. Phase I TIE Bioassay Results, *Selenastrum*. Cell density = cells/mL x 10^6.

Sample	Initial Screen	Baseline	Post-Aeration	Post-C18
Receiving Water	5.24	4.10	--	--
MS14	3.55*	1.44	0.679+	3.98+
CR46	3.78*	1.06	2.18+	2.00+
DC65	3.28*	0.98	2.38+	1.26
Laboratory Water	0.906	0.356	0.148+	0.132+

* Significantly different from receiving water (p=<0.05).
+ Significantly different from baseline (p=<0.05).

Table 4. Phase II TIE Analytical Results, *Selenastrum*.

Analyte	Receiving Water	MS14	CR46	DC65
Nutrients[1] (mg/L):				
Ammonia	0.41	0.24	1.66	0.67
Nitrate	3.9	3.1	2.2	1.0
Nitrite	<.05	<.05	<.05	<.05
Orthophosphate	<.05	<.05	<.05	<.05
Total Metals[1] (µg/L):				
Copper	NA	4.3	9.5	NA
Nickel	NA	3.8	3.4	NA
Silver	NA	<0.2	<0.2	NA
Zinc	NA	9.7	78.0	NA
Pesticides[2] (µg/L):				
Diazinon	NA	2.99	NA	NA
Malathion	NA	1.26	NA	NA
Chlorothalonil	NA	9.31	NA	NA
Dacthal	NA	0.08	NA	NA

[1] From analysis of whole sample. [2] From analysis of 100% MEOH eluate of C_{18} SPE.

Table 5. Phase I TIE Bioassay Results, *Ceriodaphnia*: Day 0 Baseline toxicity and PBO additions, (MS14, CR46 and DC65. Toxicity Units (TU) = 100 ÷ LC_{50}.

TREATMENT	MS14	CR46	DC65
Baseline Sample - Day 0	5.9	<1.0	<1.0
PBO 125 μg/L	1.6^{++}	<1.0	<1.0
250 μg/L	1.3^{++}	<1.0	<1.0
500 μg/L	1.4^{++}	<1.0	<1.0

++ = Toxicity reduced

Table 6. Phase I TIE Bioassay Results, *Ceriodaphnia*: Day 1 Baseline and post- Phase I manipulations toxicity (MS14 only). Toxicity Units (TU) = 100 ÷ LC_{50}.

	MS14	
TREATMENT	TU	EFFECT[1]
Baseline Sample - Day 1	6.2	NA
PBO 750 μg/L	1.33	++
1000 μg/L	NC	NA
EDTA added: 0.2 mL	>4.0	-
0.05 mL	>4.0	-
0.0125 mL	>4.0	-
C18 Extraction (25 mL)	<1.0	+++
C18 Extraction (150 mL)	<1.0	+++
Aeration (Air)	5.7	?
Filtration (1.0 μm)	7.1	-
STS: 0.5 g/L	>4.0	-
0.25 g/L	>4.0	-
0.125 g/L	>4.0	-

+++ = Toxicity removed ++ = Toxicity reduced ? = Toxicity possibly reduced
NA = Not Applicable NC = Not Calculable - = No effect

Table 7. Phase II TIE testing schedule, *Ceriodaphnia*.

TREATMENT	DATES
Phase I TIE Testing completed (See Table 2):	11/16/97
Phase II TIE Toxicity Identification Procedures:	
Begin Phase II Manipulations (Whole Sample): • C_{18} elutions w/ 100%MEOH • C_{18} (post- 25 mL, 500 mL, 950 mL) bioassays	11/13/97
C_{18}/ MEOH fractionation, bioassays	11/19/97
MEOH Toxic fractions combined, concentrated	11/25/97
HPLC fractionation of combined/concentrated (C/C) MEOH toxic fraction	11/26/97
MEOH C/C toxic fraction: Begin toxicity testing (8X whole sample)	11/26/97
HPLC fractions (n = 20): Begin toxicity testing (8X whole sample)	11/26/97
Chemistry Analyses (Extraction dates):	
Whole Sample (C_{18} SPE100% MEOH eluate): • Organophosphates (OP's) by NPD • Organochlorines (OC's) by ECD	11/13/97
Whole Sample: Nutrients • NH_3 - Nitrate - Nitrite • Orthophosphate	11/13/97
MEOH Combined Concentrated Toxic Fractions (70% and 75%): • Organophosphates (OP's) by NPD • Organochlorines (OC's) by ECD	11/25/97
N_2 8x-concentrate of C_{18} extract: • Organophosphates (OP's) by NPD	12/2/97
HPLC Toxic fractions (#14 and #14/18): • TIC's by GC/MS	12/30/97
HPLC Toxic fractions (#14 and #14/18): • Organophosphates (OP's) by HPLC • Organochlorines (OC's) by HPLC • Carbamates by HPLC	12/31/97
Whole Sample: Metals • 10 Metals by EPA 200.8, 206.3, 245.1, 270.3	2/5/98

Table 8. Phase II TIE Analytical Results (MS14 only), *Ceriodaphnia* , non-polar organic compounds.

Fraction	µg/L in Fraction	Concentration Factor	Whole Sample Equivalent (ng/L)
Whole Sample C_{18} Extract:			
Diazinon	996	333	2990
Malathion	419	333	1260
Chlorothalonil	3100	333	9310
Dacthal	26	333	80
MEOH C/C Toxic Fractions (70% and 75%):			
Diazinon	5810	2596†	2240
Malathion	2330	2596†	898
Chlorothalonil	1930	2596†	743
Dacthal	150	2596†	58
N_2 8x-concentrate of C_{18} extract:			
Diazinon	3280	2666	1230
Malathion	1650	2666	619
HPLC Toxic fractions #14 and #17/18 (GC/MS):			
Tentatively Identified Compounds (TIC's)	ND	709†	ND
HPLC Toxic fraction #14 (HPLC):			
Malathion	185	709†	261
HPLC Toxic fraction #17/18 (HPLC):			
Diazinon	241	709†	340
Dacthal	3	709†	4.2

†Calculated from mean theoretical recoveries (see text).

Table 9. Phase II TIE Analytical Results (MS14 only), *Ceriodaphnia*: Total metals (μg/L) compared to daphnid toxicity (LC_{50}[2]).

Metal	DL	MS14	Metals Toxicity		
			Daphnid	Cerio pH 7.2	Cerio pH 8.2
As	0.5	1.1	---	---	---
Cd	0.2	1.1	---	350	120
Cr	1.0	ND	45.1	---	---
Cu	1.0	4.3	18.8	28	200
Pb	1.0	ND	450	>2700	>2700
Hg	0.004	0.058	---	---	---
Ni	1.0	3.8	1500	140	13
Se	0.5	ND	---	---	---
Ag	0.2	ND	---	---	---
Zn	2.0	9.7	900	360	95

[1] Daphnid values from USEPA (1984-1987); Cerio values from Schubauer-Berigan et al. (1993).
DL = Detection Limit; ND = Not detected

Table 10. Theoretical and measured/ recovered TU (MS14), *Ceriodaphnia*. Individual analytes and "Mixed Cocktail" were back-spiked into C_{18}-stripped whole sample.

Analyte	Analyte LC_{50} (ng/L)	MS14 (ng/L)	Theoretical TU	Recovered TU: Back-Spike
Diazinon	500	2990	5.98	7.5
Malathion	1400	1260	0.90	2.5
Chlorothalonil	80×10^3	9310	0.12	<1.0
Dacthal	$>100 \times 10^6$	80	--	<1.0
		$\sum$TU:	7.0	10.0
		Recovered TU - "Mixed Cocktail" Back-Spike:		8.6
		Average Measured TU[1] - Whole Sample:		5.8

[1] Range: 4.3 - 8.0; n = 10; See Table 11

Table 11. Chronology of Baseline Toxicity, MS14. LC_{50} in percent whole sample; TU = 100 ÷ LC_{50}.

Date:	11/11	11/12	11/13	11/19	11/26	12/2	1/12	1/13	1/14	1/15
Days Elapsed:	0	1	2	8	15	21	61	62	63	64
TU:	5.9	6.2	6.6	8.0	5.7	5.7	5.3	4.3	5.3	5.8

Table 12. Toxicity characterization of stormwater sample MS14 (*Ceriodaphnia*).

TREATMENT	TOXICITY STATUS	INFERENCE
Phase I and Phase II TIE Manipulations and Bioassays		
MS14 Original Sample	**Toxic**	Original sample shows moderate toxicity.
MS14 + Piperonyl butoxide (PBO)	**Reduced**	Toxicity of the toxic substance is inhibited by PBO, which inhibits the activation of metabolically-activated organophosphate pesticides (e.g., diazinon, chlorpyrifos, malathion).
MS14 through C_{18} column	**Removed**	Toxicant behaves like a non-polar organic compound and adsorbs to immobilized hydrophobic molecules in the C_{18} column; some metals also may adsorb.
MS14 Aerated	Reduced (?)	Some toxicity possibly associated with volatile, oxidizable or surfactant compound.
MS14 Filtered	**Toxic**	Toxicity not particulates-associated.
MS14 + EDTA	**Toxic**	Toxicity not associated with cationic metals.
Methanol Eluates (25%, 50%, 80%, 85%, 90%, 95% and 100% MEOH) of above C_{18} column, diluted in water	Not-toxic	The toxic substance not recovered at toxic levels from C_{18} column by these methanol concentrations.
Methanol Eluates (70% and 75% MEOH) of above C_{18} column, diluted in water	**Toxic**	The toxic substance(s) can be recovered from C_{18} columns by methanol; diazinon typically elutes with the 75% and 80% MEOH fractions; malathion elutes in the 70% fraction.
HPLC fractions (of the 70%-75% combined MEOH fractions) #1-13, #15-16 and #19-20, diluted in water	Not toxic	The toxic substance(s) is not present in these fractions at toxic levels.
HPLC fractions #14, #17 and #18 diluted in water	**Toxic**	The toxic substances are present in HPLC fractions #14, #17 and #18 at toxic concentrations.

Table continued...

TREATMENT	TOXICITY STATUS	INFERENCE
Chemical Analyses of Whole and Manipulated Sample		
GC analysis of Original Sample	--	Diazinon (2990 ng/L) and malathion (1260 ng/L) present in whole sample at concentrations known to be toxic to *Ceriodaphnia*. Chlorinated pesticides and carbamates not detected; dacthal (herbicide) and chlorothalonil (fungicide) detected.
GC analysis of combined toxic MEOH fractions (70%-75%)	--	Diazinon (2240 ng/L) and malathion (898 ng/L) present in whole sample equivalent concentrations known to be toxic to *Ceriodaphnia*. Chlorinated pesticides and carbamates not detected; dacthal (herbicide) and chlorothalonil (fungicide) detected. Confirms original sample analyses.
GC-NPD analysis of N_2 8x-concentrate of C_{18} extract.	--	Confirms diazinon (1230 ng/L) and malathion (619 ng/L) present in whole sample equivalent concentrations known to be toxic to *Ceriodaphnia*.
GC/MS (EPA 8270) analyses of HPLC toxic fractions (#14 and #17-18)	--	Non-polar organic toxicants not identified at elevated detection limits.
HPLC analysis of HPLC toxic fraction #14	--	Malathion (185 μg/L) detected at whole sample equivalent concentration possibly toxic to *Ceriodaphnia* (see text).
HPLC analysis of HPLC combined toxic fraction #17-18	--	Diazinon (241 μg/L) detected at whole sample equivalent concentration possibly toxic to *Ceriodaphnia* (see text).
Metals analysis of whole sample by EPA Methods 200.8, 206.3, 245.1, 270.3.	--	Total metals concentrations below toxic levels to *Ceriodaphnia* (10 metals).
Back-spikes into Post-C_{18} Whole Sample		
Mixed Cocktail:		
Diazinon (2.99 ppb) Malathion (1.26 ppb) Chlorothalonil (9.31 ppb) Dacthal (0.078 ppb)	**Toxic**	Toxicity of 8.6 TU exceeds toxicity exhibited by original whole sample (5.9 - 6.2 TU) by 40%, and maximum baseline TU (8.0) by 7.5%.
Individual Spikes:		
Diazinon (2.99 ppb)	**Toxic**	Toxicity of 7.5 TU exceeds theoretical toxicity by 25%.
Malathion (1.26 ppb)	**Toxic**	Toxicity of 2.5 TU exceeds theoretical toxicity by >200%.
Chlorothalonil (9.31 ppb)	Not Toxic	Organochlorine fungicide Chlorothalonil not a significant contributor to *Ceriodaphnia* toxicity in sample MS14.
Dacthal (0.078 ppb)	Not Toxic	Organochlorine herbicide Dacthal not a significant contributor to *Ceriodaphnia* toxicity in sample MS14.