

Program Audit Report
Las Vegas Valley Storm Water Management Program:
Clark County Regional Flood Control District; Clark County; City of Las
Vegas; City of North Las Vegas; and City of Henderson
(NPDES Permit No. NV0021911)

September 19-23, 2005

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Las Vegas Valley Storm Water Management Program Audit
Las Vegas, Nevada
September 19-23, 2005

EXECUTIVE SUMMARY

Staff from the U.S. Environmental Protection Agency (EPA) Region 9, the Nevada Division of Environmental Protection (NDEP), and Science Applications International Corporation (SAIC) conducted an audit of the co-permittees implementing the Las Vegas Valley Storm Water Management Program (Program). The audit was conducted over September 19 - 23, 2005. The twofold purpose of the audit was (1) to determine the co-permittees' compliance with the National Pollutant Discharge Elimination System permit (NV0021911) and (2) to evaluate the current implementation of the co-permittees' Storm Water Management Program with respect to EPA storm water regulations. The co-permittees evaluated were the City of Las Vegas, City of North Las Vegas, City of Henderson, Clark County, and the Clark County Regional Flood Control District (CCRFCD). The program audit included a comprehensive office and in-field verification of program implementation.

This program audit report identifies program deficiencies as well as positive attributes and may indicate potential permit violations; however, this report is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation. Positive attributes indicate progress in implementing the Program.

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

- *The SWMP has not been updated to address current activities and has not been updated to address NDEP's comments, dated October 21, 2003. (Permit Sections 4.1 and 4.12)*
- *The co-permittees have not developed a plan nor developed requirements to reduce the discharge of pollutants from areas of new development and significant redevelopment. (Permit Section 4.6.1.2)*
- *The co-permittees do not have ordinances that would provide the authority to require structural as well as nonstructural BMPs for erosion and sediment control at construction sites. (Permit Section 4.9.1.2)*
- *Several co-permittees also do not have the authority to conduct inspections of construction sites. (Permit Section 4.9.1.3)*
- *Some co-permittees have not identified the industrial facilities that are contributing a substantial loading to the MS4 and have not developed an industrial facility monitoring and control program for those industrial facilities. (Permit Section 4.8.1)*

Several positive elements of the co-permittees' programs were particularly notable:

- *The CCRFCD provides a good structural foundation for program oversight, logistics, and communications among the co-permittees.*

- *The CCRFCD has developed excellent Public Service Announcements (PSAs) that target identified areas of concern.*
- *Industrial inspections are largely conducted by pretreatment inspectors who are knowledgeable about stormwater.*
- *Modifications to the Meadows Detention Basin to incorporate a natural, meandering waterway will benefit stormwater quality.*
- *Henderson is considering adopting an “Open Space Plan” that will require developments to retain more open space and will focus on keeping flood channels natural rather than concrete-lined.*

1 INTRODUCTION

1.1 Program Audit Purpose

The purpose of the program audit was to determine the co-permittees’ compliance with the National Pollutant Discharge Elimination System (NPDES) Permit for Discharges from Municipal Separate Storm Sewer Systems (MS4s) No. NV0021911 (Permit) and to evaluate the current implementation of the Program with respect to EPA’s storm water regulations.

This audit reviewed the practices and permit compliance status of the following five co-permittees: Clark County Regional Flood Control District (CCRFCD), Clark County, City of Las Vegas, City of North Las Vegas, and City of Henderson.

The audit team included William Hahn, Jennifer Legge, Dianne Stewart, and Jerry Whittum of SAIC; Ellen Blake, Kathi Moore, Andrew Sallach, and John Tinger of EPA Region 9; and Cliff Lawson, David Lloyd, Darryl Rasner, Larry Rountree, and Chad Schoop of the Nevada Division of Environmental Protection (NDEP).

1.2 Permit History

The NDEP issued the Permit, effective from June 19, 2003 to June 18, 2008 to the CCRFCD, Clark County, Las Vegas, North Las Vegas, Henderson, and the Nevada Department of Transportation (NDOT). NDOT has since been issued a separate NPDES Permit for Discharges from MS4s and was not evaluated in this audit.

This current permit, the second issued to the co-permittees, requires implementation of the Las Vegas Valley Storm Water Management Plan for Municipal Separate Storm Sewer System, dated September 2003 (SWMP) as well as certain modifications to the SWMP required pursuant to comments from NDEP (dated October 21, 2003).

1.3 Logistics and Program Audit Preparation

Before initiating the on-site program audit, SAIC reviewed the following Program materials:

- NPDES Permit No. NV0021911
- SWMP (September 2003)
- *2003-2004 Annual Report for Las Vegas Valley NPDES Municipal Storm Water Discharge Permit* (2003-2004 Annual Report)
- The web site <http://www.lvstormwater.com/index.html> and the co-permittees' individual web sites
- Co-permittees' organizational charts
- Co-permittees' storm water ordinances and
- Lists of construction sites and industrial sites.

On September 19 - 23, 2005, SAIC, EPA Region 9, and NDEP conducted the MS4 program audit. Upon completion of the audit, an exit interview was held to discuss the preliminary findings. During the exit interview, the attendees were informed that the findings were to be considered preliminary pending further review by the EPA and NDEP.

1.4 Program Areas Evaluated

The following Program areas were evaluated:

Table 1. Program Areas Evaluated					
Permit Section	Report Section/Co-Permittee Evaluated				
	2	3	4	5	6
	All	Clark County	Las Vegas	North Las Vegas	Henderson
4.1 Program Management, Reporting & Monitoring	●				
4.2 Legal authority		●	●	●	●
4.5 Public Outreach and Education, and Intergovernmental Coordination	●	●	●	●	●
4.6 Best Management Practices	●	●	●	●	●
4.7 Illicit Discharge and Detection	●	●	●	●	●
4.8 Industrial Facility Monitoring and Control	●	●	●	●	●
4.9 Construction Site BMP Program	●	●	●	●	●

1.5 Program Areas Not Evaluated

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

- The analytical monitoring program
- Other NPDES permits issued to the co-permittees (e.g., industrial or construction NPDES storm water permits).

1.6 Program Audit Results

This report identifies program deficiencies as well as positive attributes and may indicate potential permit violations; however, this report is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation. Positive attributes indicate a co-permittee's progress in implementing the program. The audit team identified only positive attributes that were innovative (beyond minimum requirements). Some areas were found simply to be adequate; that is, they were neither deficient nor particularly innovative.

The audit team did not evaluate all components of each permittee's program. Therefore, the co-permittees should not consider the enclosed list of deficiencies to be a comprehensive evaluation of individual program elements. The most significant potential permit violations, program deficiencies, and positive attributes identified during the audit are noted in the Executive Summary and are identified with text boxes in the following subsections.

The audit team evaluated requirements as written in the permit; as committed to in the SWMP; as discussed in NDEP's comments to the SWMP; or as required under Federal regulations. The recommended actions are based on programs that are being implemented by other MS4s throughout the country or on commitments within the co-permittee's Annual Report. The recommended actions provided in this report, although in some instances only written in one Section of this report, may be applicable to more than one co-permittee. The co-permittees should consider the entire report an evaluation of their combined program and determine whether the recommended actions apply to each individual co-permittee.

2 PROGRAM-WIDE GENERAL FINDINGS

2.1 Program Management, Reporting & Monitoring

Background: The Clark County Regional Flood Control District (CCRFCD) provides overall program management, coordinates reporting, and conducts storm water monitoring.

Positive Attributes

- *The CCRFCD provides a good structural foundation for program oversight, logistics, and communications among the co-permittees.*

The CCRFCD hosts monthly meetings of the co-permittees, funds consultants to conduct storm water sampling, oversees/coordinates construction site inspections (except for the City of Henderson), provides public education outreach, and oversees the SWMP and annual reports. The CCRFCD has a dedicated funding source from a 1/4 cent sales tax.

- *CCRFCD is developing an integrated GIS system with features such as area photography and topographic maps that could be used to support storm water programs.*

Although not currently being used for storm water activities, the data system being developed by the CCRFCD has many potential applications for storm water such as tracking maintenance activities, construction sites, industrial sites, and land use patterns. The permittees should consider integrating storm water system components into the GIS system for system tracking and identifying priorities.

Potential Permit Violation

- | |
|--|
| <ul style="list-style-type: none">• <i>The SWMP has not been updated to address current activities and has not been updated to address NDEP's comments (Permit Sections 4.1 and 4.12).</i> |
|--|

The co-permittees submitted to NDEP a SWMP dated September 29, 2003. In a letter dated October 21, 2003, NDEP indicated that the SWMP met the minimum terms of the permit, subject to certain specific comments and conditions. Although the 2003-2004 Annual Report indicates that a revised SWMP would be produced responsive to NDEP's comments and conditions, the co-permittees had not updated the SWMP to incorporate NDEP's comments as of the time of the audit. A summary of NDEP's comments and the permittees' responses is included in Appendix A.

Program Deficiency

- *The co-permittees do not have an inter-jurisdictional agreement or a description in the SWMP that outlines the responsibilities of each co-permittee with respect to the current permit.*

The co-permittees are sharing responsibility for several components of the SWMP, but these responsibilities are not described in the SWMP. The tables of measurable goals do not clearly identify which co-permittee(s) is responsible for the performance of the goal. In its October 21, 2003 letter, NDEP asked for clarification regarding who was performing each measurable goal.

The co-permittees had an inter-jurisdictional agreement that was created during the first permit term and is no longer representative of current practices. There are separate Memorandums of Understanding for construction site inspections that do represent current practices.

2.2 Public Outreach and Education (Permit Section 4.5)

Background: CCRFCD conducts most public outreach, although other co-permittees have done some minor activities as described in Appendices B.1, C.1, D.1, and E.1.

Positive Attributes

C	<i>The CCRFCD has developed excellent Public Service Announcements (PSAs) that target identified areas of concern.</i>
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PSAs have been developed for pet waste, car washing, fertilizers, spring cleaning (hazardous waste disposal), and one general storm water PSA (called “the toy boat”). The PSAs may serve as a model for other communities. All can be viewed on the Storm Water Quality Management Committee web site (www.lvstormwater.com).

C The web site is thorough, frequently updated, and provides a good source of information for the community.

Although the Annual Report indicates that CCRFCD, Las Vegas Valley Water District, and the Storm Quality Management Committee host, maintain, and update the web site, staff of the Las Vegas Valley Water District primarily created and maintain the web site. CCRFCD should consider entering into a formal agreement with the Las Vegas Valley Water District to ensure that the Storm Water Quality Management Committee web site continues to be maintained.

Program Deficiencies

C Results from public outreach activities are not being tracked or measured.

CCRFCD has a program for elementary school students and is developing a curriculum for seventh grade students, which includes either a self-guided curriculum with a six-minute video or a 35-minute presentation usually to the entire grade level. The teachers complete a survey regarding the effectiveness of the presentation; however, all survey questions focus on flood safety and not storm water pollution. CCRFCD should consider adding a question regarding reduction of storm water pollution to the teacher survey. CCRFCD should also consider tracking mechanisms to evaluate the effectiveness of the PSAs. For example, the City of Honolulu conducts annual surveys to measure effectiveness of education and has used focus groups to determine how to communicate effectively with construction workers.

C Except for 5,000 inlets initially marked by the City of Las Vegas and inlets marked by the City of North Las Vegas, the co-permittees do not have an effective inlet stenciling or marking program.

Storm drain stenciling is an effective and inexpensive way to inform the public about preventing illicit discharges to the storm drain system. For example, the City of San Francisco includes a hotline phone number on their stencils for citizens to report illegal dumping. The co-permittees should consider reinvigorating the stenciling program.

2.3 New Development Controls

Background: During the audit, the co-permittees indicated that they do not plan to require post-construction BMPs.

Positive Attribute

C The Meadows Detention Basin is being modified to incorporate a natural, meandering waterway, and will become part of a regional park.

The modification is expected to achieve water quality benefits for both storm water and dry weather flows. CCRFCD will be conducting sampling to evaluate these results.

Potential Permit Violations

<p><i>C The co-permittees have not developed a plan nor developed requirements to reduce the discharge of pollutants from areas of new development and significant redevelopment (Permit Section 4.6.1.2).</i></p>
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According to the SWMP, runoff from most areas of new development and significant redevelopment will be captured by the existing or proposed detention basins. However, these detention basins are designed specifically to capture runoff from large storm events (typically designed for the 100-year storm) in order to attenuate flows. The detention basins are not designed to provide water quality improvements and are not likely to reduce pollutants other than large debris that may settle out during detention. The co-permittees do not require additional structural or non-structural controls to mitigate water quality impacts from new development and significant redevelopment and do not have ordinances or other measures specifying on-site detention or retention requirements associated with new development or redevelopment. Pursuant to Section 4.6.1.2 of the Permit, the co-permittees must develop and implement a plan to reduce the discharge of pollutants from MS4s which receive discharges from areas of new development and significant redevelopment.

Appendix G of the Annual Report, Chapter 2, contains an evaluation of permanent (post-construction) BMPs potentially applicable for post-construction in the Las Vegas Valley. During the audit, co-permittees indicated that many of the BMPs may not be feasible due to soil conditions in the valley. This discussion should be revised in future Annual Reports to be reflective of actual conditions and to explain why if they are deemed not feasible. The reports should include a discussion of and a schedule for a plan to address pollutants from new development and significant redevelopment.

In developing a plan and controls for new developments, the co-permittees should consider the following:

- C adopting requirements for the conservation of pervious surfaces and vegetative buffers along channels.

- C requiring or encouraging on-site Best Management Practice (BMP) controls at new development sites to control pollutants at the source.
- C requiring on-site BMPs for facilities generating pollutants not expected to be removed in a retrofitted detention basin, such as dissolved pollutants.
- C evaluating BMPs applicable for use in the Las Vegas Valley.

Useful Resources on developing a plan include:

- C EPA's web site Post-Construction Storm Water Management in New Development & Redevelopment (<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post.cfm>).
- C Truckee Meadows Low Impact Development Manual - A program might include: mechanisms for modifying project densities (e.g., transfer of development rights, planned unit developments), new site design requirements (e.g., riparian setbacks, calculation of impervious coverage), land conservation tools (e.g., conservation easements, deed restrictions), and public outreach methods to encourage land use planning designs that protect water quality.
http://www.cityofreno.com/gov/pub_works/stormwater/management/land_use/
- C The Truckee Meadows Structural Controls Manual (Guidance on Source and Treatment Controls for Storm Water Quality Management).
http://www.cityofreno.com/gov/pub_works/stormwater/management/controls/
- C California Stormwater Quality Association Handbook on new development.
<http://www.cabmphandbooks.com/>
- C The City of Poway, California, which converted existing flood control basins to storm water quality detention basins to meet their MS4 permit requirements for new development.

C The co-permittees have not evaluated existing structural flood control devices to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible.

The SWMP (at Section 6.5.1) indicated that a desktop study would be conducted to assess the water quality benefits of existing detention basins and flood control channels in Las Vegas Valley, in order to demonstrate compliance with Permit Section 4.6.1.4. The District representative was unable to provide information regarding the status of the desktop study, although the SWMP committed to a measurable goal of completing the study in the permit year that was ending at the time of the audit. CCRFCD has begun to evaluate potential pollutant reductions obtained in the existing detention basins by conducting inflow/outflow monitoring of three existing detention basins, although no data has been collected to date and it is not clear how the data will be used to formulate a plan. Pursuant to Section 4.6.1.4 of the Permit, the co-permittees must evaluate existing structural flood control devices to determine if retrofitting the devices to provide additional pollutant removal from storm water is feasible.

2.4 Illicit Discharge and Detection (Permit Section 4.7)

Background: Each co-permittee conducts its own illicit discharge and detection program, as discussed in each respective co-permittee section below.

Program Deficiencies

C The co-permittees do not generally track or evaluate the effectiveness of illicit discharge and detection programs.

For example, Republic Silver State Services has an exclusive franchise agreement to manage a valley-wide household hazardous waste disposal program, but it does not report the quantity of materials collected by type of material or its efforts to notify the public of hazardous waste drop-off sites and collection days. This data should be collected and used to evaluate the effectiveness of the program.

C CCRFCD has published two different phone numbers for the reporting of illegal dumping. CCRFCD published two brochures which indicate that illegal dumping should be reported to the Clark County Health District (702-383-1027). Information regarding reporting illegal dumping is also provided on the Storm Water Quality Management Committee web site (www.lvstormwater.com). The web site provides a link to an online reporting system and provides a phone number, which differs from the phone number published in the brochures. CCRFCD should ensure that the phone numbers provided for reporting of illegal dumping are accurate.

- *Although co-permittees' semi-annual Wash Walks proactively detect illicit discharges, information collected could be improved.*

Co-permittees use an innovative strategy to identify problem areas and illicit discharges by walking alongside the entire wash semi-annually. Visual observations of problems are addressed. The information collected during Wash Walks could be improved by using field tests to identify potential pollutant sources in addition to visual observations of water quality. Field tests may identify illicit connections not visually identifiable. The *Illicit Discharge Detection and Elimination Guidance Manual for Program Development and Technical Assessment* by the Center for Watershed Protection is a good resource. This document is available at <http://www.cwp.org/>.

2.5 Industrial Facility Monitoring and Control (Permit Section 4.8)

Background: Each co-permittee conducts its own industrial facility monitoring and control program, as discussed in each co-permittee section below.

Potential Permit Violation

- *The co-permittees have not identified the industrial facilities that are contributing a substantial loading to the MS4 and have not developed an industrial facility monitoring and control program for those industrial facilities. (Permit Section 4.8.1)*

The Annual Report indicates that co-permittees are meeting the minimum requirement of the permit to inspect the hazardous waste treatment, disposal and recovery facilities and SARA Title III Section 313 industries specifically identified in the permit. However, there is no indication that 313 industries have any relation to storm water, and in fact several Section 313 facilities inspected during the audit were located entirely indoors. According to the 2003-2004 Annual Report, the co-permittees considered that gas stations and hotel/casinos might contribute a substantial pollutant loading to the MS4, but nonetheless determined that these facilities should not be inspected. The co-permittees should conduct, and the SWMP should be revised to reflect, an analysis and inspection program of industrial facilities that contribute a substantial load to the MS4.

Program Deficiencies

- *The program does not track or acknowledge many of the inspection activities being conducted to control pollutants at industrial facilities.*

During the audit, it became apparent that many co-permittees (and other agencies) have an extensive industrial facility monitoring program. For example, several co-permittees are conducting industrial storm water inspections at industrial and commercial facilities that are not Section 313 facilities; however, these inspections are not incorporated into a comprehensive storm water monitoring program. In addition, the County Health Department (not a co-permittee) is conducting inspections at restaurant facilities, all of which include an inspection of outside activities that could contribute pollutants to the MS4. CCRFCD should track and coordinate these activities to reflect a comprehensive program.

- C *The co-permittees and NDEP do not coordinate activities to control discharges from industrial facilities.*

The co-permittees' inspectors do not verify if the facilities are subject to nor have submitted a Notice Of Intent (NOI) or developed a Storm Water Pollution Prevention Plan (SWPPP) in compliance with NDEP General Permit NVR050000 for Storm Water Associated with Industrial Activity (NDEP Industrial General Permit). While the co-permittees are not directly responsible for implementing the State's program, the inspectors should be familiar with the State regulations. This would promote consistency in evaluations by storm water inspectors, which would benefit the industrial permittees, as well as improve the efficiency of the storm water program. Further, inspectors should be reviewing SWPPPs, which are required to contain information that would assist with the inspectors' evaluations of the site. The co-permittees should transmit information relating to facility SWPPPs to NDEP.

2.6 Construction Site BMP Program (Permit Section 4.9)

Background: CCRFCD contracts with the Clark County Department of Air Quality and Environmental Management (CCDAQEM) to conduct construction site storm water inspections concurrent with air quality inspections in Clark County, Las Vegas, and North Las Vegas. The City of Henderson conducts its own construction site inspections.

Potential Permit Violations

- *The co-permittees do not appear to have the authority to require structural and nonstructural BMPs for erosion and sediment control at construction sites. (Permit Section 4.9.1.2)*
- *Timely and appropriate response to storm water problems at construction sites is not occurring. (Permit Section 4.9.1.3)*

Clark County, Las Vegas, North Las Vegas and Henderson have not adopted ordinances to require that BMPs be implemented to reduce pollutants in storm water from construction sites.

Under the current construction inspection program for Clark County, Las Vegas, and North Las Vegas, CCRFCD only requires CCDAQEM to report only actual discharges of sediment, chemicals, and other pollutants. The CCDAQEM inspectors do not have enforcement authority for storm water, and CCRFCD only requires referral to the co-permittees of sites with violations to only the most egregious violations of actual discharges. Thus, Clark County, Las Vegas, and North Las Vegas are only provided the information to enforce against construction sites with actual discharges which, due at least in part to slow communications, they have not yet done. In accordance with Section 4.9.1.3 of the Permit, these co-permittees must enforce “control measures.”

CCRFCD, Clark County, Las Vegas, and North Las Vegas should require the CCDAQEM inspectors to communicate directly with the appropriate contact from Clark County, Las Vegas, and North Las Vegas. Currently the information is sent only to CCRFCD. When the construction site is located near a jurisdictional boundary, the inspectors could submit evidence of violations to the contacts for both jurisdictional areas in question and to CCRFCD. All inspection forms that identify that perimeter BMPs are not observed or that the site has the potential to impact the public right-of-way should be forwarded immediately so that appropriate enforcement response can occur.

CCRFCD should instruct its consultants (MWH) to walk through the construction sites during post-storm inspections (as opposed to the current practice of only observing project perimeters) and note the condition of storm water controls. Moreover, the co-permittees should then take appropriate enforcement actions as a result of these post-storm inspections.

See related discussion in Sections 3.6, 4.6, 5.6, and 6.6 for Clark County, Las Vegas, North Las Vegas, and Henderson, respectively.

Program Deficiency

C The co-permittees and the State do not coordinate activities to control discharges from construction sites.

The co-permittees' inspectors do not verify if the projects have submitted an NOI or have developed a SWPPP in compliance with the NDEP General Permit NVR100000 for Stormwater Associated with Construction Activity (NDEP Construction General Permit). While the co-permittees are not directly responsible for implementing the State's program, the inspectors should be familiar with the State regulations. This would promote consistency in evaluations by storm water inspectors, which would benefit the regulated community, as well as improve the efficiency of the storm water program. Further, inspectors should be reviewing SWPPPs, which are required to contain information that would assist with the inspectors' evaluation of the site. The co-permittees should transmit information relating to facility SWPPPs to NDEP.

3 CLARK COUNTY FINDINGS

Detailed information related to the Clark County findings (described in this section) is found in Appendix B.1 - Clark County Documentation of Findings.

3.1 Adequate Legal Authority (Permit Section 4.2)

Background: The Clark County Storm Water System Discharge Code Title 24.40 prohibits the discharge of wastewater, pollutants, and solid or viscous material to the storm water system.

Positive Attribute

- *The Clark County legal authority provides good description and control of pollutants and/or materials discharged either intentionally or unintentionally to the storm water system.*

Potential Permit Violation

- *Clark County has not required compliance with conditions in ordinances, permits, contracts or orders. (Permit Section 4.2.1.3) Appropriate storm water enforcement has not occurred due to a cumbersome and lengthy process of handling construction site violations and a possible lack of adequate Code Enforcement staff.*

As noted above, construction site inspections are conducted by CCDAQEM. CCDAQEM staff make a limited attempt to contact and inform the site representative of the enforcement concern. If the site is discharging sediment, construction chemicals, or other pollutants, the inspection checklist report is forwarded to CCRFCD immediately. A single CCRFCD staff reviews all of

the reports and determines which will be returned to Clark County for enforcement. The criteria used to determine which reports will be escalated to enforcement is uncertain. Since one person is tasked with all reviews, the reports are not reviewed and forwarded to Clark County when that staff is away from the office (e.g., on vacation, at meetings). Upon receipt of a report from CCRFCD, Clark County then provides the report to Code Enforcement for follow up and any enforcement action. The lag time between the CCDAQEM inspection and subsequent site visit by Code Enforcement to verify a storm water violation typically means that the discharge is not occurring when Code Enforcement arrives on site, and thus formal enforcement does not occur. Currently, all violations identified by Code Enforcement have been resolved through violation documentation, meeting with the site representative, verbal directive, and a follow-up Notice of Violation that requires correction within 15 days. Due to inadequate record keeping, Code Enforcement did not know if the construction site enforcement actions were related to storm water or dust control. Construction site inspection reports with other storm water concerns are collected by the County, but not reviewed, and then forwarded to CCRFCD quarterly.

Code Enforcement has six staff who are responsible for enforcement of County Code (e.g., residential building code, swimming pools, illegal dumping, zoning) for all County departments. Code Enforcement may not have sufficient staff to adequately and aggressively enforce storm water violations. Clark County should evaluate the need for either additional or dedicated storm water Code Enforcement staff to ensure all storm water industrial and construction site violations are adequately addressed through local enforcement, as appropriate. In addition, Code Enforcement site activities should ensure that BMPs identified in the SWPPP are being implemented to retain soil and/or chemicals on the site as committed to in the SWPPP.

The County's legal authority to require structural and nonstructural BMPs at construction sites and to inspect construction sites is discussed in Section 3.6.

3.2 Public Outreach and Education, and Intergovernmental Coordination (Permit Section 4.5)

Background: Clark County has developed and adequately conducts Public Outreach and Education, and Intergovernmental Coordination. See Appendix B.1 for additional information.

3.3 Best Management Practices (Permit Section 4.6)

Background: Clark County conducts various best management practices such as inspection of washes and detention basins, review and approval of drainage plans prior to site construction, street sweeping, and standard operating procedures (SOPs) for herbicide and fertilizer application.

Potential Permit Violations

- *Clark County has not implemented a plan to reduce the discharge of pollutants from MS4s which receive discharges from areas of new development and significant redevelopment. (Permit Section 4.6.1.2)*
- *Clark County has not implemented a program to evaluate and as necessary reduce pollutants in discharges from MS4s associated with the application of pesticides, herbicides, and fertilizers. (Permit Section 4.6.1.6)*

While in general Clark County does not have a plan to reduce discharges from new development and significant redevelopment, Clark County Development Services sets standards for public and private development and requires a drainage plan. Development Services reviews and must approve the drainage plan prior to site construction. Clark County's jurisdiction includes large regional detention basins that are owned by the public and theoretically, new developments can discharge into these basins. It appears that other departments that are not responsible for the integrity of regional detention basins allow developers to discharge to the basins without notifying the Clark County Maintenance Management personnel who hold responsibility for basin condition, inspection, and maintenance. In accordance with Permit Section 4.6.1.2, Clark County must implement a plan to reduce the discharge of pollutants from new development and significant redevelopment to the MS4. For additional information related to a plan and controls for new development and redevelopment, see Section 2.3.

Clark County applies pesticides, herbicides, and fertilizers (PHFs). The Clark County Public Works has four certified pesticide applicators. Clark County Public Works and Parks and Recreation Departments respectively apply herbicides to detention basins, channels, and public parks. Parks and Recreation has Standard Operating Procedures (SOPs) for herbicide and fertilizer application and equipment cleanup. The County does not appear to have a program to evaluate and reduce pollutants in discharges associated with pesticides, herbicides, and fertilizers. Clark County does not appear to have SOPs for washout and recycle of pesticide containers (see Appendix B.2). Clark County should develop a SOP for the washout and recycling of pesticide containers and develop and implement BMPs for use of herbicides in detention basins and channels.

Program Deficiencies

- *Clark County Parks and Recreation staff and many Public Works staff have not received formal storm water training.*

Clark County should implement formal storm water training for all Public Works and Parks and Recreation employees. The training should be mandatory for all new employees and be required periodically as a refresher training for all appropriate staff.

- *Clark County has not used the tools available to ensure implementation of appropriate Best Management Practices (BMPs) in a timely manner.*

Clark County Maintenance Management staff stated that the County has a reporting system to track the condition of a public detention basin's embankments, sediment load, maintenance, maintenance requirements, and water volume during peak storm flows. Although Clark County has this reporting system, it was not being used for the regional detention basin (i.e., Lower Duck Creek Detention Basin) inspected by the audit team (See Appendix B.3). Clark County should immediately repair erosion at the Lower Duck Creek Detention Basin and evaluate, identify, and implement means to reduce future erosion of the basin walls. In addition, the County should establish a protocol for notification of appropriate Clark County staff prior to any non-County personnel entering a detention basin fenced area.

- *Clark County has not evaluated the effectiveness of its street sweeping and catch basin and inlet cleaning programs.*

Clark County Public Works sweeps all streets at least monthly, but generally does not sweep public parking lots. Nationally, many MS4s track the volume of material collected from street sweeping and removed from catch basins and annually evaluate the effectiveness of the programs. Clark County tracks the number of catch basins and inlets cleaned and the number of street sweeper loads, but not the volumes of materials.

Clark County does not evaluate the effectiveness of the programs. Clark County should:

- track the volume of material collected from catch basins, inlets, and street sweeping and annually evaluate the effectiveness of the programs.
- evaluate the need and as necessary implement sweeping of public parking lots.
- develop and implement BMPs for street and road maintenance and repairs.

3.4 Illicit Discharge and Detection (Permit Section 4.7)

Background: Clark County implements Illicit Discharge and Detection program components such as: mapping (using GIS) of regional piping, drop inlets, and catch basins; inspection of detention basins and washes; resolution of illegal dumping; and spill response. Various aspects of the program are implemented by the CCRFCD, the Clark County Fire Department, and Clark County Water Reclamation District.

Potential Permit Violations

- *Clark County has not implemented a program that includes inspections to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the MS4. (Permit Section 4.7.1.1)*
- *Clark County has not implemented procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer. (Permit Section 4.7.1.4)*
- *Clark County has not conducted an assessment of whether the procedures otherwise implemented are sufficient to identify instances of exfiltration from the sanitary sewer to the storm sewers, and if not, additional activities to be undertaken to control exfiltration. (Permit Section 4.7.1.7)*

Clark County staff claimed that non-storm water discharges to the channels are “usually from swimming pools.” Clark County accepts such discharges as permitted non-storm water, but does not evaluate whether the swimming pool discharges have been dechlorinated before discharge.

Clark County Public Works responds to spills of less than 25 gallons, and the Fire Department responds to spills of 25 gallons or greater. Typically, the Fire Department does not inform the Public Works Department of the spills to which it responds. Thus, Clark County cannot respond to those spills to ensure the spill is contained and does not discharge to the MS4. Clark County should establish a protocol to ensure the Fire Department informs Public Works in a timely manner of every spill response.

Clark County Water Reclamation District (CCWRD) staff stated that the CCWRD is responsible for the Clark County sanitary sewer system and responds to and corrects sanitary sewer overflows (SSOs) and cross-connections. Clark County Public Works indicated a lack of knowledge of the sanitary sewer system and appears not to have conducted an assessment of the sufficiency of procedures to identify instances of exfiltration (SSOs, cross-connections) from the sanitary sewer to the storm sewer system. Clark County has not requested the SSO and cross-connection exfiltration information for inclusion in the Annual Report. Clark County Public Works should establish a relationship with CCWRD to facilitate the back and forth flow of necessary information.

Program Deficiencies

- *Clark County Public Works appeared to consider storm water to be a low priority as demonstrated by municipal facilities not addressing basic storm water issues.*

Storm water appeared to be considered a low priority at Clark County Public Works' facilities (i.e., basic storm water issues such as spillage and drippage of petroleum products to outside areas and storage of exposed, uncontained five-gallon pails of petroleum products were not addressed) (see Appendix B.2). Clark County should inspect and immediately remedy all storm water concerns identified in Appendix B.2. See additional discussion in Section 3.5.

- *The Clark County mapping of facilities does not include structure history and maintenance (e.g., date constructed, date and type of maintenance, number and cause of blockages).* Clark County should include the structure history and maintenance in its local mapping database.

- *Clark County Public Works staff appeared to lack general storm water knowledge. For example, a Clark County staff person stated that an incident involving a discharge of a herbicide to a wash was not a concern.*

- *Clark County Public Works appeared to lack internal coordination between various county departments. For example, staff from two County departments stated that they were the individuals to be notified of a spill at a Public Works location. Signage at the Public Works Fuel Point directs that spills be reported by calling 911, yet a third option.*

Clark County should ensure all appropriate staff receive necessary training to enhance storm water knowledge and develop SOPs for storm water-related activities such as spill response and ensure that all appropriate Clark County staff (e.g., those that engage in outdoor maintenance activities and/or spill response) are familiar with the SOPs.

At a minimum of twice annually, Clark County staff walk the channels and washes that have a history of discharges. Clark County staff used to maintain a list of every discharge point ("orifice") to the channels, but no longer keeps a list. Clark County should resume documentation of all orifices to the channels to allow better tracking of illicit discharges and discharge points.

Clark County staff attempt to resolve illegal dumping to the County streets with the person responsible for the dumping, but often do not have the ability to trace a discharge back to the source. If staff are unable to resolve the illegal dumping, the incident is referred to Clark County Code Enforcement. Clark County should pursue additional funding and move forward with local level mapping to allow better control and tracking of pollutants discharged to the MS4 and to provide inspectors the ability to determine discharge sources. Clark County should establish a proactive program for reduction of illicit discharges and illegal dumping. The program may include, as is common at other MS4s, distribution of door hangers and/or brochures in areas where illegal dumping has occurred, and informational documents to targeted industrial/commercial entities. EPA's web site has some useful compliance assistance materials. For instance, see the Storm Water Outreach Materials and Reference Documents at <http://cfpub.epa.gov/npdes/stormwatermonth.cfm>.

3.5 Industrial Facility Monitoring and Control (Permit Section 4.8)

Background: Clark County contracts CCWRD to implement the industrial facility program and relies on Code Enforcement for violation response.

Positive Attribute

- *Clark County uses CCWRD for the industrial inspection program. CCWRD staff conduct very thorough inspections (see Appendix B.4).*

Potential Permit Violation

- *Clark County has not implemented a program to monitor and control pollutants in storm water discharges to the MS4 from industrial facilities that are contributing a substantial pollutant loading to the MS4. (Permit Section 4.8)*

The Clark County Industrial Facility Monitoring and Control program is limited to twelve SARA Title III Section 313 facilities. While Clark County may have other industrial facilities (e.g., car washes, service stations) that contribute substantial pollutant loading to the MS4, those facilities have not been included in the Industrial Facility Monitoring and Control program. Clark County apparently has not conducted an assessment to determine the industrial facilities that may contribute a substantial pollutant loading to the MS4. As is common at many municipalities, Clark County may choose to include all pretreatment program industries in its MS4 industrial facility program until it is determined that each facility does not contribute a substantial pollutant loading to the MS4. Regarding the identification of industrial facilities that might contribute substantial pollutant loading to the MS4, see Section 2.5.

Program Deficiencies

- *Clark County does not determine whether the inspected industry has applied for and/or received the required NPDES Industrial General Permit during inspections. Thus, follow-up notification to NDEP of non-permitted industries and/or directing non-permitted industries to contact NDEP to secure the required permit does not occur.*

CCDAQEM inspectors do not verify if the facilities are subject to nor have submitted an NOI or developed a SWPPP in compliance with the NDEP Industrial General Permit. The inspectors should revise the industrial facility checklist to include a question of NPDES permit coverage.

- *Clark County does not include appropriate municipal operations in the industrial program. The Clark County Public Works Fleet Management, Traffic, Vector Control, and Automotive facilities are not included in the industrial program. Clark County has not developed or implemented storm water management plans for the facilities and does not inspect the sites for*

storm water. The audit team observed several Clark County municipal operation sites. Most sites had significant storm water issues (e.g., petroleum-stained pavement, exposed containers of petroleum and other products, exposed larvicide, exposed automotive batteries, and fuel spillage) (see Appendix B.2). Clark County should:

- include all municipal operations (e.g., Fleet, Automotive Repair, Vector Control, Traffic) that have potential to contribute substantial pollutant loading to the MS4 in its industrial facility program.
- submit NOIs for each of those facilities that are subject to the NDEP General Industrial Permit.
- develop SWPPPs for all municipal operations included in the County industrial program.
- appoint a storm water representative or responsible person at each municipal operation included in the industrial facility program. That person should implement the SWPPP, conduct periodic storm water inspections of the site, and provide liaison with county-wide storm water management.
- inspect and immediately remedy all storm water concerns identified in Appendix B.2.

3.6 Construction Site BMP Program (Permit Section 4.9)

Background: Clark County uses CCDAQEM staff to conduct construction site storm water inspections under the authority of the dust permit. Clark County uses the County Code Enforcement staff for follow up on site noncompliance and subsequent enforcement activities.

Positive Attribute

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| <ul style="list-style-type: none">• <i>The CCDAQEM inspector exhibited a desire to conduct a viable construction site storm water inspection and ensure control of runoff from the site.</i> |
|--|

Potential Permit Violations

- *Clark County has not adopted an ordinance that would provide the authority to require structural and nonstructural BMPs for erosion and sediment control at construction sites (Permit Section 4.9.1.2)*
- *Clark County's inspectors (CCDAQEM) do not have specific authority to enter and inspect construction sites for storm water and to enforce storm water regulations. (Permit Sections 4.2.1.4 and 4.9.1.3)*
- *Clark County has not enforced control measures to reduce pollutants in storm water runoff from construction sites to the MS4. (Permit Section 4.9.1.3)*
- *Clark County has not conducted semi-annual inspections of washes and open channels for the purpose of identifying locations of heavy sediment loads that may be associated with construction site runoff. (SWMP Section 9.4.c)*

Clark County uses CCDAQEM inspectors to conduct storm water inspections under the Clark County Air Quality Dust Control Permit. Clark County has not adopted an erosion control or grading ordinance nor does it otherwise require storm water control measures (i.e., BMPs) and is thus limited to only enforcing for actual discharges from the construction sites and for dust control BMP noncompliance. The CCDAQEM inspectors do not have the authority to enforce storm water regulations, unless they overlap with the requirements of the dust permit (e.g., trackout control requirements). In accordance with Section 4.9.1.2 of the Permit, Clark County must establish an ordinance requiring control measures rather than enforcing against only actual discharges. In accordance with Sections 4.2.1.4 and 4.9.1.3 of the Permit, Clark County must also establish legal authority for the inspection of construction sites with regard to storm water requirements.

Clark County staff inspect the washes and open channels, but appear to primarily look for discharges entering via outfalls. It was unclear if sediment loads due to overland construction site runoff, whether from private or public construction sites, were of concern to Clark County. In accordance with SWMP Section 9.4.c, Clark County must conduct semi-annual inspections of washes and open channels for the purpose of identifying locations of heavy sediment loads that may be associated with construction site runoff.

Program Deficiencies

- *Clark County does not handle storm water discharge noncompliance reports in an effective and expeditious manner and does not proactively take actions to ensure timely correction of storm water noncompliance.*
- *Clark County does not adequately regulate its own construction sites.*

Clark County's process of addressing construction site storm water noncompliance issues is particularly inefficient. When a discharge is observed, the CCDAQEM inspectors report their findings to CCRFCD, who review the findings and then direct the findings back to the Clark County Planning Manager. The Clark County Planning Manager then provides the findings to Clark County Code Enforcement for follow up. CCDAQEM simply files the reports that only contain potential to discharge or other non-discharge issues. The reports are forwarded to CCRFCD quarterly, but not reviewed. When a potential problem is observed, CCDAQEM makes a limited effort to contact the site supervisor to discuss the issue. The CCDAQEM inspectors determine if a follow-up inspection will be conducted to verify correction of a compliance issue. Clark County should:

- direct CCDAQEM to simultaneously provide their findings to CCRFCD, the Clark County Planning Manager, and Clark County Code Enforcement. This should improve the response time for follow up on construction site noncompliance by several days.
- ensure the site supervisor is notified of all noncompliance with the regulations to include failure to implement and maintain all storm water BMPs. Many MS4s send informal letters to the site supervisors. The letters inform site supervisors who were unavailable during the inspection of the problems found on site and document a history of noncompliance if enforcement becomes necessary in the future.
- develop a SOP to ensure all CCDAQEM inspectors conduct a follow-up inspection of sites with more than minor violations.

Clark County Department of Real Property Management conducts contract management for all county departments and is responsible for all public-owned property that is not in a street right-of-way. Real Property Management has construction inspectors to ensure public sites meet erosion and grading plan requirements and comply with NPDES Permit and SWPPP requirements. This was inconsistent with other information provided to the audit team by Clark County that the County does not have requirements for erosion and sediment control at construction sites.

The audit team inspected a public construction site and noted numerous NPDES Permit noncompliance issues (see Appendix B.5). In addition, it appeared that the public construction site did not have NPDES permit coverage. Clark County should ensure that its public construction sites have NPDES permit coverage as appropriate.

- *The CCDAQEM inspectors do not verify whether the construction site has a NPDES permit. CCDAQEM requires a dust permit and Dust Mitigation Plan before building permit approval. The Dust Mitigation Plan must at a minimum include BMP 10 (disturbed soil) and BMP 20 (trackout control). While accessing a construction site to conduct an air quality inspection under the dust permit, CCDAQEM inspectors also conduct storm water BMP inspections based on the Construction Site SWPPP Inspection form. The form does not include questions related to whether the construction site has a NPDES permit. When conducting storm water inspections in Clark County (as well as in Las Vegas and North Las Vegas), CCDAQEM inspectors should:*
 - verify whether a NPDES Permit has been obtained.
 - ensure that construction sites not only specify construction storm water BMPs in the dust control permit, but that those BMPs are implemented during the construction project duration.

In addition, the County’s ordinance specifies that there shall be no discharge without authorization under a permit, and that the discharger must be in compliance with such permit. (See Section 3.1 in Appendix B.1.) The County should be evaluating construction sites for compliance with the NDEP Construction General Permit.

- *Clark County neither provides formal training for construction site operators, nor directs them to periodic training held by NDEP.*

Clark County has distributed a presentation titled “Storm Water Quality Management in Las Vegas Valley.” Clark County should develop and implement training for construction operators or direct construction operators to NDEP training.

4 CITY OF LAS VEGAS FINDINGS

Detailed information related to the City of Las Vegas findings (described in this section) is found in Appendix C.1 - City of Las Vegas Documentation of Findings.

4.1 Adequate Legal Authority (Permit Section 4.2)

Background: Chapter 14.17 (Wastewater Collection and Treatment) of the Las Vegas Municipal Code contains the legal authority for the Las Vegas storm water program.

Potential Permit Violation

C *The Las Vegas Municipal Code does not appear to contain the legal authority to require compliance, monitor, inspect, or take enforcement action against an illicit discharge by a person or entity that does not meet the definition of an industrial user. (Permit Sections 4.2.1.1 and 4.2.1.3.*

Chapter 14.17 related to prohibition of illicit discharges is Las Vegas’ pretreatment ordinance, therefore many provisions specifically refer to “industrial users” as defined in the ordinance.

This would exclude many facilities, such as construction sites, that have the potential to discharge storm water but are not industrial users. It should be noted that the city may use its nuisance code or fire code to clean up sites that are not directly discharging to the storm drain system, although this may not provide clear storm water legal authority necessary for the program. In accordance with Section 4.2.1.1 of the Permit, Las Vegas must revise its ordinance to clarify that it has the legal authority to require compliance, monitor, inspect, and take enforcement action against any person, in addition to industrial users. In accordance with Section 4.2.1.3 of the Permit, Las Vegas must require compliance with (i.e., enforce) conditions in the above ordinances.

The City's legal authority to require structural and nonstructural BMPs at construction sites and to inspect construction sites is discussed in Section 4.6.

4.2 Public Outreach and Education, and Intergovernmental Coordination (Permit Section 4.5)

Background: Las Vegas primarily relies on CCRFCD's public outreach and education program. See Appendix C.1 for additional information.

Positive Attribute

C *Las Vegas has good interagency coordination that benefits program implementation.* Staff and management from numerous city departments were generally aware of storm water issues and were observed to coordinate responses quickly to issues and violations observed during the audit.

4.3 Best Management Practices (Permit Section 4.6)

Background: Las Vegas' best management practices include street sweeping, inspection and maintenance of washes and detention basins, and SOPs for herbicide and fertilizer application.

Positive Attribute

- *Las Vegas has developed an excellent spreadsheet for basin maintenance that may serve as a model to other co-permittees.*

Potential Permit Violation

C *Las Vegas has not developed a plan nor developed requirements to reduce the discharge of pollutants from areas of new development and significant redevelopment. (Permit Section 4.6.1.2)*

Las Vegas staff indicated that runoff from most areas of new development and significant redevelopment will be captured by the existing or proposed detention basins. For further information, see Section 2.3.

Program Deficiencies

- *Las Vegas does not evaluate the effectiveness of its street sweeping and catch basin programs.*

Las Vegas sweeps all public streets twice monthly. Nationally, many MS4s track the volume of material collected from street sweeping and removed from catch basins and annually evaluate the effectiveness of the programs. Las Vegas should track and report the amount of material collected from street sweeping and catch basin cleaning and evaluate their effectiveness.

- *Las Vegas does not have a data management system for its storm drain structures.* Storm drain structures are cleaned based on historical problems and as needed, based on complaints. Las Vegas should consider developing and implementing a comprehensive electronic scheduling and maintenance management system for its storm drain structures. A data management system could potentially reduce pollutants entering the MS4 through better identification, scheduling, and tracking of problem areas.

- *Trash containers are located within detention basins that are used for additional purposes (e.g., playing fields).*

Trash containers should be located outside of areas where storm water would flow through the detention basin.

4.4 Illicit Discharge and Detection (Permit Section 4.7)

Background: Las Vegas implements Illicit Discharge and Detection program components such as: mapping (using GIS) of regional piping, drop inlets, and catch basins; inspection of detention basins and washes; resolution of illegal dumping; and spill response.

Positive Attribute

C	<i>Las Vegas was observed to respond appropriately when an illicit discharge was observed.</i>
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The primary method of detecting illicit discharges to the visible areas of the storm drain system is through the twice annual Wash Walks, which are documented in the 2003-2004 Annual Report. The audit team observed Las Vegas inspectors on a simulated Wash Walk (documented in Appendix C.3). In conducting the Wash Walks, the inspector looks for dry weather flow, heavy sediment loads, and any significant obstructions in the wash. When the Wash Walk crew finds a potential illicit discharge, they notify appropriate Las Vegas or other agency staff who

can investigate the situation. Based on an initial evaluation, the Wash Walk crew refers flows thought to be from construction sites to NDEP and flows from permitted industrial users to Las Vegas' Industrial Waste Section.

During the simulated Wash Walk, an illicit discharge was observed taking place. The City inspectors documented the event, coordinated with appropriate agencies, and assessed a fine in a timely manner.

Program Deficiencies

C A Hazmat team responding to a spill may flush the material to a storm drain if it determines there might be danger from fumes.

According to Section 1.3.1.1 of the Permit, discharges of non-storm water are not permitted discharges. Except when health and safety is of serious concern, and there is no other reasonable option, spill responders should vacuum or absorb spilled materials rather than flushing them to the storm drain. Dangerous fumes can be conveyed to other areas via the storm sewer system.

- *The City should track 911 calls that involve events that could impact the MS4.*

4.5 Industrial Facility Monitoring and Control (Permit Section 4.8)

Background: Pretreatment inspectors implement the Las Vegas industrial facility monitoring and control program.

Positive Attributes

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| <ul style="list-style-type: none">• <i>City pretreatment inspectors inspect and report on City-owned sites the same as all other industrial permitted sites [including the Publicly Owned Treatment Works (POTW)].</i> |
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A City pretreatment inspector was observed to conduct inspections of city-owned facilities required to have pretreatment permits. The inspection was done exactly the same as industrial facilities. Because the POTW has a laboratory facility, it is also required to have a pretreatment permit. Storm water inspections are conducted at the POTW as part of the pretreatment program.

- *Experienced pretreatment inspectors include storm water evaluations in their pretreatment inspections for a comprehensive list of industrial facilities.*

Las Vegas conducts inspections of nine Significant Industrial Users (SIUs), also known as Class I facilities two times per year, and about one thousand Class II facilities (e.g., photo processors, dry cleaners, and dentists) a minimum of once every five years. The audit team observed inspections at Anderson Dairy, a site (operating as a bottler, not a Concentrated Animal Feeding Operation) found to have several storm water violations. The City inspector documented these

issues on a standard storm water form. The City assessed a fine in a timely manner and also sent a letter to the owner of the dumpster that was leaking at the Anderson Dairy site.

Potential Permit Violation

- *Las Vegas must provide a summary of storm water inspections performed for inclusion in the Annual Report. (Permit Section 5.3.4)*

In accordance with Section 5.3.4 of the Permit, Las Vegas must summarize and provide a summary of the industrial inspections performed for inclusion in the Annual Report.

Program Deficiencies

- *Las Vegas does not determine whether the inspected industry has applied for and/or received the required NPDES industrial storm water permit during inspections. Thus, follow-up notification to NDEP of non-permitted industries and/or directing non-permitted industries to contact NDEP to secure the required permit does not occur.*

Las Vegas does not coordinate with the State to determine which industrial facilities have a NDEP Industrial General Permit. Las Vegas should obtain lists of facilities that have NDEP Industrial Storm Water General Permits and compare these against the facilities within their service area to determine whether all facilities required to have such permits actually do have them.

- C The City Maintenance East yard had not filed a NOI and did not have a SWPPP on site as required by the NDEP Industrial Storm Water General Permit.*

Las Vegas should file NOIs and develop SWPPPs for all City-owned facilities that are subject to the requirements of the NDEP Industrial General Permit.

- C Minor City yard violations were observed, but were corrected promptly.*

A mobile car washer in the East Maintenance Yard was directed by City staff to only wash vehicles over a drain that flows to a sand/oil interceptor. Filter fabric over the only storm drain from the facility should be checked more often than twice annually. Waste fungicides and other materials were left improperly outside a storage area. The responsible department removed these at the request of City staff.

4.6 Construction Site BMP Program (Permit Section 4.9)

Background: CCDAQEM conducts construction site storm water inspections concurrent with air quality inspections in Las Vegas. The City reviews Drainage Plans to determine whether erosion control is required.

Potential Permit Violations

- *Las Vegas does not have an ordinance that would provide the authority to require structural and nonstructural BMPs for erosion and sediment control at construction sites. (Permit Section 4.9.1.2)*
- *Las Vegas does not have the legal authority to conduct inspections of construction sites. (Permit Sections 4.2.1.4 and 4.9.1.3)*

Las Vegas has not developed, adopted, and implemented an ordinance to allow appropriate regulation and control of erosion from construction sites. The City of Las Vegas has relied on the existing Clark County Dust Control permit as a means to regulate storm water from construction sites. City staff indicated that runoff from construction sites were causing problems, noting that a significant effort is dedicated to cleaning out inlets and streets clogged with sediment, amounting to \$80,000 in overtime costs last year. In accordance with Section 4.9.1.2 of the Permit, Las Vegas must develop and implement a program to require structural and non-structural BMPs on construction sites. In accordance with Section 4.9.1.3 of the Permit, Las Vegas must have the authority to inspect sites and enforce control measures.

Program Deficiency

- C *Inefficiencies in the transfer of information regarding problems found by CCDAQEM inspectors to co-permittees were previously discussed in Section 3.6.*

5 CITY OF NORTH LAS VEGAS FINDINGS

Detailed information related to the City of North Las Vegas findings (described in this section) is found in Appendix D.1 - City of North Las Vegas Documentation of Findings.

5.1 Adequate Legal Authority (Permit Section 4.2)

Background: The North Las Vegas Municipal Code Section 13.28 prohibits the discharge of waste water in any form, other than storm water, into the storm drains of the City.

Positive Attribute

- *The North Las Vegas legal authority provides a good description and control of pollutants and/or materials discharged intentionally or unintentionally to the storm water system. The restrictions on uncontaminated discharges appear to go beyond the requirements of the Permit.*

The ordinance prohibits discharges that do not result from “precipitation, irrigation with drinking water, or clean groundwater.” Thus discharges such as water line flushing, while allowed by the Permit, are prohibited by the ordinance.

Potential Permit Violation

- *North Las Vegas has not provided Utilities Department staff with the authority to enforce the requirements of Chapter 13.28 of the Municipal Code. (Permit Sections 4.2.1.3 and 4.2.1.4)*

Chapter 13.28 authorizes the director to delegate inspection and enforcement authority to any member of the Department of Public Works. Because of a reorganization that became effective on July 1, 2005, the Pretreatment Superintendent and Pretreatment Inspector are now in the Utilities Department. Thus, they no longer have authority to enforce the requirements of Chapter 13.28. The City intends to revise the Municipal Code to reflect this change. In accordance with Sections 4.2.1.3 and 4.2.1.4 of the Permit, North Las Vegas must revise the Municipal Code to provide inspection and enforcement authority to designated Utilities Department staff to require compliance with (i.e., enforce) the provisions of Municipal Code Chapter 13.28. The City’s legal authority to require structural and nonstructural BMPs at construction sites and to inspect construction sites is discussed in Section 5.6.

Program Deficiencies

- *North Las Vegas does not have an ordinance that requires the timely pickup, and proper disposal, of pet wastes.*

The City does not require pick-up and disposal of animal wastes. A City representative offered the opinion that the North Las Vegas prohibition on littering might be used for this purpose, but did not know if this was being done. North Las Vegas should adopt an ordinance to require proper handling and disposal of animal wastes.

5.2 Public Outreach and Education, and Intergovernmental Coordination (Permit Section 4.5)

Background: North Las Vegas primarily relies on CCRFCD’s public outreach and education program.

Positive Attribute

- *North Las Vegas has an active and innovative public outreach and education program.*

The City completed a project to place medallions on all storm sewer inlets. The medallions identify that the inlet goes to Lake Mead. The City also worked with a local supermarket chain to reduce the discharge of cooking oil after the Thanksgiving Day holiday.

5.3 Best Management Practices (Permit Section 4.6)

Background: North Las Vegas implements various best management practices such as a street sweeping program for streets, a catch basin cleaning program, and SOPs for herbicide and fertilizer application.

Positive Attributes

- *North Las Vegas is adding staff and equipment to enhance its street sweeping program.*
- *The PHF procedures implemented by the Parks Department have resulted in a reported reduction in the amount of PHF materials used.*

North Las Vegas has a street sweeping program for streets, municipal parking areas, and parks. The goal is to sweep all streets every two weeks, but the goal is currently not being met. Two new dry sweepers arrived during the week the audit was conducted. Four additional dry sweepers are on order, and the City is currently hiring six new sweeper operators to operate the new equipment. North Las Vegas tracks, lane miles, curb miles, and water used in street sweeping.

The North Las Vegas Parks Department has written procedures that cover the use of PHFs. Procedures require that all broadcast materials that fall on paved areas must be blown back onto the grass. The Parks Department tracks the chemical used, area applied, temperature, and wind speed and direction. Only a minimal amount of herbicides is used on North Las Vegas street right-of-way. Vegetation control is normally accomplished through lack of irrigation, rather than herbicide use.

Potential Permit Violation

- *North Las Vegas has not implemented a plan to reduce the discharge of pollutants from MS4s which receive discharges from areas of new development and significant redevelopment. (Permit Section 4.6.1.2)*

North Las Vegas staff indicated that runoff from most areas of new development and significant redevelopment will be captured by the existing or proposed detention basins. For further information, see Section 2.3.

Program Deficiency

- *North Las Vegas should identify priority streets for street sweeping and post parking limitations to ensure that these streets are swept at least every two weeks. If voluntary compliance with the street posting is insufficient, North Las Vegas should enact an ordinance which provides the authority to issue parking violations to vehicles that prevent effective street sweeping.*

5.4 Illicit Discharge and Detection (Permit Section 4.7)

Background: Illicit discharge detection is done by North Las Vegas through Wash Walks, staff observations, and citizen complaints.

Positive Attribute

- *North Las Vegas responds quickly and effectively to citizen complaints of illicit discharges.*

North Las Vegas industrial inspectors will respond to any illicit discharge activity in the normal course of their daily work activities. Illicit discharge reports may also come from North Las Vegas Police, Fire, and other Utility Department staff.

Illicit discharge complaints from citizens are referred to the North Las Vegas Utilities Department, the Fire Department, or the North Las Vegas Municipal Code Enforcement group. These entities may respond individually or collectively. The audit team accompanied the Utilities Department on the response to a citizen complaint that was received during the audit. Observations of the response to this incident can be found in Appendix D.6.

Potential Permit Violation

- *North Las Vegas must consider sediment being discharged to a wash to be an illicit discharge, conduct an investigation of the source, and take appropriate actions to reduce or eliminate the discharge. (Permit Section 4.7.1.3)*

Wash Walks are performed two times per year by the Department of Public Works. The audit team observed a North Las Vegas inspector on a simulated Wash Walk as part of the audit (documented in Appendix D.3). In conducting the Wash Walks, the inspector looks for unexpected flow and any significant obstructions in the wash. As part of the wash inspection, the inspector looks for materials in the wash right-of-way that may be a source of contamination. As noted in the inspection observations, the inspector indicated he does not note evidence of sediment entering the wash, either through erosion of soil adjacent to the wash or present in

channels entering the wash. He indicated sediment in the wash would only be noted if it was present in sufficient quantity to create an obstruction in the wash.

Program Deficiency

- *North Las Vegas has not consolidated the illicit discharge response reports from the three City Departments that may respond.*

The North Las Vegas Utilities Department conducts illicit discharge investigations and keeps excellent records when it has the lead role. The Fire Department and Municipal Code Enforcement do the same. The reports are not consolidated into a City-wide record, and the investigations are not reported to CCRFCD. The City should prepare a consolidated list and send a summary to the CCRFCD for inclusion in Annual Reports.

5.5 Industrial Facility Monitoring and Control (Permit Section 4.8)

Background: Pretreatment inspectors from the Utilities Department implement North Las Vegas' industrial facility monitoring and control program.

Positive Attribute

- *North Las Vegas has developed an effective storm water inspection program by incorporating storm water inspection elements into its existing permitted facility inspection program.*

North Las Vegas issues permits to all non-residential facilities that discharge wastewater to the North Las Vegas wastewater collection system. As of the date of the audit, North Las Vegas had issued 23 Class I permits, 335 Class II permits, and 152 FOG permits. North Las Vegas considers that each permitted facility has the potential to contribute a substantial pollutant loading the MS4. The City has incorporated observations of storm water issues into the inspection procedure for all permitted facilities listed above. For example, when FOG facilities are inspected, exterior waste oil containers are inspected to determine if spillage is occurring which could be conveyed to the MS4.

The audit team observed pretreatment inspectors conduct industrial storm water inspections of one municipal facility, Municipal Yard, and two industrial facilities, Las Vegas Cogeneration and McCandless International. Detailed observations associated with the inspections are presented in Appendix D.2 and D.4, respectively.

Potential Permit Violation

- *North Las Vegas must forward to the CCRFCD a summary of storm water inspections performed for inclusion in the Annual Report. (Permit Section 5.3.4)*

In accordance with Section 5.3.4 of the Permit, North Las Vegas must summarize and send a summary of the industrial inspections performed to CCFRCD for inclusion in the Annual Report.

5.6 Construction Site BMP Program (Permit Section 4.9)

Background: North Las Vegas contracts with Clark County to have CCDAQEM staff conduct construction site storm water inspections concurrent with inspections to enforce County dust permits. The audit team observed a CCDAQEM inspector conduct two construction site inspections. The observations from these inspections are included in Appendix D.5.

Potential Permit Violations

- *North Las Vegas does not have an ordinance that would provide the authority to require structural and nonstructural BMPs for erosion and sediment control at construction sites. (Permit Section 4.9.1.1)*
- *Clark County's inspectors (CCDAQEM) do not have specific authority to enter and inspect construction sites for storm water and to enforce storm water regulations. (Permit Sections 4.2.1.4 and 4.9.1.3)*
- *North Las Vegas has not enforced control measures to reduce pollutants in storm water runoff from construction sites to the MS4. (Permit Section 4.9.1.3)*

North Las Vegas has not adopted an erosion control or grading ordinance nor does it otherwise require storm water control measures (i.e., BMPs) and is thus limited to only enforcing for actual discharges from the construction sites and for dust control BMP noncompliance. The CCDAQEM inspectors do not have the authority to enforce storm water regulations, unless they overlap with the requirements of the dust permit (e.g., trackout control requirements). In accordance with Section 4.9.1.1 of the Permit, North Las Vegas must establish an ordinance requiring control measures rather than enforcing against only actual discharges. In accordance with Permit Sections 4.2.1.4 and 4.9.1.3, North Las Vegas must also establish legal authority for the inspection of construction sites with regard to storm water requirements.

Program Deficiencies

C The transfer of information regarding problems found by CCDAQEM inspectors to North Las Vegas is an inefficient and cumbersome process.

Inefficiencies in the transfer of information regarding problems found by CCDAQEM inspectors to co-permittees were previously discussed in Section 3.6. Additional inefficiencies may occur at North Las Vegas once the reports have been received. Upon receipt of the report, the North Las Vegas contact person inspects the site to determine if a Code violation is occurring. This person does not have authority to enforce the Municipal Code. If she determines the problem has not already been corrected, she refers the site to an inspector who has enforcement authority.

Thus, three separate individuals need to conduct a site inspection before an enforcement action can be taken. North Las Vegas should either designate the contact person with enforcement authority, or change the protocol so that inspection reports are sent directly to an individual who has enforcement authority, with a copy to the contact person for tracking purposes.

At the time of the audit, North Las Vegas indicated that CCDAQEM inspectors had reported storm water noncompliance issues at four construction sites in North Las Vegas since July 1, 2005. One of these was resolved by the CCDAQEM inspector through enforcement of the Clark County dust control ordinance. The North Las Vegas contact person visited the other three sites and found the problems corrected when she conducted her inspection.

- *North Las Vegas should require that the SWPPP prepared for any Capital Improvement Program (CIP) project be submitted to the City and conduct inspections to ensure compliance with the SWPPP as part of its normal CIP project oversight.*

6 CITY OF HENDERSON FINDINGS

Detailed information related to the City of Henderson findings (described in this section) is found in Appendix E.1 - City of Henderson Documentation of Findings.

6.1 Adequate Legal Authority (Permit Section 4.2)

Background: Henderson's legal authority is found in Municipal Code Sections 13.16.020A (prohibits the discharge of specified wastes), 13.16.020.B (prohibits discharges which cause a violation of the NPDES storm water permit), and 5.16.050 (prohibits the actual discharge of items such as dirt, rubbish, garbage, dead animals).

Program Deficiency

- *Several piles of pet waste were observed during the channel inspection of Upper Pittman Wash, including Project Green.*

Henderson Municipal Code requires owners to promptly remove animal waste from public property and property belonging to other persons. Henderson should evaluate methods to ensure that residents living near washes have knowledge of the City Code requirements concerning animal waste. Methods could include mailing flyers to targeted areas or providing public service announcements. All notifications should include suggestions for proper handling of animal waste such as using pet waste bags and scoops.

The City's legal authority to require structural and nonstructural BMPs at construction sites is discussed in Section 6.6.

6.2 Public Outreach and Education, and Intergovernmental Coordination (Permit Section 4.5)

Background: Henderson primarily relies on CCRFCD's public outreach and education program. See Appendix E.1 for additional information.

Positive Attribute

- *Henderson provided advice and funding for Project Green, which created an open space for recreational use along Pittman Wash with the help of volunteers.*

Volunteers have also cleaned up other wash segments in Henderson, and Henderson is working to identify other washes that could be candidates for a similar program. Henderson should submit its wash cleanup and restoration activities conducted by volunteer groups for inclusion in the Public Education and Outreach Section of the Annual Report.

6.3 Best Management Practices (Permit Section 4.6)

Background: Henderson conducts various best management practices such as inspection of washes and detention basins; review and approval of drainage plans prior to site construction; at least monthly street sweeping; and SOPs and nontoxic alternatives for herbicide and fertilizer application.

Potential Permit Violation

- *Henderson has not implemented a plan to reduce the discharge of pollutants from MS4s which receive discharges from areas of new development and significant redevelopment. (Permit Section 4.6.1.2)*

For further information, see Section 2.3.

Positive Attribute

- *Henderson is considering adopting an "Open Space Plan" that will require developments to retain more open space and will focus on keeping flood channels natural rather than concrete-lined.*

This plan is not in effect, and Henderson does not have additional structural controls to mitigate water quality impacts from new development and significant redevelopment. Henderson should adopt and implement the proposed "Open Space Plan." For additional information, see Section 2.3.

Program Deficiencies

- *Catch basin cleaning is behind schedule this year.*

Henderson currently has a dedicated two-man crew for catch basin cleaning and plans to clean all catch basins every five years. Henderson should implement its plan to add inspection crews to allow for more efficient and effective storm sewer cleaning.

- *Henderson does not have a regular cleaning schedule for storm sewer pipes.*

Henderson should consider developing a regular cleaning schedule for storm sewer pipes, potentially based on historical requests for service.

6.4 Illicit Discharge and Detection (Permit Section 4.7)

Background: The Henderson Public Works Support Services detect illicit discharges and illegal dumping through its quarterly channel and detention basin inspections and complaints from the public and Henderson staff.

Potential Permit Violation

- *Henderson has not trained its municipal maintenance staff to look for evidence of non-storm water discharges to the drainage system during their normal duties (Section 7.4 of the SWMP).*

Henderson staff have not been formally trained regarding spill containment or illicit discharge detection and elimination. The staff know who to call if they see illegal activity, but may not be able to identify all forms of illicit discharges. Henderson has an SOP for the handling of Unidentified Liquid Containers in Public Rights of Way. Henderson should develop SOPs for spill response and detection of illicit discharges and dump sites.

When traveling with the Henderson staff, the audit team observed a few potential illicit discharges on the street. Flow was observed from a driveway of a concrete cutting company and from other driveways in an industrial area. The staff also discussed whether it was acceptable for a local landscaping company to wash its sweeper into the street. Henderson should more aggressively investigate sources of water on streets to determine if they are illicit discharges.

Program Deficiencies

- *The Municipal Codes prohibiting illicit discharges or illegal dumping are not enforced unless someone actually observes the illegal dumping.*

During the channel inspection, pet waste and palm fronds were observed dumped in the channel directly behind two residential properties. Staff indicated that the code would not be enforced because no one witnessed residents dumping the waste.

- *Henderson does not sample dry weather flow to ensure that it is unpolluted irrigation or groundwater flow.*

During the channel inspection, City inspectors assumed that flow in the channel was irrigation or groundwater flow. Public Works Support Services have not previously tracked the flow to verify its origin.

- *Henderson maintenance staff do not carry spill containment supplies in their vehicles and would need to return to the yard for event a minor incident.*

Henderson should provide spill containment supplies in municipal maintenance vehicles and train the crews on proper spill containment practices.

- *Henderson documents the locations of illicit discharges and illegal dump sites, but has not mapped these locations.*

Henderson should add the locations of illicit discharges and illegal dump sites to the GIS to identify priority areas for illicit discharge detection and elimination.

6.5 Industrial Facility Monitoring and Control (Permit Section 4.8)

Background: Pretreatment inspectors implement Henderson’s industrial facility monitoring and control program.

Potential Permit Violation

- *Henderson has not implemented a program to monitor and control pollutants in storm water discharges to the MS4 from industrial facilities that are contributing a substantial pollutant loading to the MS4. (Permit Section 4.8)*

Henderson’s pretreatment inspectors inspect seven SARA Title III Section 313 facilities specifically for storm water BMPs as a part of regularly-scheduled pretreatment inspections, which occur at least annually. Three of the seven facilities are also hazardous waste treatment, disposal, and recovery facilities that are subject to the Resource Conservation and Recovery Act. Other industrial facilities (e.g., car washes, service stations) that may contribute substantial pollutant loading to the MS4 have not been included in the Industrial Facility Monitoring and Control program. Henderson has not conducted an assessment to determine the industrial facilities that may contribute a substantial pollutant loading to the MS4. As is common at many municipalities, Henderson may choose to include all pretreatment program industries in its MS4 industrial facility program until it is determined that each facility does not contribute a substantial pollutant loading to the MS4. This may not add a substantial work load to the pretreatment inspectors because they already keep storm water issues in mind during the inspections of the 62 other facilities inspected under the pretreatment program. Regarding the identification of industrial facilities that might contribute substantial pollutant loading to the MS4, see Section 2.5.

Program Deficiencies

- *Henderson does not include municipal operations that have potential to contribute substantial pollutant loading to the MS4 in its industrial program. The municipal operations do not have SWPPPs and are not inspected for storm water.*

Henderson should appoint a storm water representative or responsible person at each municipal operation included in the industrial facility program. That person should implement the SWPPP, conduct periodic storm water inspections of the site, and provide liaison with the Henderson personnel responsible for storm water management.

- *Henderson has not finalized a checklist or guide for the inspection of storm water controls. The pretreatment inspectors have a general knowledge of storm water requirements, but have not been formally trained.*

Henderson should finalize a checklist or guide for the industrial storm water inspection program and provide storm water training for the pretreatment inspectors.

- *The Henderson industrial facility inspection program does not include determining whether the inspected industries have applied for and/or received the required NPDES industrial storm water permit. Thus, Henderson cannot notify NDEP of non-permitted industries and/or direct non-permitted industries to contact NDEP to secure the required permit.*

Henderson inspectors do not verify if the industrial facilities have submitted an NOI for coverage under the NDEP Industrial General Permit. The inspectors should include a question regarding NDEP permit coverage in its checklist.

6.6 Construction Site BMP Program (Permit Section 4.9)

Background: Henderson has eleven storm water construction site inspectors, who also inspect sites for a multitude of other items (e.g., water, sewer, traffic, curb and gutter) that occur in the public right of way. Henderson also has four contract inspectors who inspect Henderson's public projects.

Positive Attributes

- *Henderson's storm water inspectors have been given an in-house training regarding storm water BMPs on construction sites and are encouraged to contact supervisory staff if they have questions regarding storm water BMPs or potential violations.*
- *As of September 2005, Henderson had conducted 767 storm water inspections, which is more than the commitment of 300 that the City made to CCRFCD. Henderson established an inspection frequency of once every 45 days and is not limiting inspections to its commitment of 300 (see Appendix E.1 for additional information).*
- *Henderson uses a database to track plan approval for construction sites and all types of construction site inspections, including storm water inspections.*

All construction sites with approved plans, including City projects and projects disturbing less than one acre, are tracked in the database. Henderson plans to inspect each construction site every 45 days and uses the database to flag sites due for inspection. The database is used to generate violation letters for sites with deficiencies. Henderson should consider adding a feature to the database to track whether the construction site has submitted an NOI to NDEP.

Potential Permit Violation

- *Henderson does not have an ordinance that would provide the authority to require structural and nonstructural BMPs for erosion and sediment control at construction sites. (Permit Section 4.9.1.1)*

Although Henderson's ordinance appears to provide the authority to enforce against potential discharges to the MS4, it does not specifically require that BMPs be implemented for erosion and sediment control at construction sites. Thus, in accordance with Section 4.9.1.1, the City must develop and implement a program to require structural and non-structural BMPs on construction sites.

Program Deficiencies

- *Henderson does not enforce its requirement that sites correct storm water BMP deficiencies and schedule a follow-up inspection within 21 days.*

Henderson's violation letter states that the developer must make corrections to the problems identified in no more than 21 days and call the Henderson Public Works Inspection Line to schedule a follow-up inspection once the deficiencies have been corrected. Several sites had not scheduled a follow-up inspection within 21 days. These sites are reinspected in 45-day intervals

similar to sites with no deficiencies unless the developer contacts the Public Works Inspection Line.

- *Henderson does not have an enforcement guide or procedures that indicate in what circumstances enforcement should be escalated.*

Henderson has the authority to revoke construction permits for failure to meet any condition of local, state, or Federal law. Staff can also flag a site in the database to indicate that no further inspections (e.g., building code inspections) should be performed. Henderson's history of enforcement escalation could not be evaluated because the first storm water inspections of construction sites occurred on June 27, 2005.

- *Henderson has not trained building inspectors to recognize storm water issues and contact the other inspectors if they see a construction site with the potential to discharge pollutants to the MS4.*

Henderson should develop and implement a training program on identifying storm water problems at construction sites for its building inspectors. This will enhance Henderson's ability to identify and address storm water issues in a timely fashion.

Appendix A
Storm Water Management Plan: Comments from NDEP and Co-Permittee Response

Storm Water Management Plan: Comments from NDEP and Co-Permittee Response

NDEP Comments from October 21, 2003 Letter	Co-Permittee Response
For each section with respect to each MS4 permittee, provide the location of where the documentation will be housed and maintained.	March 16, 2004 letter: Not addressed. 2003-2004 Annual Report: Addressed as a comment to be incorporated in the revised SWMP.
Are the measurable goals to be performed by each co-permittee or the group as a whole?	March 16, 2004 letter: The co-permittees plan to revise the tables of measurable goals to identify who will be performing each goal. 2003-2004 Annual Report: Clarification will be provided in a revised SWMP.
Detention basins can be used as part of [a] sequential system for the MS4 but cannot be the sole source of structural control.	March 16, 2004 letter: The SWMP includes many <i>source control</i> measures in addition to the detention basins, which will remain the only <i>structural controls</i> .
Describe the formal process that is followed once the MS4 receives a report of illegal/illicit discharge.	March 16, 2004 letter: Not addressed. 2003-2004 Annual Report: The process for handling illegal/illicit discharges will be described in the revised SWMP.
The training program and implementation time frame for municipal maintenance staff and field inspections are not acceptable. With both the input from Clark and Washoe Counties, NDEP committed on September 5, 2002, to EPA a time frame of two years for implementation of an inspection and enforcement program.	March 16, 2004 letter: Not addressed. 2003-2004 Annual Report: An acceptable time table for municipal maintenance staff training and field inspection will be presented in the revised SWMP.
It appears that part of the text is missing from the last paragraph in Section 8 - Industrial Facility Monitoring and Control Program.	March 16, 2004 letter: Not addressed. 2003-2004 Annual Report: Not addressed.
The Industrial Facility Monitoring and Control Program and the Construction Site BMP program are required for the MS4 to develop, implement, and maintain, and are not in place to assist NDEP with its programs.	2003-2004 Annual Report: The language will be changed in the revised SWMP.
An acceptable Construction Site BMP Program must include elements that address construction activity while in process.	2003-2004 Annual Report: A local construction site inspection program will be described in the revised SWMP.

Appendix B
Clark County

Appendix B.1
Documentation of Findings

3.1 Adequate Legal Authority (Permit Section 4.2)

The Clark County Storm Water System Discharge Code Title 24.40 states:

“It shall be unlawful for any person to discharge or cause to be discharged any wastewater in any form... It shall be unlawful for any person to discharge or cause to be discharged any pollutant, as defined in Nevada Revised Statute (NRS) 445A.400 into the storm water system, storm water facilities, or storm sewer, or, onto the curb, gutter, highway, or other area which may drain to the storm water system within the county, without first obtaining a discharge permit from the state of Nevada.

It shall be unlawful for any person to discharge or cause to be discharged any solid or viscous material which could cause an obstruction to the flow, or cause an interference to the operation of the storm water system, storm water facilities, or storm sewer; or any waste which is capable of damage or hazard to the storm water facilities, including structures, equipment; or personnel of the County.”

Clark County enforcement is conducted by Clark County Code Enforcement. At present, all violations have been resolved through Code Enforcement documenting the violation, meeting with the site representative, verbally requiring resolution of the violation, and issuing a follow up Notice of Violation (NOV). An NOV requires correction of the violation within 15 days. Code Enforcement reinspects the site to ensure the violation is corrected. Clark County has not escalated enforcement to issuance of a citation for collection of a fine or request for prosecution as is possible.

Code Enforcement has six staff whose duties include enforcement of residential building code violations, swimming pools, graffiti, housing occupancy, illegal dumping, rubbish debris (yard maintenance), illegal signs, shopping carts, zoning, abandoned refrigerators, and industrial and construction storm water. Clark County staff stated that the number of storm water enforcement actions conducted during the previous eight months required approximately 100 man hours. It appears Code Enforcement may be understaffed and unable to adequately and aggressively enforce storm water violations.

3.2 Public Outreach and Education, and Intergovernmental Coordination (Permit Section 4.5)

Clark County has developed and/or distributed storm water-related brochures and a Quick Reference (i.e., public hotline telephone numbers). The brochures are provided in self-service display racks in County buildings and are distributed at environmental events. Packets have been provided to teachers that include a video and children’s coloring and fun books. Clark County operates a booth at the Environmental Days event and hands out brochures, doody bags, teacher packets, coloring books, and fun books.

Clark County has developed and distributed two Power Point presentations (Storm Water Regulatory Training for Enforcement Personnel, and Storm Water Quality Management In Las

Vegas Valley [for contractors and construction staff]). The Clark County Planning Manager, stated that training has been provided to approximately 400 persons including the public and inspectors.

3.3 Best Management Practices (Permit Section 4.6)

Clark County Real Property Management staff stated that Real Property Management conducts contract management for all county departments and is responsible for all public-owned property that is not in a street right-of-way. While in general Clark County does not have a plan to reduce discharges for new development and significant redevelopment as required in Permit Section 4.6.1.2, Clark County Development Services does set standards for public and private development and requires a drainage plan. Development Services must review and approve the drainage plan prior to site construction. It does not appear that Clark County follows up to ensure the construction sites adhere to the drainage plan.

Clark County Public Works sweeps all streets at least monthly, but generally does not sweep public parking lots. Public Works does not have BMPs for street and pot hole repairs, but Clark County staff stated that road work is typically not conducted during a rain event. Sand used for deicing roads at higher elevations is removed by street sweeping at the end of the winter season. Nationally, many MS4s track the volume of material removed from catch basins and collected from street sweeping and annually evaluate the effectiveness of the programs. Clark County tracks the number of catch basins and inlets cleaned and the number of street sweeper loads, but not the volumes of materials. Clark County does not evaluate the effectiveness of the programs.

The audit team inspected the Lower Duck Creek Detention Basin and observed severe erosion into the detention basin that had not been repaired for several months. BMPs (e.g., stabilization, riprap) had not been implemented to reduce or eliminate erosion of the detention basin walls. The general public apparently has free access to the detention basin. The Clark County Maintenance Management staff was not aware that a utility company had parked heavy equipment inside the fence and a private developer had recently installed an approximately 36-inch pipe for storm water discharge to the detention basin (see Appendix B.3).

Clark County uses pesticides for mosquito larvae control and contracts the removal or eradication of bees. Clark County Health District rather than Public Works conducts outdoor pesticide application. Public Works has four state-certified pesticide applicators for control of vectors within county buildings. Vector Control was observed to conduct poor management practices for handling of used pesticide (larvicide) containers (see Appendix A.1). The Clark County Public Works and Parks and Recreation Departments respectively apply herbicides to detention basins and channels and public park areas for noxious weed control. Parks and Recreation has Standard Operating Procedures (SOPs) for herbicide use and fertilizer application.

Clark County Parks and Recreation staff and many Public Works staff have not received formal storm water training. Clark County does not appear to have a program to evaluate and as

necessary reduce pollutants in discharges from MS4s associated with application of pesticides, herbicides, and fertilizers.

3.4 Illicit Discharge and Detection (Permit Section 4.7)

Clark County uses CCRFCD Master Plan mapping for flood control infrastructure reference. The Master Plan mapping includes public and private detention basins and major discharge points. Clark County has mapped its MS4 (using GIS) to include regional piping, drop inlets, and catch basins, but not local piping. Clark County cannot determine the pathway of storm water and potential pollutants at the local piping level. Clark County staff stated that local piping will be mapped if funding becomes available.

When Clark County staff inspect the detention basins and channels for Clark County, they do not take the piping maps because they do not provide the ability to determine the source of a discharge observed in a channel.

Clark County Public Works personnel appeared to lack general storm water knowledge. For example, a blue discharge to a county wash was tracked back to a golf course that was using an EPA-approved herbicide. Since it was an EPA-approved herbicide, Clark County did not follow up, and apparently did not understand that approval for use as a herbicide does not constitute approval to discharge to U.S. waters. Clark County appeared to lack internal storm water program knowledge and coordination between various county departments. For example, Clark County Maintenance Management staff stated that he is to be notified if a spill occurs at a Public Works location; Clark County Environmental Safety Officer, stated that all spills are reported to him; and the Public Works Fuel Point signage directs spills be reported by calling 911.

Clark County staff observe detention basins and walk the channels and washes that have discharges at least twice annually. Clark County previously maintained a list of every discharge point (“orifice”) to the channels, but stopped documenting the orifices because “sources tend to be irrigation.” This was inconsistent with a previous statement by the same Clark County staff who indicated that the sources tended to be swimming pools.

The Clark County Health Department has targeted some commercial industries (e.g., dry cleaners) for control of illicit discharges, and CCRFCD and the municipal entities have developed and distributed publications related to the reduction of illicit discharges.

3.5 Industrial Facility Monitoring and Control (Permit Section 4.8)

The Clark County industrial facility program includes twelve SARA Title III Section 313 facilities that were identified through the EPA Envirofacts Toxics Release Inventory (TRI) web site. Clark County anticipates they will inspect all twelve industries annually, while in the 2003-2004 Annual Report they commit to inspecting 50% of the total number of identified facilities per year.

Clark County has contracted the CCWRD to implement the industrial facility program. The CCWRD staff provide comprehensive industrial inspections that include directives to correct potential storm water concerns. The CCWRD staff document the inspections with detailed narrative reports in addition to a completed checklist. The audit team observed a pretreatment inspector a conduct storm water inspection of the Sparkletts bottle water plant. Detailed observations associated with the inspection are presented in Appendix B.4.

Clark County does not include its municipal operations (e.g., Public Works Fleet Management, Traffic, Vector Control, Automotive) in the industrial program. Clark County does not have municipal operations SWPPPs, has not developed or implemented storm water management plans for the facilities, and does not inspect the sites for storm water. Public Works was generally unable to provide staff to conduct inspections of the municipal operations during the audit or to discuss management practices for storm water. The audit team observed the following municipal operations sites: the primary and secondary yards of the Fleet Facility, Vector Control Facility, and a small area of the Traffic Facility; the Automotive Repair and Fuel Point Facilities; and the East Facility. Most sites had significant storm water issues (e.g., multiple, large areas of petroleum-stained pavement; uncontained, opened, and exposed five-gallon pails of petroleum products; uncontained, exposed five-gallon pails of other products; 55-gallon drums and fiber barrels; spillage of bacteriological larvicide to an exposed and uncontained pavement area; uncontained, exposed used automotive batteries; and diesel and gasoline spillage) (see Appendix B.2).

3.6 Construction Site BMP Program (Permit Section 4.9)

CCDAQEM requires a dust permit before a building permit is approved. Application for the dust permit requires submittal of a Dust Mitigation Plan with selected BMPs including at a minimum BMP 10 (disturbed soil) and BMP 20 (trackout control). BMP 10 requires the permittee to limit vehicle traffic and disturbance of soils where possible and record soil conditions and dust control actions in daily project records. BMP 20 requires a gravel trackout pad, wheel shakers, or a power washer. While they are on construction sites conducting air quality inspections, CCDAQEM inspectors also conduct storm water BMP inspections based on the *Construction Site SWPPP Inspection* form. The form does not include questions related to whether the construction site has a NPDES permit. The CCDAQEM inspectors gain access to the construction sites under their authority to inspect for compliance with the dust permit. The CCDAQEM inspectors do not have the authority to enforce storm water regulations, unless they overlap with the requirements of the dust permit (e.g., trackout control requirements).

The CCDAQEM, supervision stated that when a “potential problem” is identified on site, CCDAQEM tries to contact the site supervisor, but does not go to any “great length” to actually speak to the site supervisor about the potential issues. The CCDAQEM inspectors use their discretion to determine if a follow up inspection will be conducted to verify that a compliance issue has been corrected.

While accompanying a CCDAQEM inspector to the construction inspection sites, the audit team observed that the Spanish View Towers site, which was previously inspected by CCDAQEM, did not comply with BMP 20.

NDEP provides formal storm water training for construction developers and contractors. Clark County does not provide formal training for construction site operators, or direct them to the NDEP training, but has distributed a presentation titled “Storm Water Quality Management in Las Vegas Valley.”

Appendix B.2
Municipal Facilities
Inspections and Photographs

**Municipal Facilities (Public Works Fleet, Vector Control, and Traffic)
Inspection and Photographs**

9/22/05

10:20 AM - 11:20 AM

Weather: sunny and hot

Mr. Jerry Whittum, SAIC, Ms. Ellen Blake, EPA Region 9, and Mr. David Lloyd, NDEP, observed the Clark County Public Works Fleet (primary and secondary yards), Vector Control, and Traffic facilities for storm water concerns. The audit team was accompanied by Mr. Don Ficklin, Maintenance Supervisor, Public Works, and Mr. Mark Silverstein, Environmental Planning Division, Clark County.

The purpose for a field visit of a municipal facility is to observe an industrial storm water inspection. Clark County does not inspect its municipal facilities for storm water. Mr. Ficklin and Mr. Silverstein accompanied the audit team to answer questions, but were unable to lead the inspections.

Observations

1. The Fleet, Vector Control, and Traffic facilities did not appear to have storm water controls.
2. The facilities did not have Storm Water Pollution Prevention Plans (SWPPPs).
3. The Fleet, Vector Control, and Traffic facilities did not appear to have site representatives responsible for storm water. Mr. Ficklin and Mr. Silverstein had no knowledge of such individuals.
4. The facilities did not have storm water self-inspection reports.
5. The Fleet facility had several opened five-gallon pails of petroleum product at various locations in the yards.
6. The Fleet facility had other containers of chemicals at locations in the yards.
7. The Fleet facility (primary) had a truck wash that was outside, uncovered, and uncontained.
8. The Fleet facility had numerous locations with pavement staining due to petroleum product spills/leakage from parked vehicles.
9. The Vector Control facility had cut open 55-gallon drums of biological larvicide and spilled residue to the pavement.

Findings

1. The five-gallon pails of petroleum product at the Fleet facility were unprotected, uncontained, and uncovered and would potentially be filled by rain water and overflow. Some containers also had a high potential to be accidentally tipped over.
2. The other containers of chemicals at the Fleet facility had the potential for contamination of storm water during a rain event.
3. The primary Fleet facility truck wash had the potential for wash waters to run off to adjacent property.
4. The primary Fleet facility parking lot petroleum product pavement staining was upslope from the unprotected storm water inlets at the north edge of the parking area. Petroleum product would be carried in storm water runoff from the pavement.

5. The secondary Fleet facility parking lot petroleum product pavement staining was upslope from offsite locations at the southern property boundary. The petroleum product would be carried in storm water runoff from the pavement.
6. The spilled residue biological larvicide was in a uncontained, uncovered area of pavement at the Vector Control facility. Storm water runoff would potentially carry the larvicide off site.
7. The Traffic facility had chemical containers that were uncontained and exposed to rain and rupture from vehicle accident. Storm water would carry any spillage that might occur.



Photo 1. Fleet (primary) facility: Unprotected storm water inlets at north edge of parking area.



Photo 2. Fleet (primary) facility: Two uncovered 55-gallon drums of solvent.



Photo 3. Fleet (primary) facility: Four uncovered and uncontained 5-gallon pails of truck wash chemical.



Photo 4. Fleet (primary) facility: Power washer for trucks.



Photo 5. Fleet (primary) facility: Truck wash area is outside, uncontained, uncovered.



Photo 6. Fleet (primary) facility: Four 5-gallon pails stored outside. One, without a lid, is 50% full of used petroleum product.



Photo 7. Fleet (primary) facility: Truck parking area with spills/leakage staining on pavement.



Photo 8. Fleet (primary) facility: Truck parking area with spills/leakage staining on pavement.



Photo 9. Fleet (primary) facility: Truck parking area with spills/leakage staining on pavement.



Photo 10. Fleet (primary) facility: Truck parking area with spills/leakage staining on pavement.



Photo 11. Fleet (secondary) facility: Truck and paving equipment parking area with spills/leakage staining on pavement.



Photo 12. Fleet (secondary) facility: Open 5-gallon pail of oily water in truck and paving equipment parking area.



Photo 13. Fleet (secondary) facility: Truck and paving equipment parking area with spills/leakage staining on pavement.



Photo 14. Fleet (secondary) facility: Front loader with an active leak.



Photo 15. Fleet (secondary) facility: Full and partially full 5-gallon pails of stucco and form oil.



Photo 16. Fleet (secondary) facility: Abandoned asphalt washout area.



Photo 17. Vector Control facility: Empty drums of larvicide had been cut open in an uncontained location and residue spilled to the pavement.



Photo 18. Vector Control facility: Empty drums of larvicide had been cut open in an uncontained location and residue spilled to the pavement.

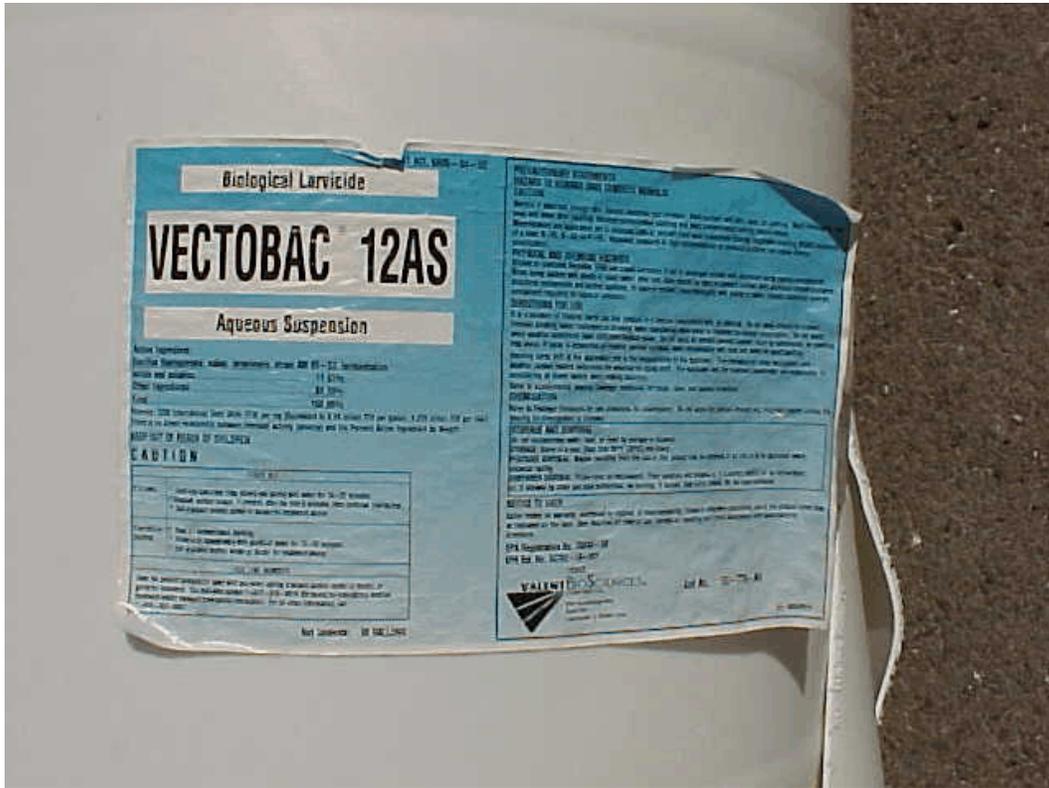


Photo 19. Vector Control facility: Empty drums of larvicide had been cut open in an uncontained location and residue spilled to the pavement.



Photo 20. Vector Control facility: Empty drums of larvicide had been cut open in an uncontained location and residue spilled to the pavement.



Photo 21. Traffic facility: One 55-gallon drum of flammable contents and three fiber drums of unknown contents were uncovered and uncontained.

**Municipal Facility (East Facility)
Inspection and Photographs**

9/22/05

11:25 AM - 11:35 AM

Weather: sunny and hot

Mr. Jerry Whittum, SAIC, Ms. Ellen Blake, EPA Region 9, and Mr. David Lloyd, NDEP, observed the Clark County East Facility for storm water concerns. The audit team was accompanied by Mr. Don Ficklin, Public Works, Maintenance Supervisor, and Mr. Mark Silverstein, Environmental Planning Division, Clark County.

The purpose for a field visit of a municipal facility is to observe an industrial storm water inspection. Clark County does not inspect its municipal facilities for storm water. Mr. Ficklin and Mr. Silverstein accompanied the audit team to answer questions, but were unable to lead the inspection.

Observations

The East Facility is used for dumping and drainage of street sweepings. The facility had sediment traps followed by treatment prior to discharge to the sanitary sewer. The facility was well maintained.

Findings

None.



Photo 1. Street sweeper unloading and sweeping facility area.



Photo 2. Street sweeper being washed out.



Photo 3. Sediment traps to collect soil and debris from street sweeper unloading.



Photo 4. Treatment basin for materials escaping the sediment traps.

**Municipal Facility (Clark County Automotive Repair and Fuel Point)
Inspection and Photographs**

9/22/05

11:40 AM - 12:10 PM

Weather: sunny and hot

Mr. Jerry Whittum, SAIC, and Ms. Ellen Blake, EPA Region 9, observed the Clark County Automotive Repair and Fuel Point facilities for storm water concerns. No Clark County representatives accompanied the audit team.

The purpose for a field visit of a municipal facility is to observe an industrial storm water inspection. Clark County does not inspect its municipal facilities for storm water.

Observations

1. The Automotive Repair facility had minimal staining of pavement from petroleum spills/leakage. The facility had used batteries located outside, uncontained, and uncovered.
2. The Fuel Point area had several fresh spills. The audit team did not observe a spill kit or emergency shutoff at the fuel island. Signage directed calling 911 in case of a fuel spill.

Findings

1. Exposed and uncontained used batteries at the Automotive Repair facility had the potential to lose acid to storm water runoff.
2. The spillage at the Fuel Point area was under the canopy, but had the potential to be tracked out of the canopy area and be carried to the adjacent street by storm water.



Photo 1. Two used exposed and uncontained batteries located outside the Automotive Repair facility.



Photo 2. Three used exposed and uncontained batteries located outside the Automotive Repair facility.



Photo 3. Exposed, but contained used batteries located outside the Automotive Repair facility.



Photo 4. Waste oil pit and multiple 55-gallon drums that are full, partially full, and empty at the Automotive Repair facility.



Photo 5. View of fuel island.



Photo 6. Spillage at fuel island.



Photo 7. Spillage at fuel island.

Appendix B.3
Municipal Structure
Inspection and Photographs

**Municipal Structure (Lower Duck Creek Detention Basin)
Inspection and Photographs**

9/21/05

4:10 PM - 5:15 PM

Weather: sunny and hot

Mr. Jerry Whittum, SAIC, Ms. Kathi Moore and Ms. Ellen Blake, EPA Region 9, and Mr. Cliff Lawson, NDEP, conducted an inspection of the Lower Duck Creek Detention Basin municipal storm water control structure. Mr. Gill Suckow and Mr. Mark Silverstein, Clark County, accompanied the audit team. Mr. Suckow is the Clark County representative for the detention basin.

Observations

1. Erosion into the detention basin was observed at several locations. Some erosion channels in the west wall of the detention basin were at least four feet deep and six feet wide. Mr. Suckow stated that the erosion in the west wall had occurred several months ago.
2. Utility work was ongoing outside the east fence of the detention basin. The heavy equipment was parked inside a locked gate to the detention basin area. Mr. Suckow was unaware of the ongoing work.
3. An approximately 36-inch pipe for storm water discharge to the detention basin had recently been installed at the northwest corner of the detention basin. The pipe appeared to have been installed by the developer of an adjacent subdivision. Mr. Suckow was unaware of the installation.

Findings

1. Clark County is not actively repairing erosion into the detention basin and has not implemented Best Management Practices (BMPs) such as stabilization and/or riprap of the basin walls. Loose soils eroded into the basin will potentially be carried by storm water to the Duck Creek Channel when a rain event occurs.
2. It appears Clark County does not require that access to the detention basin area can only occur after the site representative (i.e., Mr. Suckow) is notified and has opportunity to assess the impact, provide comment, and direct requirement of storm water BMPs. BMP issues included the following:
 - Parking of heavy equipment inside the detention basin fence could potentially result in disturbance of the detention basin walls and increase erosion. Heavy equipment refueling spills and petroleum fluid leaks to the soil are not uncommon. Loss of petroleum product in the detention basin area may result in petroleum product entering the Duck Creek Channel.
 - Installation of discharge pipes to the detention basin may result in erosion where the pipe enters the basin and may cause scouring of the basin floor at the discharge point. Loose soils will potentially be carried by storm water to Duck Creek Channel when a rain event occurs.
3. It appears that Clark County is not tracking all new contribution of storm water (i.e., the unknown 36-inch discharge pipe) to the detention basin to ensure the basin capacity is not exceeded.



Photo 1. Erosion to the detention basin at the northeast corner.



Photo 2. Southwest view of the detention basin from the east fence.



Photo 3. West view of the detention basin from the east fence.



Photo 4. Northwest view of the detention basin from the east fence.



Photo 5. View of the wash passing under the street to the detention basin.



Photo 6. Inlet to detention basin at southwest corner.



Photo 7. East view of detention basin.



Photo 8. Erosion on west wall of detention basin.



Photo 9. Erosion on west wall of detention basin.

Appendix B.4
Industrial Facility
Inspection and Photographs

**Industrial Facility (Sparkletts)
Inspection and Photographs**

9/21/05

12:45 PM - 1:10 PM

Weather: sunny and hot

Mr. Jerry Whittum, SAIC, and Mr. Cliff Lawson, NDEP, observed Mr. Mark Palsgrove, Clark County Pretreatment Inspector, conduct an inspection of the Sparkletts bottle water plant. The Sparkletts facility includes process areas, vehicle maintenance, outside storage, truck parking, and truck fueling areas. Mr. Mark Silverstein, Clark County Environmental Planning Division, joined the inspection. Mr. Henry Jones, Plant Supervisor, represented Sparkletts. Mr. Palsgrove was directed by the audit team to conduct a typical inspection of the site.

Observations

1. Mr. Palsgrove conducted a thorough storm water inspection of the site.
2. He identified 55-gallon drums with loose or missing bungs and directed that they be properly sealed. He directed the facility to train employees in the proper sealing of drums.
3. He discussed vehicle maintenance activities, equipment, and handling of spent fluids.
4. He inspected the loading dock and storm water sump, and handling of collected storm water.
5. He discussed street sweeping of the truck parking area.
6. He inspected under vehicles parked outside for spillage/leakage and observed where parking lot runoff would leave the site. He directed the site staff to formulate a plan for handling parking lot runoff.
7. He directed the removal of the salvage drum materials within 30 days.
8. He inspected a truck stored outside that was under repair and directed the truck engine area be covered with a tarp to avoid contamination of storm water.
9. He stated that he would return within one week to evaluate compliance with his directives.

Findings

Mr. Palsgrove was unsure who should be notified if he encountered an industrial site discharging pollutants to the street.



Photo 1. Mr. Palsgrove inspecting containers located on containment in the used equipment storage area.



Photo 2. Mr. Palsgrove inspecting used oil containment tank.



Photo 3. Mr. Palsgrove inspecting used oil filter disposal.



Photo 4. Mr. Palsgrove inspecting loading dock and dead sump for collection of storm water.



Photo 5. Salvage material drum at propane fueling point.



Photo 6. Mr. Palsgrove inspecting a truck that was being repaired. A drip pan was being used under the engine.

Appendix B.5
Construction Sites
Inspections and Photographs

**Municipal Construction (Nellis Boulevard)
Inspection and Photographs**

9/21/05 3:00 PM - 3:45 PM Weather: sunny and hot

Mr. Jerry Whittum, SAIC, Ms. Kathi Moore and Ms. Ellen Blake, EPA Region 9, and Mr. Cliff Lawson, NDEP, observed the Nellis Boulevard (Hacienda Avenue to Russell Road) Duck Creek Channel construction site for storm water concerns. The audit team was accompanied by Mr. Gill Suckow and Mr. Mark Silverstein, Clark County. Mr. James Robinson, Project Representative, Black & Veatch, was the on-site representative.

The purpose for a field visit of a municipal facility is to observe an industrial storm water inspection. Clark County staff were unsure as to who was responsible for construction inspections of municipal sites. Mr. Suckow and Mr. Silverstein accompanied the audit team to answer questions, but were unable to lead the inspection.

Observations

1. Clark County staff and Mr. Robinson discussed who was responsible for construction site inspections. Following the discussion, Mr. Robinson stated that he conducted site inspections. Mr. Robinson stated that "to his knowledge" the Clark County Regional Flood Control District also inspected the site Best Management Practices (BMPs).
2. The NPDES Storm Water Construction Permit and Storm Water Pollution Prevention Plan (SWPPP) were not kept on site and were not available for review.
3. Self-inspections of the site were not documented.
4. Concrete washout had occurred on the face of the earthen dam upslope from the sump located at the toe of the dam slope. The sump pumped seepage water and potentially concrete runoff to the diversion inlet which passed the water downstream to the Duck Creek Channel.
5. The only storm water BMP observed on site was a straw bale filter at the downstream end of the construction project.
6. Several 5-gallon pails of concrete chemicals were randomly placed along a retaining wall where construction vehicle traffic occurred. An uncontained 5-gallon gas can was located in the staging area.
7. Mr. Robinson stated the site was 2.5 acres and that the site did not include the staging areas. The staging areas occupied over one acre of disturbed soil.

Findings

1. It appeared that Clark County had not formally determined who was responsible for the site self-inspections required by the NPDES permit.
2. Because of the lack of required paperwork on site (i.e., NPDES Permit, SWPPP, and self-inspection reports), the audit team could not verify whether the site had an NPDES permit; whether a SWPPP had been developed and implemented; and whether self-inspections were occurring.
3. The site did not have BMPs (e.g., silt fence, riprap, stabilization) along the Duck Creek Channel to reduce the runoff of sediment to the channel.

4. Concrete washout had occurred above the sump and likely concrete washout runoff was pumped to the diversion and entered the Duck Creek Channel waters below the project area.
5. Chemicals (e.g., concrete chemicals, gasoline) were not contained and/or located to minimize the potential for accidental spillage and loss to the soil or Duck Creek Channel.
6. The staging areas included disturbed soils that are part of the project and must be protected and inspected for storm water.



Photo 1. Diversion inlet (photo left) and earthen dam.

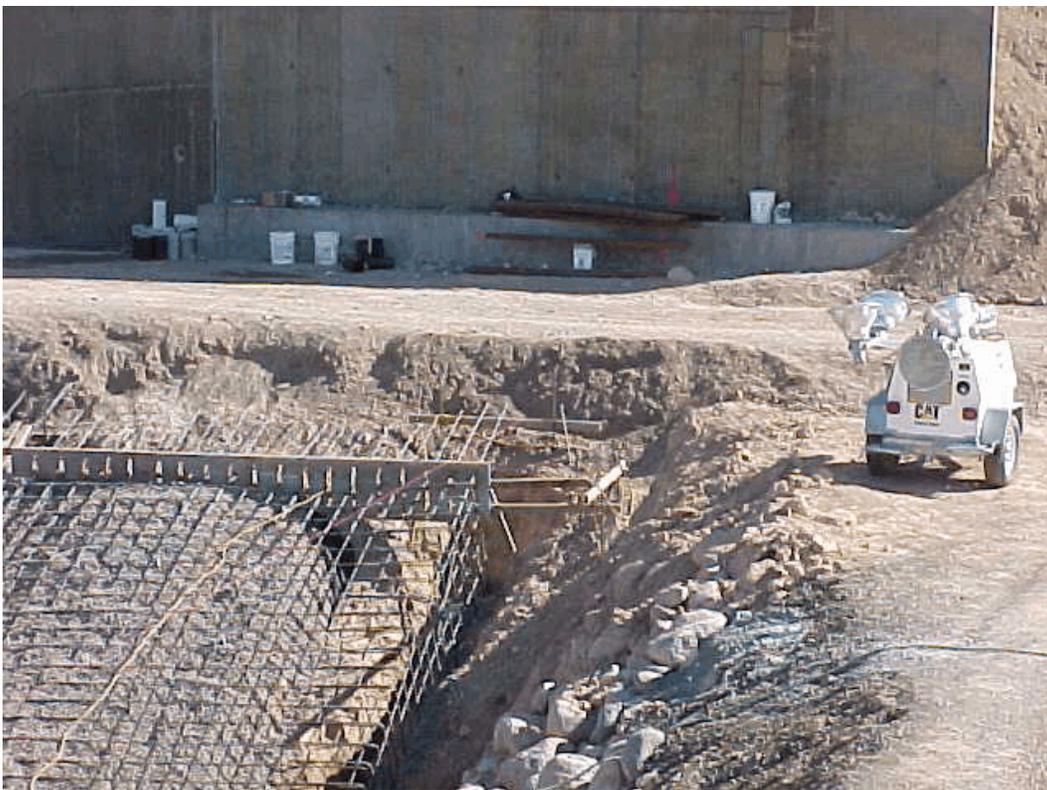


Photo 2. Downstream side of earthen dam. Note concrete runoff on face of dam. Note 5-gallon pails of chemicals along the retaining wall.



Photo 3. Closeup view of concrete washout on downstream face of earthen dam. A sump is located at the toe of the dam face (photo left).



Photo 4. View downstream from earthen dam of Duck Creek Channel (photo center) and retaining walls (photo left and right).



Photo 5. View of straw bale filter in Duck Creek Channel downstream from the construction area.



Photo 6. Staging area. Note the soil disturbance and no BMPs.



Photo 7. Additional staging area. Note uncontained five-gallon gas can (photo center).

**Private Construction (Mountain Edge)
Inspection and Photographs**

9/22/05 1:00 PM - 4:45 PM Weather: sunny and hot

Mr. Jerry Whittum, SAIC, Ms. Ellen Blake, EPA Region 9, and Mr. David Lloyd, NDEP, observed Mr. Richard Nielsen, Air Quality Specialist, Clark County Department of Air Quality and Environmental Management (CCDAQEM), conduct a construction inspection of Mountain Edge utilities and developments. The Mountain Edge development occupies several thousand acres and involves multiple developers. The inspection evaluated the storm water management of (1) Landtec LLC., the developer of site streets and utilities and (2) Pardee Homes, the developer of Mirador, a single family residential development located in Mountain Edge. Mr. Mark Silverstein, Environmental Planning Division, Clark County accompanied the audit team. Mr. Nielsen was directed by the audit team to conduct a typical, but somewhat abbreviated inspection of the Mountain Edge site.

The audit team also observed Mr. Nielsen conduct an unplanned interview at a KB Home site while en route to Mountain Edge. Mr. Nielsen and the audit team observed work occurring in a wash, and Mr. Nielsen stopped to investigate. Mr. Nielsen interviewed site personnel to identify the responsible party and ensure the site had a dust permit. The site belonged to KB Home, who had a dust permit for the site and was required to clean up the wash prior to release from a bond.

Observations

1. CCDAQEM dust inspectors conduct storm water inspections for Clark County.
2. Mr. Nielsen described his normal inspection procedure and handling of noncompliance activities.
3. He appeared to conduct a thorough storm water inspection of construction sites, but was uncertain whether he was adequately evaluating storm water issues.
4. He checked to see if the site has an NPDES construction permit and a Storm Water Pollution Prevention Plan (SWPPP). If a site is unpermitted and over one acre, he informs the site contact of the requirement to be permitted by NDEP and provides a brochure related to NPDES permitting to the site contact.
5. He drove slowly through the sites and stopped to inspect inlet best management practice (BMP) controls and to observe trackout.
6. He considered the Mountain Edge sites to have non-grievous concerns and overall considered the sites to be in compliance. The audit team would not consider the sites to be in compliance.
7. Clark County protocol requires the Air Quality Specialist to determine the gravity of the site noncompliance. If noncompliance is determined to be non-grievous, the report is filed internally. If grievous, the report is forwarded to Clark County Regional Flood Control District. Concerns are verbally provided to the site contact. However, if contact is not made with a site representative, it appears the Clark County policy directs that the inspection report of non-grievous concerns be filed internally, and no followup action or notification occurs.

Findings

1. Mr. Nielsen's uncertainty that he was adequately evaluating storm water issues indicates a need for formal inspector training by an experienced storm water inspector trainer.
2. Clark County protocol for determining followup activities for grievous storm water issues and limited or no action for non-grievous issues appears to allow noncompliance to continue without enforcement.



Photo 1. Street inlet protection that is poorly maintained by Landtec LLC.



Photo 2. Street inlet protection that is poorly maintained by Landtec LLC.



Photo 3. Street inlet protection that is poorly maintained by Landtec LLC.



Photo 4. KB Home hand cleaning of culverts in wash.

Appendix C
City of Las Vegas

Appendix C.1
Documentation of Findings

4.1 Adequate Legal Authority (Permit Section 4.2)

Chapter 14.17 (Wastewater Collection and Treatment) of the Las Vegas Municipal Code includes the following provisions related to prohibition of illicit discharges:

- Section 14.17.110 prohibits discharge of any septic tank, holding tank or cesspool or any trucked wastewater to the storm drain system or to waters of the State.
- Section 14.17.120 (B)(1) prohibits “Solid or viscous material which could cause an obstruction to the flow or cause an interference to the operation of the system or the City’s storm drain system, including without limitation grease, garbage with particles that are greater than one-half of an inch in any dimension, animal guts or tissues, paunch manure, bones, hair, hides or fleshing, entrails, feathers, ashes, cinders, sand, spent lime, stone marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastics, gas tar, asphalt residues, residues from the refining or processing of fuel, lubricating oil, mud, glass grinding or polishing wastes, any wastewater that has a pH of less than 5.0 or more than 11.0 or any wastewater that has any other corrosive property that is capable of causing damage or hazard to the structures, equipment, or personnel of the City.”
- Section 14.17.120 (D) states that “it is unlawful for any person to discharge wastewater in any form, other than storm water, into the storm drains of the City of Las Vegas.”
- Section 14.17.120 (E) states that “it is unlawful for any person to discharge any pollutant, as defined in the Act, into surface waters within the City of Las Vegas without first obtaining an NPDES permit from the State of Nevada or the U.S. Environmental Protection Agency.”
- Section 14.17.025 (66) defines a storm drain as “a conveyance structure for carrying storm and surface waters and drainage water excluding wastewater.”
- Section 14.17.025 (67) defines storm water as “uncontaminated water resulting from precipitation; irrigation with drinking water; or clean groundwater.”

Because Chapter 14.17 is Las Vegas’ pretreatment ordinance, many provisions specifically refer to industrial users, which the ordinance defines as (a) Any user who discharges industrial wastewater into the system; or (b) Any user who is subject to regulations promulgated in accordance with Section 307(b), (c), (d) of the Clean Water Act. Las Vegas’ ability to require compliance with conditions in ordinances, permits, contracts or orders, and to carry out the inspection, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with the prohibition of illicit discharges appears to be restricted to facilities that meet the definition of industrial users, or who are otherwise permitted under this ordinance. This would exclude many facilities, such as construction sites, that have the potential to discharge storm water but are not industrial users.

4.2 Public Outreach and Education, and Intergovernmental Coordination (Permit Section 4.5)

In May 2004, Las Vegas participated in the Earth Day event at Nellis Air Force Base. Las Vegas has also placed about 5,000 plaques on drop inlets.

4.3 Best Management Practices (Permit Section 4.6)

Las Vegas uses only three herbicide products, all of which are available over-the-counter. The products are used only as needed and are generally used only on traffic islands. Chemicals may be used adjacent to the Las Vegas Wash, but are not used in the Las Vegas Wash. The two crew foremen were certified as applicators in February 2005.

Las Vegas does not currently use an asset management database to schedule or track its cleaning of storm drain structures; however, a system is used to maintain a record of service calls and complaints. Structures are cleaned based on historical problems and as needed, based on complaints.

Detention basins are inspected twice a year as part of the Wash Walk program and are also inspected after each major storm event. The basins are cleaned and maintained as needed after each inspection by Las Vegas' annual maintenance contractor.

The audit team inspected three detention basins: Gowan, Angel Park South, and Meadows (see Appendix B.2). Gowan is an example of a multi-use basin; it has a playing field inside. In the event of a storm, the trash cans located in the field would not be removed and could contribute to the pollutants leaving the MS4. Fertilizers applied to the field could also contaminate storm water. The Meadows Detention Basin is being modified to incorporate a meandering waterway, and will become part of a regional park.

As described in Section 3.6, the co-permittees have recently begun an effort to evaluate how the basins perform with regard to pollutant control, but have not proposed any other structural controls.

4.4 Illicit Discharge and Detection (Permit Section 4.7)

The primary means of detecting illicit discharges to the visible areas of the storm drain system is through the twice annual Wash Walks, which are documented in the 2003-2004 Annual Report. The audit team observed a Las Vegas inspector on a simulated Wash Walk (documented in Appendix B.2). In conducting the Wash Walks, the inspector looks for dry weather flow, heavy sediment loads, and any significant obstructions in the wash. When the Wash Walk crew finds a potential illicit discharge, they notify appropriate Las Vegas or other agency staff who can investigate the situation. The Wash Walk crew refers flows thought to be from construction sites to NDEP and flows from permitted industrial users to Las Vegas' Industrial Waste Section. The Wash Walk crew does not note the location using a global positioning system (GPS) device and

relies on visual observations rather than field analyses to evaluate the quality of any observed flows. See Section 3.6 for a discussion of the co-permittees' field screening program.

Illicit discharges include SSOs. Las Vegas has 1,450 miles of sanitary sewer. With the exception of 24-inch and 36-inch lines, which constitute less than 5% of the sewer mains, all sewers are cleaned once every two years. In FY2004, crews cleaned a total of 746 miles of sanitary sewer mains. Crews also televised 329,654 feet of sewer mains. Las Vegas plans to begin addressing the larger mains not currently in the cleaning program beginning in early 2006. Las Vegas has evaluated sanitary sewers and storm sewers for cross-connections.

SSOs are reported quarterly to the state. In FY2004, Las Vegas had 74 'reportable' SSOs. Las Vegas provided a list of SSOs reported during January through March of 2005. Grease (nine spills), solids accumulation (eleven spills), and external debris (nine spills) were the major causes of overflows during this quarter. Altogether, 9 of the 23 spills during this quarter entered storm drains or channels. All SSOs during this quarter were due to blockages. In general, blockages can be reduced by more frequent cleaning or by targeting increased cleaning to areas prone to such problems.

Las Vegas has a full Hazmat team to respond to spills and can also call in a contractor if a large spill occurs. The Industrial Waste Section may also respond to smaller spills if requested. If the Hazmat team determines that there is a danger from fumes during a spill, they will flush the material to a storm drain. Las Vegas typically learns about spills from the 911 system but does not maintain a master list of these calls. Individual Fire Stations respond to those located in their areas; no city-wide log is maintained of call-outs.

Las Vegas' building code requires all restaurants and any non-domestic kitchens to have a grease trap. However, restaurants are not required to have pretreatment permits and are not typically inspected by Industrial Waste Section staff. Thus, Las Vegas has no means of knowing whether the grease traps are properly operated and maintained. Las Vegas staff stated that additional personnel would be needed to inspect all restaurants periodically. Sewer maintenance staff notify the Industrial Waste Section when grease appears to have caused a blockage or SSO. The Industrial Waste Section has issued NOV's due to grease problems in the collection system.

4.5 Industrial Facility Monitoring and Control (Permit Section 4.8)

Prior to issuance of the Permit, the co-permittees discussed their responsibilities with NDEP. They decided not to overlap with any state programs. Las Vegas does not receive lists of facilities from the state that have been issued storm water permits. They also do not provide any information to the state.

Based on a list dated September 13, 2005, that Las Vegas submitted to the audit team, facilities within Las Vegas that have been identified under Permit Section 4.8 include Anderson Dairy, Las Vegas Finishing, Nevada Ready Mix, Southern Nevada Paving Beltway, and Sparkletts Water Systems (noted as being out-of-business). These facilities met the criteria used to identify

industrial facilities subject to Section 313 of SARA Title III, municipal landfills, hazardous waste treatment and disposal facilities, and other industrial facilities determined by the committees to be potential sources of substantial pollutant loading. According to staff, Las Vegas' Industrial Waste Section inspects these facilities for compliance with storm water regulations.

Las Vegas has issued permits to nine Significant Industrial Users (SIUs), also known as Class I facilities, and about one thousand Class II facilities (such as photo processors, dry cleaners, dentists and others). The city yards are also permitted Class II facilities. The Industrial Waste Section also inspects these facilities for compliance with the parts of the Las Vegas ordinance that pertain to storm water. Industrial Waste Section staff received training in inspecting industrial facilities for storm water compliance in September 2005.

Appendix C.2
Municipal Facility
Inspection and Photographs

**Municipal Facility (East Yard)
Inspection and Photographs**

9/21/05

2:00 PM - 2:45 PM

Weather: sunny and hot

Ms. Dianne Stewart, SAIC, and Mr. John Tinger, EPA Region 9, observed Mr. Mark Montoya of Las Vegas conduct a storm water inspection of the East Yard facilities. Mr. Daniel Fischer and Ms. Lori Wholetz of Las Vegas were also present. A Notice of Intent (NOI) was submitted about seven years ago. The facility does not have a Storm Water Pollution Prevention Plan (SWPPP).

Observations

1. Mr. Montoya always starts this inspection at the single outfall from the site to the MS4. This consists of a grate covered with filter fabric. The filter fabric is checked only twice per year during the semi-annual inspections.
2. The transfer station has a drain that discharges through a sand/oil interceptor to the sanitary sewer.
3. The facility has a satellite accumulation area primarily for paint storage. Wastes were placed near this facility outside its storage pad. Ms. Wholetz is responsible for this facility. She immediately called to determine who abandoned the wastes. Before the audit team left the Yard, a Parks Department truck arrived to remove the wastes.
4. The Fire Department uses an area of the Yard for storage of various parts and equipment, including used batteries.
5. A mobile car wash was operating in a parking lot. Las Vegas staff requested that the operation be relocated to an area that drains to a sand/oil interceptor and the sanitary sewer.

Findings

1. The filter fabric over the storm drain grate should be checked more often than twice per year. There are piles of sand, gravel, and soil nearby, and the filter fabric is the only barrier to storm water that could contain these materials.
2. The gate of the satellite accumulation area was not locked.
3. Acid appeared to have leaked from exposed and uncontained used batteries onto the concrete surface and thence to the MS4.
4. During rain events, oil, grease, and metals could leach from equipment stored in the open.
5. An NOI should be submitted under the current MS4 permit.



Photo 1. Transfer station.



Photo 2. Inside transfer station.



Photo 3. Waste materials abandoned by Parks Department.



Photo 4. Waste materials abandoned by Parks Department.



Photo 5. Satellite accumulation area.



Photo 6. Batteries waiting to be recycled.



Photo 7. Materials stored on gravel pad.



Photo 8. Parks Department vehicle removing wastes.



Photo 9. Mobile car wash in parking lot of East Yard.



Photo 10. Grate over sand/oil interceptor.

Appendix C.3
Municipal Structures
Inspection and Photographs

**Municipal Structure (Las Vegas Wash)
Inspection and Photographs**

9/21/05 1:00 PM - 1:45 PM Weather: sunny and hot

Ms. Dianne Stewart, SAIC, and Mr. John Tinger, EPA Region 9, observed Ms. Lori Wholetz and Mr. Mark Montoya of Las Vegas conduct an inspection of the Las Vegas Wash from Stewart Avenue to Cedar Creek. Mr. Daniel Fischer of Las Vegas was also present.

Observations

1. When the audit team arrived on site, a concrete truck owned by Nevada Ready Mix had just dumped waste concrete onto the ground next to the Las Vegas Wash. The driver was using a hose to wash out the equipment.
2. Las Vegas staff identified themselves to the driver and discussed the situation with him. Las Vegas staff obtained photographs of the discharge. The truck drove off.
3. Las Vegas staff made notes regarding their observations as they walked along the Wash. The presence of suds and brown water was noted as being normal for the location.

Findings

1. Las Vegas staff did not use a global positioning system (GPS) device to precisely identify the locations of their observations. A map based on SAIC's GPS information is attached.
2. In a letter dated September 26, 2005, Las Vegas issued a Notice of Violation (NOV) with an administrative penalty fee of \$500. The NOV cited Sections 14.17.120(D) and (E) of the Las Vegas Municipal Code.



Photo 1. Concrete truck that just completed wash-out.



Photo 2. Wash-out material left by concrete truck.



Photo 3. View of Las Vegas Wash near intersection of Stewart Avenue and Nellis Boulevard.



Photo 4. Las Vegas Wash - Appearance is brown with suds.



Photo 5. Cedar Creek inflow to Las Vegas Wash.

Municipal Structure (Gowan, Angel Park South, and Meadows Detention Basins) Inspection and Photographs

9/22/05 10:30 am - 12:00 pm Weather: sunny and hot

Ms. Dianne Stewart, SAIC, and Ms. Kathi Moore and Mr. John Tinger, EPA Region 9, conducted an inspection of the Gowan, Angel Park South, and Meadows Detention Basins. Dan Fischer, Mark Montoya, and John Solvie of Las Vegas accompanied the audit team.

Observations

1. Gowan is an example of a multi-use basin; it has a playing field inside. In the event of a storm, the trash cans located in the field would not be removed.
2. The Meadows Detention Basin is being modified to incorporate a meandering waterway, and will become part of a regional park.
3. A contractor is conducting sampling of influent and effluent in the Meadows Detention Basin during storm events.

Findings

Trash cans left in Gowan Detention Basin could contribute to the pollutants leaving the MS4. Fertilizers applied to the field could also contaminate storm water.



Photo 1. Gowan Detention Basin - inlet.



Photo 2. Gowan Detention Basin - outlet.



Photo 3. Gowan Detention Basin - signage.



Photo 4. Angel Park South Detention Basin.



Photo 5. Angel Park South Detention Basin.



Photo 6. Angel Park South Detention Basin.



Photo 7. Meadows Detention Basin.



Photo 8. Meadows Detention Basin - inlet area.



Photo 9. Meadows Detention Basin - outlet area.



Photo 10. Meadows Detention Basin - influent sample probe about six inches from bottom of channel.



Photo 11. Meadows Detention Basin - flow in influent channel.



Photo 12. Meadows Detention Basin - marine battery in sampler.



Photo 13. Meadows Detention Basin - effluent sampler and outfall.



Photo 14. Meadows Detention Basin - effluent sample probe.



Photo 15. Meadows Detention Basin - grate at effluent from basin.

Appendix C.4
Industrial Facility
Inspection and Photographs

**Industrial Facility (Anderson Dairy)
Inspection and Photographs**

9/21/05

3:25 PM - 4:10 PM

Weather: sunny and hot

Ms. Dianne Stewart, SAIC, and Mr. John Tinger, EPA Region 9, observed Mr. Mark Montoya of Las Vegas conduct a storm water inspection of Anderson Dairy. Anderson Dairy is a significant industrial user. Mr. Daniel Fischer of Las Vegas was also present. Mr. Montoya was directed by the audit team to conduct a typical inspection of the site.

Observations

1. When the audit team arrived on site, a roll-off container in the process of being prepared for hauling off site was leaking. An Anderson Dairy staff person was hosing down the leaked material into a drain to the street. Las Vegas staff indicated that similar activities had been observed in the past.
2. Las Vegas staff told facility representatives that discharging the material to the street was unacceptable. An Anderson Dairy staff member began placing absorbent material at the facility's drain.
3. The audit team observed dried milk solids in the street gutter outside the facility.
4. Dried milk solids were also present on asphalt inside the facility.
5. A leaking tank also appeared to be a source of discharge to the street.
6. Detergent leaking from a wash rack could enter a gutter that flowed to the street.

Findings

In a letter dated September 29, 2005, Las Vegas issued a Notice of Violation (NOV) with an administrative penalty fee of \$500. The NOV contained a requirement for Anderson Dairy to submit a written plan on or before October 21, 2005, to prevent overfills, leaks, spills, clogs, etc. from entering the Las Vegas storm drains. The plan must be acceptable to Las Vegas.



Photo 1. Roll-off container is leaking.



Photo 2. Roll-off container is leaking.



Photo 3. Roll-off container is leaking.

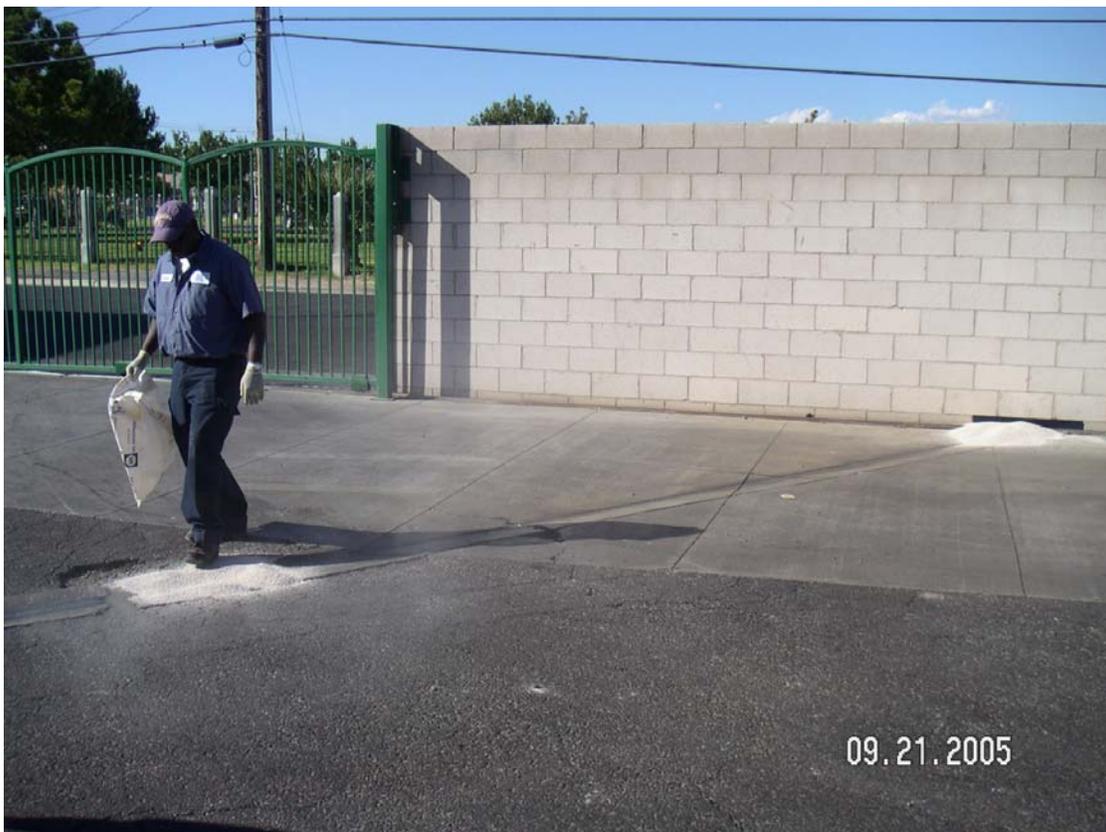


Photo 4. Worker spreading absorbent material.

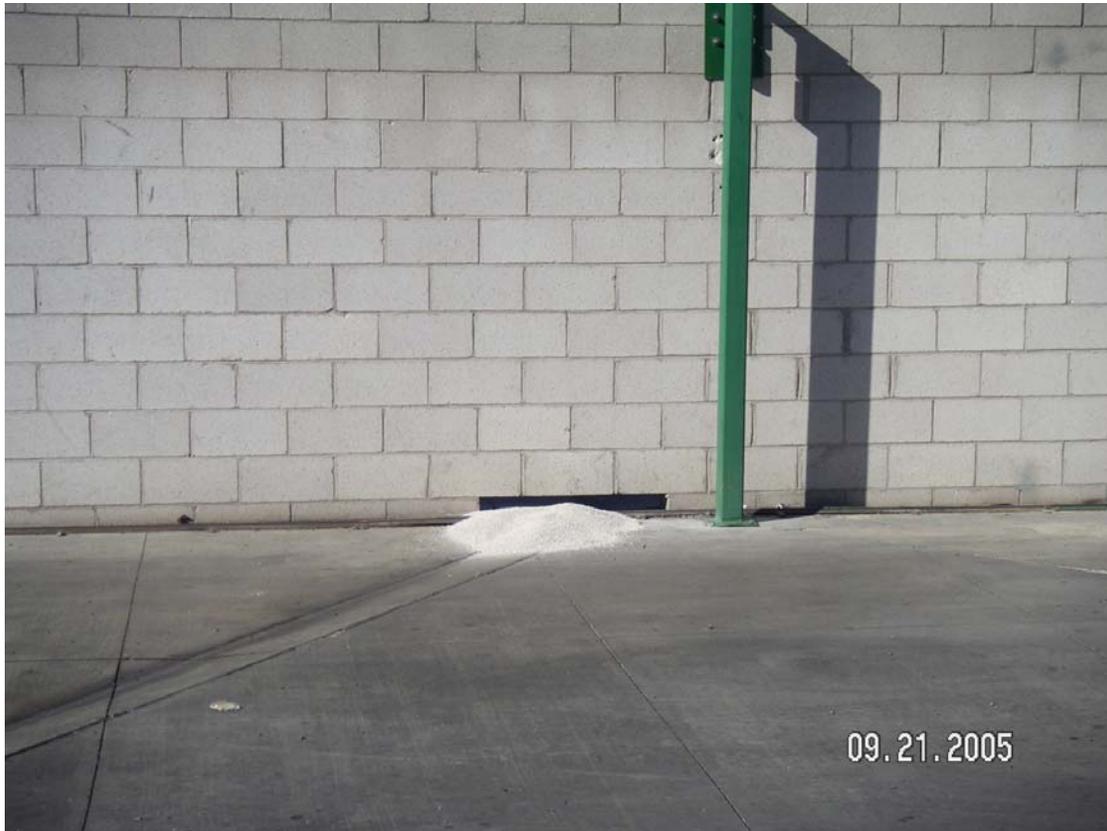


Photo 5. Absorbent material at point of outflow from yard.



Photo 6. Tank truck off loading area.



Photo 7. Dried milk solids in street gutter outside facility.



Photo 8. Dried milk solids entered street gutter from facility drain.



Photo 9. Discharge to street from leaking tank.



Photo 10. Dried milk solids on asphalt inside facility.



Photo 11. Dried milk solids spilled next to drain to street seen in Photo 8.



Photo 12. Dried milk solids spilled next to drain to street seen in Photo 8.

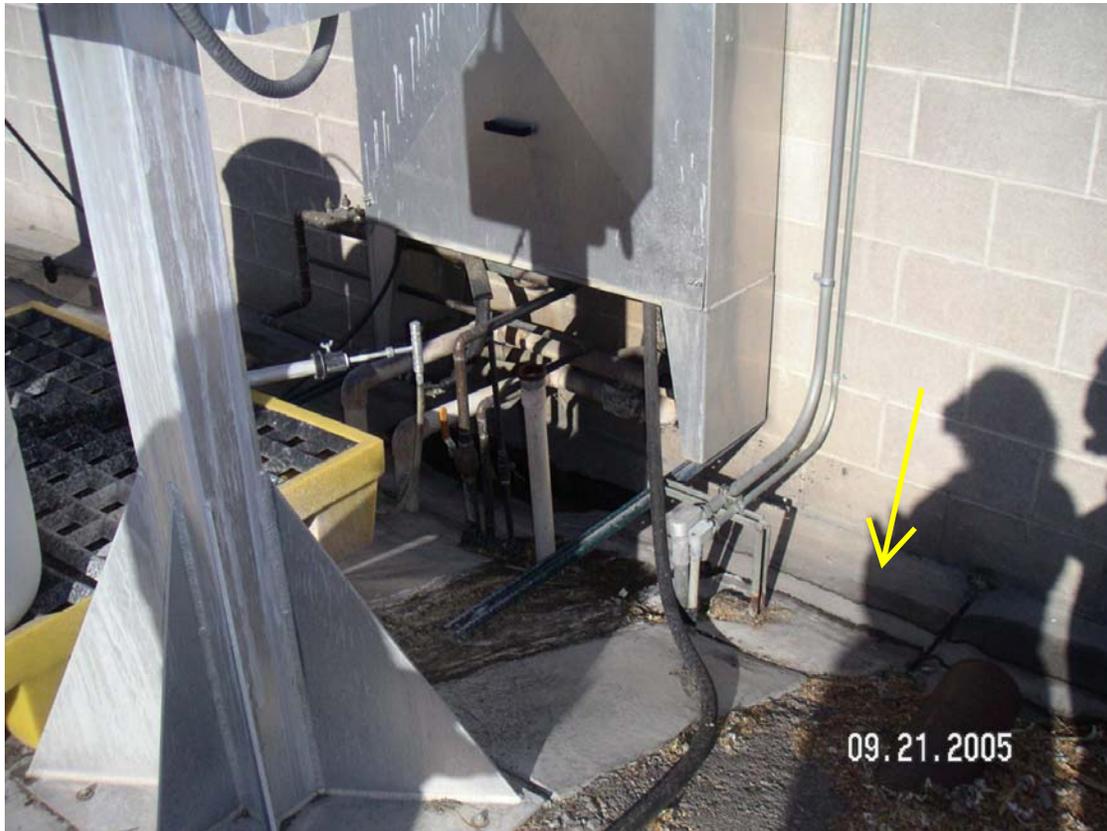


Photo 13. Detergent leaking from wash rack; drain to street in right foreground.

Appendix D
City of North Las Vegas

Appendix D.1
Documentation of Findings

5.1 Adequate Legal Authority (Permit Section 4.2)

The North Las Vegas Municipal Code Section 13.28.120 D. states: “It is unlawful for any person to discharge any waste water in any form, other than storm water, into the storm drains of the City.”

Municipal Code Section 13.28.025 defines storm water as: “uncontaminated water resulting from precipitation; irrigation with drinking water; or clean groundwater.” Uncontaminated water is defined as “any water that is suitable for discharge into the City’s storm drain system.”

The discharges allowed to the MS4 under the Permit include “water line flushing, air conditioning condensate, individual residential car washing, dechlorinated swimming pool discharges, street wash water, and discharges from fire fighting activities.” While these discharges may be considered to be uncontaminated, presumably they could not be discharged to the MS4 since they do not result from “precipitation, irrigation with drinking water, or clean groundwater.”

Violations of the above ordinances are considered misdemeanors. Upon conviction, misdemeanors can result in a fine not to exceed \$1,000, imprisonment in the city jail for a period not to exceed six months, or both fine and imprisonment.

5.2 Public Outreach and Education, and Intergovernmental Coordination (Permit Section 4.5)

North Las Vegas distributes outreach materials developed by CCRFCD relating to used oil disposal at civic events sponsored by North Las Vegas. North Las Vegas completed a project to place medallions on all storm sewer inlets. The medallions identify that the inlet goes to Lake Mead and feature a public outreach character (a fish named Skip) with the words “Don’t Pollute.” North Las Vegas considered using volunteers to place the medallions, but had safety concerns because of the need to be in close proximity to traffic. As a result, North Las Vegas staff placed all of the medallions.

North Las Vegas distributed brochures to advise residential users not to discharge cooking grease down sink drains, prior to the Thanksgiving day holiday. North Las Vegas also worked with local Albertson’s supermarkets to establish a program where cooking oil purchased to deep fry turkeys on Thanksgiving could be returned to the store for proper disposal.

5.3 Best Management Practices (Permit Section 4.6)

North Las Vegas has a street sweeping program for streets, municipal parking areas, and parks. The goal is to sweep all streets every two weeks, but the goal is currently not being met. North Las Vegas owns six misting type street sweepers. Two new dry sweepers arrived during the week the audit was conducted. Four additional dry sweepers are on order. North Las Vegas is currently hiring six new sweeper operators to operate the new equipment. Current practice is to

sweep around parked cars. North Las Vegas plans to pilot test a program to put no parking signs on targeted streets. North Las Vegas will then measure citizen compliance. In some areas, trees obstruct sweeper access. When the trees are on private property, they ask the owners to trim them, or North Las Vegas trims the trees and can bill the property owners. North Las Vegas trims trees on public property and will not seek reimbursement for trimming trees in low income areas. North Las Vegas tracks, lane miles, curb miles, and water used in street sweeping.

North Las Vegas requires its street milling contractors to use a sweeper to remove dust from milling operations.

As of June 2005, North Las Vegas had 1,250 catch basins. North Las Vegas tracks catch basin cleaning by date, location, basin dimensions, depth before and after cleaning, and the quantity of debris removed. Reportedly, 35 basins were cleaned in the past eight months. A new vacuum truck is on order. When the new vacuum truck is received, North Las Vegas will develop a formal cleaning schedule. A review of records indicate that the quantity of debris removed varies from nearly full to nearly empty.

The North Las Vegas Parks Department has written procedures that cover the use of pesticides, herbicides, and fertilizers (PHF). All applicators are state certified. Procedures require that all broadcast materials that fall on paved areas must be blown back onto the grass. The Parks Maintenance Supervisor, reported that through the use of these procedures, the use of PHF has decreased over time. Since June 2005, herbicides have been applied to about 50 acres of park area. The Parks Department tracks the chemical used, area applied, temperature, and wind speed and direction.

The North Las Vegas Public Works Department is responsible for PHF use on North Las Vegas streets. The Acting Manager of Roadway Operations reported that only a minimal amount of herbicides are used. Vegetation control is normally accomplished through lack of irrigation, rather than herbicide use.

5.4 Illicit Discharge and Detection (Permit Section 4.7)

North Las Vegas does most maintenance on the channels but may contract out some maintenance work. As part of the wash inspection, the inspector looks for buckets, containers, drums, pallets, and other materials in the wash right-of-way that may be a source of contamination.

Illicit discharge complaints from citizens most commonly go to the County Health Department through a phone number provided in public outreach materials. The North Las Vegas Utilities Department conducted 68 illicit discharge investigations last year, and seven investigations since July 1, 2005. The Utilities Department keeps excellent records, including photographs, of the investigations where it has the lead role. The Fire Department keeps separate records where it is the lead organization, and presumably Municipal Code Enforcement does the same. North Las

Vegas does not consolidate the reports into a city-wide record. Illicit discharge investigations are not reported to the CCRFCD.

If cleanup is required as part of an illicit discharge response, North Las Vegas will try to convince the responsible party to directly hire a cleanup firm and submit receipts as proof of proper cleanup. If the responsible party refuses, or North Las Vegas will hire a cleanup firm and bill the responsible party for the cost plus the cost of supervising the cleanup. If no responsible party can be found (e.g., if a drum containing chemicals is discovered), North Las Vegas will pay a cleanup firm to remove and dispose the material as needed.

5.5 Industrial Facility Monitoring and Control (Permit Section 4.8)

North Las Vegas issues permits to all non-residential facilities that discharge wastewater to the North Las Vegas wastewater collection system. These permits fall into three categories:

- Category I facilities generally include facilities subject to Categorical Pretreatment Standards and facilities that discharge more than 25,000 gallons per day. These facilities are inspected at least twice per year.
- Class II facilities generally include all other industrial or commercial facilities required to have a permit to discharge to the North Las Vegas wastewater collection system, except for facilities required to have a Fats, Oil, and Grease (FOG) Permit. North Las Vegas tries to inspect Class II facilities at least once per year.
- FOG Permits are issued to food service facilities that are required to provide a trap for sand, grease, and oil. North Las Vegas tries to inspect each of these facilities at least once per year.

5.6 Construction Site BMP Program (Permit Section 4.9)

When North Las Vegas contracts for a capital improvement project (CIP), it requires the contractor to obtain permit coverage from the State, but does not have any other storm water requirements. Copies of all permits obtained, including a NDEP Permit, are required to be submitted before work can begin.

Appendix D.2
Municipal Facility
Inspection

**Municipal Facility (Municipal Yard)
Inspection**

9/21/05

1:30 PM - 2:00 PM

Weather: warm and sunny

Mr. Bill Hahn, SAIC, and Mr. Chad Schoop, NDEP, observed Mr. Thomas Rura, North Las Vegas Pretreatment Supervisor, conduct an inspection of the North Las Vegas Municipal Yard at the Ft. Sumpter Street Annex. The Municipal Yard consists of a large building where all vehicle maintenance is done and includes the municipal building for the Public Works Department. The Municipal Yard is divided into separate areas for maintenance, the police impound yard, the Roads Department, Street Lighting Department, and Parks Department. Smaller storage and office buildings are located in the Parks and Street Lighting areas. Mr. Rura was directed by the audit team to conduct a typical inspection of the site.

Due to a problem with the audit team's camera, no photographs were taken during this inspection.

Observations

1. The Municipal Yard is considered to be an industrial facility by North Las Vegas and is inspected similar to any other industrial facility.
2. Mr. Rura inspected the interior of the maintenance building and the vehicle storage area behind the building.
3. He inspected 55-gallon drums and other storage containers and tanks to determine if they had secondary containment.
4. He walked through the remaining areas of the yard looking for evidence of leaks or discharges.
5. He advised the supervisors of the various areas of his findings as the inspection proceeded.
6. Mr. Rura noted that all drums and tanks had proper secondary containment.
7. He noted that the external vehicle storage area behind the maintenance building was clean with no evidence of oil drips or spills.
8. He noted that some leakage was occurring from a truck-mounted tank parked in the Street Lighting area. A drip pan which had been placed under the drip was full. Staining on the pavement indicated that the pan may have overflowed in the past.
9. He noted an oil leak under a truck parked outside the Parks Department office. He called the leak to the attention of the Mr. Brett Miller, Parks Maintenance Supervisor. Some workers were sent to spread sand on the spill and dry sweep the adsorbed oil.

Findings

Mr. Rura took notes, but did not take photographs during the inspection.

Appendix D.3
Municipal Structure
Inspection and Photographs

**Municipal Structure (Channel A Wash)
Inspection and Photographs**

9/20/05

1:30 PM - 2:30 PM

Weather: warm and sunny

Mr. Bill Hahn, SAIC; Mr. Andrew Sallach, EPA Region 9; and Mr. Chad Schoop, NDEP, observed Mr. Thomas Rura, North Las Vegas Pretreatment Supervisor, conduct a partial inspection of the Channel A Wash located between I-15 and Losse Road in North Las Vegas. This portion of the wash is in a commercial area. A paved apron along the wash passes behind a number of commercial activities. The wash is fenced, and access is obtained through a gate in the fence. Mr. Rura was directed by the audit team to conduct a typical inspection of the wash. He advised the audit team that he normally conducts the inspection from his City-provided utility truck.

Observations

1. Mr. Rura does the following: looks for any debris or materials in the wash that could cause an obstruction to flow in the wash; looks for drums or other containers along the area adjacent to the wash that could be a source of contamination; and checks the yards of the commercial facilities along the wash for materials that could be discharged into the wash.
2. Mr. Rura pointed out that homeless people live under an overpass across the wash. He noted that sometimes furniture and other large items they accumulate must be removed by the City to prevent obstruction of the wash. The City does not normally attempt to compel the homeless people to leave.
3. He pointed out several channels with riprap where storm water enters the channel. Although the riprap seemed to be clogged with sediment, Mr. Rura indicated they only do investigations of the channels if there appears to be evidence of chemical contamination.

Findings

Mr. Rura did not note several areas where soil erosion appears to be entering the wash. In response to a question, he stated that soil erosion was not identified or addressed as part of the wash walks.



Photo 1. View across Channel A wash.



Photo 2. Loss Road overpass across the wash. Las Vegas Cogeneration facility is in the background.



Photo 3. Homeless individuals living between Losse overpass roadway and upper apron of the wash. Bicycles, shopping carts, and debris in the wash are likely from these individuals.



Photo 4. Riprap channel between commercial properties. Note lower end of channel appears to be clogged with sediment.



Photo 5. Portion of wash adjacent to the channel in Photo 4 where sediment appears to have entered the wash from the channel.



Photo 6. Area where soil erosion on the bank to the left of the wash appears to have entered the wash.

Appendix D.4
Industrial Facilities
Inspections and Photographs

**Industrial Facility (Las Vegas Cogeneration)
Inspection and Photographs**

9/20/05

2:40 PM - 3:15 PM

Weather: warm and sunny

Mr. Bill Hahn, SAIC; Mr. Andrew Sallach, EPA Region 9; and Mr. Chad Schoop, NDEP, observed Mr. Thomas Rura, North Las Vegas Pretreatment Supervisor, conduct an inspection of the Las Vegas Cogeneration facility. Las Vegas Cogeneration is a Class 1 facility, and thus is inspected four times per year. Mr. Jeff Pangle, Operations and Maintenance Specialist for Las Vegas Cogeneration, represented the facility. Mr. Rura was directed by the audit team to conduct a typical inspection of the site.

Observations

1. Upon arrival, Mr. Rura identified himself and advised the facility he was conducting a quarterly inspection.
2. Mr. Rura inspected 55-gallon drums and other storage containers and tanks to determine if they had secondary containment.
3. He walked through the facility looking for evidence of leaks or discharges.
4. He verified that valves from containment around larger tanks were closed.
5. He advised the plant representative of his findings as the inspection proceeded.
6. Mr. Rura noted that all drums and tanks had proper secondary containment.
7. He noted that during a turbine change-out the previous weekend, some oil had dripped on the pavement. Absorbent had been applied to the spilled oil. He advised the facility to clean up the oil/adsorbent material.
8. He observed oil stains on the rock landscaping and on the side of an electrical cabinet located outside the secondary containment of turbine number one. He advised the facility to remove the rock landscaping and clean up the oil on the side of the cabinet.

Findings

1. Mr. Rura did not note an area next to a building where a roof downspout was causing soil erosion that appeared to be going directly to a yard drain.



Photo 1. Inspector did not note evidence of soil erosion at roof drain discharge (to the right of the doorway) that appeared to be going directly to the area storm inlet.



Photo 2. The inspector did note that all containers five gallons or larger have been provided with secondary containment as required by local ordinance.



Photo 3. The inspector noted the presence of oil stains (center photo) on the rock landscaping and an electrical cabinet next to turbine number one.



Photo 4. The inspector did note some oil spills on the pavement where adsorbent had been applied. He advised the facility to sweep up the adsorbent.

**Industrial Facility (McCandless International)
Inspection and Photographs**

9/20/05

3:30 PM - 4:30 PM

Weather: warm and sunny

Mr. Bill Hahn, SAIC; Mr. Andrew Sallach, EPA Region 9; Mr. Chad Schoop, NDEP; and Mr. Thomas Rura, North Las Vegas Pretreatment Supervisor, observed Mr. Robert Shipton, a North Las Vegas inspector conduct an inspection of the McCandless International facility. McCandless International does maintenance on trucks and busses. They also paint vehicles at the site. Vehicle maintenance and painting are done in enclosed areas. Vehicles are stored outside the buildings on a large, paved parking area. Mr. Frank Kusunic, Secretary-Treasurer, and Mr. Chris McCandless represented McCandless International. Mr. Shipton was directed by the audit team to conduct a typical inspection of the site.

Observations

1. Mr. Shipton entered the facility, identified himself, and discussed the purpose of his inspection. The inspection addressed pretreatment, hazardous waste storage and disposal, and storm water requirements.
2. He reviewed and obtained copies of invoices for the disposal of used oil, used anti-freeze, oil/water separator pumping, and waste paint materials.
3. He conducted a walk through of all portions of the facility including paved parking areas.
4. He observed a runoff channel at the rear of the property that conveys storm water runoff to the adjacent wash.
5. Mr. Shipton observed some maintenance activities were being conducted outside of the maintenance building. He advised the facility staff that outside maintenance was not permitted.
6. He observed the oil/water separator inside the garage and had it opened for inspection. It appeared satisfactory. It is reportedly pumped bi-monthly.
7. He noted some oil spills on the exterior paved area underneath vehicles being stored. He advised the facility to immediately take action to clean up the spilled oil and place drip pans under the vehicles after completing the cleanup.
8. He noted most drums at the site had secondary containment, but noted two drums that did not. He advised the facility staff of the secondary containment requirement.
9. He learned that the facility planned to extend the enclosed painting area on the east side of the painting building. He advised the facility staff they would have to extend the concrete apron on that side of the building and extend the curbing.
10. He indicated that he would do a re-inspection of the facility in one week to make sure all required actions were completed.

Findings

None.



Photo 1. Oil leaking from truck stored in the parking area.



Photo 2. Oil leaking under tow truck stored in the parking area.



Photo 3. Apparent leakage under bus being maintained outside of shop area.

Appendix D.5
Construction Sites
Inspections and Photographs

**Private Construction (Northstar)
Inspection and Photographs**

9/22/05

1:00 PM - 2:00 PM

Weather: warm and sunny

Mr. Bill Hahn, SAIC, and Mr. Andrew Sallach, EPA Region 9, observed Mr. Chris Melo, Clark County Department of Air Quality and Environmental Management (CCDAQEM) inspector conduct an inspection of the Northstar construction site. In addition to construction site inspections, Mr. Melo also inspects dry cleaners, gas stations, and paint spray facilities.

Prior to the inspection, Mr Melo was asked how sites are selected for inspection. He responded that each day on his arrival at the office, he checks current air monitoring data. He tends to do inspections in certain "hot spots" where there have been air quality problems in the past. Priority is also given to sites where there have been citizen complaints. He did not recall ever having received a citizen complaint regarding a storm water issue. Mr. Melo was directed by the audit team to conduct a typical inspection of the site.

Observations

1. Upon arriving near the site, Mr. Melo observed operations for several minutes before actually entering the site and identifying himself.
2. In driving across the site, Mr. Melo observed the condition of the trackout barrier between the paved and unpaved areas of the site. Little evidence of trackout was observed.
3. Mr. Melo looked across the disturbed areas to determine if sufficient water spraying is being done to suppress dust.
4. Mr. Melo parked his vehicle next to the wash and observed both the wash and the construction area adjacent to the wash.
5. Mr. Melo advised the site superintendent of his observations.
6. Mr. Melo gave the site superintendent a copy of a brochure that describes the Nevada General Permit Program, the Las Vegas Valley Municipal Separate Storm Sewer Protection Program, and some general information on Best Management Practices (BMPs) for construction sites.
7. Mr. Melo noticed an area adjacent to the wash in which dirt was mounded next to the wash. The area also had some plastic bottles and other debris. He advised the site superintendent that additional housekeeping was needed in the area. When asked by the audit team if he was concerned about the possibility of soil from the pile being washed into the concrete wash, he replied "that was what he meant by housekeeping." The site superintendent agreed to install some silt fence in the area the following day.
8. The site superintendent indicated that a Storm Water Pollution Prevention Plan (SWPPP) had been prepared for the site and asked if Mr. Melo wanted to review it. Mr. Melo replied that he did not review SWPPPs as part of his inspections.
9. Mr. Melo noted the presence of storm water controls on the inlets of the paved streets and that a sweeper was in use at the time of the inspection.

Findings

1. Mr. Melo did not comment on the presence of sediment in the wash next to the construction site.
2. Mr. Melo did not comment on the placement of a portable toilet next to a paved roadway. If knocked over by a construction vehicle, it would flow directly to a storm inlet.
3. The inspection form used asks if BMPs are in place. It is Mr. Melo's practice to check the "yes" box if any BMPs are in place, even if they are incomplete or do not cover all areas. Thus, he appears to be answering the question: Are any BMPs in place?
4. Mr. Melo indicated that he had received four hours of training in storm water control and that the subject had come up in at least two inspector meetings.
5. The audit team reviewed the SWPPP prepared for the site. It appeared complete, current, and well organized.



Photo 1. Dirt and debris piled adjacent to wash at the construction site.



Photo 2. Wash adjacent to the construction site. Wash appears to contain sediment that may have come from the site.



Photo 3. Note portable toilet (blue) in photo right center located immediately adjacent to the paved road upslope of inlets. Note also crush rock for trackout control located in front of pickup truck at photo right.

**Private Construction (Commerce Village)
Inspection and Photographs**

9/22/05

2:15 PM - 3:00 PM

Weather: warm and sunny

Mr. Bill Hahn, SAIC; Mr. Andrew Sallach, EPA Region 9; and Mr. Chad Schoop, NDEP, observed Mr. Chris Melo, Clark County Department of Air Quality and Environmental Management (CCDAQEM) inspector, conduct an inspection of the Commerce Village construction site.

The Commerce Village site had been inspected by another CCDAQEM inspector on September 8, 2005. Significant problems were found at the time. Mr. Melo provided the audit team with copies of the inspection report prepared for that inspection and the photos taken at that time. The headings on the inspection report were filled out, but no check marks were printed on the checklist. Mr. Melo could not explain why the boxes were not checked. He indicated that the inspector who did the previous inspection no longer worked for CCDAQEM. He said that the photographs from the inspection had been forwarded to Mr. Kevin Eubanks at the Clark County Flood Control District. Mr. Melo was directed by the audit team to conduct a typical inspection of the site.

Observations

1. Upon arriving near the site, Mr. Melo observed the wash.
2. He checked the storm water inlets installed in the paved streets of the project and inspected the entrance to the site.
3. He gave the site superintendent a copy of the storm water brochure for construction sites and advised the site superintendent that he should take a course to become more familiar with the requirements of the construction general storm water permit.
4. He noted that water and sediment were entering the wash from the storm drain that serves the paved roads of the site.
5. He noted that piles of dirt along the curb line were extended into the street. The street had recently been washed down, and sediment was entering a storm inlet through the sand bags intended for inlet protection. Sediment could also be observed entering a manhole on the street side of the inlet through the pick hole in the manhole cover.
6. He advised the site superintendent that the site was a mess and not in compliance with the storm water requirements. He indicated the dirt that extended past the curb had to be removed.
7. He noted that another inlet at the site was choked with sediment and was ineffective.
8. He noted the absence of trackout controls at one site entrance.
9. Mr. Melo repeatedly told the site superintendent that the streets needed to be swept with a dry sweeper. The site superintendent stated several times that he was trying to comply with the requirements and thought he had made significant improvements since the September 8th inspection. He repeatedly stated before the end of the day "he would get a fire hose and clean dirt from the streets." It appeared to the audit team that the site superintendent simply did not understand the difference between dust control and sediment control, despite the best efforts of Mr. Melo. It seemed clear that the sediment entering the wash was the result of earlier efforts at street washing that day, and that the superintendent believed additional street washing (presumably to the storm inlets) was appropriate.

Findings

1. Mr. Melo did not note the presence of a portable toilet in the street not far from an inlet. If knocked over by a construction vehicle, it would flow directly to the storm inlet.
2. He did not note that several sand bags, which were placed at regular intervals along the curb apparently to catch sediment, were moved back several inches from the curb providing a gap for water to pass through, making them ineffective.



Photo 1. Water and sediment from the construction site entering the wash.



Photo 2. Storm inlet at the site. Sediment is also entering the storm sewer through the pick hole in the manhole in front of the inlet. Hose in the photo is the fire hose the site had been using to clean the street. Note poor condition of sand bags used for inlet protection and dirt extending past curb line.



Photo 3. Different storm inlet at the site. Separation between sand bag at the right and curb allows sediment to enter the inlet.



Photo 4. Portable toilet placed where spillage would go directly to storm inlet. Storm inlet is left center photo, at the end of the sidewalk to the cul-de-sac.



Photo 5. Sediment in the street. Moisture indicates street was washed earlier in the day. Note sand bag, center rear of photo, pulled back from the curb.



Photo 6. Absence of trackout controls at a site entrance. Note dirt extended past curb line into the street.

Appendix D.6
Illicit Discharge Response
Inspection and Photographs

Response to Illicit Discharge Complaint Inspection and Photographs

9/21/05

11:30 AM - 12:30 PM

Weather: warm and sunny

Mr. Bill Hahn, SAIC, and Mr. Chad Schoop, NDEP, accompanied Mr. Thomas Rura, North Las Vegas Pretreatment Supervisor, to observe the City's response to an illicit discharge complaint received from a citizen. The complaint reported an open air spray painting operation taking place in a parking lot on Delhi Avenue in North Las Vegas, owned by the Las Vegas Paving Company. Mr. Chris Jackson, North Las Vegas Fire Department, also responded. Mr. Robert Shipton, North Las Vegas Utilities Department inspector who reports to Mr. Rura, arrived at the site approximately 20 minutes later.

Open air spray painting is not permitted by North Las Vegas. The complaint was received from a neighboring business. Upon arrival at the site, it was determined that five individuals were conducting cleaning and spray painting of several pieces of road paving equipment in an unpaved parking area adjacent to a concrete ready-mix yard.

Observations

1. Upon arrival at the site, Mr. Rura and Mr. Jackson immediately directed that all activities be halted.
2. Discussions with the individuals revealed that they worked for a Texas company that had been hired by Las Vegas Paving to do maintenance on the equipment. The activity had been going on for the previous two weeks.
3. Mr. Rura determined that the individuals did not have a business license to do work in North Las Vegas.
4. Mr. Rura called Las Vegas Paving and advised them he had found an illegal activity on the property and ordered them to send a representative to the site.
5. When the Las Vegas Paving environmental coordinator arrived, Mr. Rura advised him and the senior person from the subcontractor, that both companies would be cited for storm water violations. In addition, the subcontractor would be cited for failing to have a business license.
6. Prior to leaving the site, Las Vegas Paving had arranged to have a waste hauler immediately come to the site to pump out the wash water pit. Las Vegas Paving also arranged for a waste remediation firm to come to the site the following day and remove all contaminated soil. All contaminated soil was to be taken to a hazardous waste treatment operation.
7. Mr. Rura left Mr. Shipton in charge at the site to observe the cleanup operations.

Findings

1. The North Las Vegas Fire Department initially received the citizen complaint. Mr. Jackson immediately contacted Mr. Rura. Both responded to the site. Their interactions were coordinated and indicated they had both responded to this type of complaint before.
2. A construction roller at the site had been masked in preparation for painting. The trailers at the site contained paint, spray painting equipment, and paint solvents.
3. Although it was evident that spray painting operations had been going on at the site, there was no actual spray painting occurring when the inspectors arrived. Because of this, Mr. Rura

became the lead responder for the City. If active spray painting had been observed, the Fire Department would have also cited the individuals for violation of the City Fire Code.

4. A backhoe at the site was being sand blasted when the inspectors arrived. There was sand blasting grit on the ground in the area and several pallets of sand blasting grit.

5. A pit had been dug at the site to receive wash water from an equipment cleaning operation that had been set up. The pit contained contaminated, oily water from the cleaning operation. Although a plastic liner had been placed in the pit, the area where equipment was being cleaned was not lined. The soil in this area was heavily stained with oil.

6. Contaminated water from the site was entering an inlet at the site. The discharge from this inlet went to Dehli Avenue, where it entered a storm sewer inlet.



Photo 1. Open air sand blasting activity at the site. Dark material around the backhoe being sand blasted is spent sand blast grit. White bags on pallets at photo right are additional unused grit. No containment was provided around the area.



Photo 2. Roller masked for open air spray painting operation.



Photo 3. Temporary pit dug to contain wash water from equipment cleaning operation. Note floating oil on the surface of the water.



Photo 4. Paving machine being cleaned with wash water discharged to the pit shown in Photo 3. Note oil stains on the ground in front of and around the machine.



Photo 5. Storm inlet located behind the pile of dirt shown in Photos 3 and 4. Note contaminated runoff from the site entering the inlet.

Appendix E
City of Henderson

Appendix E.1
Documentation of Findings

6.1 Adequate Legal Authority (Permit Section 4.2)

In addition to prohibiting specific wastes from being discharged into the wastewater system, Henderson Municipal Code Section 13.16.020.A. (the pretreatment ordinance) was modified to also prohibit the same wastes from being discharged into the storm water system or the waters of the state.

Henderson Municipal Code Section 13.16.020.B. states “No discharge shall be made to the storm drain system or the waters of the state that would cause a violation of the NPDES stormwater permit.”

Henderson Municipal Code Section 5.16.050 states the following:

“It is unlawful for any person to throw or deposit, or cause to be thrown or deposited, in any street, alley, gutter, highway, drainage channel, or wash within the limits of the city any dirt, rubbish, garbage, or dead animal.

No person shall throw or cause to be thrown or deposited any rubbish, garbage, dirt, ashes or other matter whatsoever upon the lot or premises of another, within the limits of the city; nor shall any person place or deposit or cause to be placed or deposited any rubbish, garbage, dirt, ashes or other matter whatsoever in such a manner or permit to remain in such condition on his premises so that the same may be blown or carried over to other public or private property by any means whatsoever.”

Henderson Municipal Code Section 7.04.130.B. requires pet owners or guardians to promptly and voluntarily remove animal waste from any sidewalk of any public street or public park, any real property under the control of or in the possession of any other person, or any place to which the public has normal access or right of ingress or egress. Several piles of pet waste were observed during the channel inspection of Upper Pittman Wash, including Project Green.

Violations of the above ordinances are considered misdemeanors. Upon conviction, misdemeanors can result in a fine not to exceed \$1,000, imprisonment in the City jail for a period not to exceed six months, or both fine and imprisonment.

Henderson does not have an ordinance that authorizes inspectors to conduct storm water inspections at construction sites. Although Henderson Municipal Code Section 13.60.040 provides the pretreatment inspectors with “ready access at all reasonable times to all parts of the premises for the purposes of inspection, sampling, record review and copying where performance data would be found, spill prevention, or any other duties needed to complete compliance monitoring,” it only applies to “premises where wastewater is created, treated or discharged.”

6.2 Public Outreach and Education, and Intergovernmental Coordination (Permit Section 4.5)

Project Green was organized by a private steering committee with grant funding and advice from Henderson. Volunteers, including Boy Scouts and church groups, removed invasive tamarisk, cleaned up trash, planted cottonwood and mesquite trees, and installed an irrigation system which will be used temporarily until the trees become established. A sign next to the wash indicates that “help in keeping the wash clean and natural is requested and appreciated.” Photos of Project Green are presented in Appendix E.3.

6.4 Illicit Discharge and Detection (Permit Section 4.7)

The audit team accompanied Henderson staff on a channel inspection of Project Green, located in the Upper Pittman Wash; additional sections of the Upper Pittman Wash; and Gibson Channel. Detailed observations and photographs are presented in Appendix E.3.

6.5 Industrial Facility Monitoring and Control (Permit Section 4.8)

The audit team visited a maintenance facility and a parks and recreations facility. The sites were generally well-maintained and only one storm water issue was observed (see Appendix E.2).

6.6 Construction Site BMP Program (Permit Section 4.9)

Henderson will receive \$3,000 from CCRFCD to conduct 300 construction site inspections. Although Henderson receives funding from CCRFCD for its construction site inspection program, Henderson inspectors do not need to report their findings to CCRFCD before enforcement actions can be taken.

The audit team observed inspections of a Henderson road repair project and a residential subdivision construction site. Detailed observations associated with these site visits are presented in Appendix E.5.

Appendix E.2
Municipal Facilities
Inspections and Photographs

**Municipal Facility (Gibson Road Maintenance Facility)
Inspection and Photographs**

9/22/2005 1:25 PM - 1:45 PM Weather: sunny and hot

Ms. Jennifer Legge, SAIC, visited the Gibson Road Maintenance Facility. Henderson does not conduct regular inspections of its municipal facilities. Mr. Al Forbragd, Mr. Albert Jankowiak, Mr. Joe Rajchel, and Mr. Scott Wade accompanied Ms. Legge.

Observations

1. Two 55-gallon drums full of used gasoline and two smaller buckets were observed outside of the garage. The containers did not have any secondary containment.
2. Mr. Rajchel noted the area where cars are washed has a drain that flows to the sanitary sewer.
3. The parking lot was fairly clean. Mr. Forbragd said that it is swept regularly.
4. The parking lot's drain to the street was protected with sandbags that had prevented debris and sediment from leaving the site.

Findings

1. Self-inspections of the municipal facilities are not occurring.
2. Containers of used oil were observed outside without secondary containment.
3. The site was clean and well-maintained.



Photo 1. Two 55-gallon drums of used gasoline and two smaller buckets located outside the garage and without secondary containment.



Photo 2. Car wash area. Drain flows to sanitary sewer.



Photo 3. Drain to street in corner of parking lot.

**Municipal Facility (Parks and Recreation Facility)
Inspection and Photographs**

9/22/2005 2:00 PM - 2:15 PM Weather: sunny and hot

Ms. Jennifer Legge, SAIC, visited the Parks and Recreations Facility on Van Wagenen Street. Henderson does not conduct regular inspections of its municipal facilities. Mr. Albert Jankowiak and Mr. Joe Novoselek accompanied Ms. Legge.

Observations

1. Fertilizer was stored outdoors. One package was torn.
2. Mr. Novoselek noted the area where equipment is washed. The area is equipped with a water recycler.
3. A Parks and Recreations staff person was observed rinsing a vehicle in the yard. Mr. Novoselek noted that the water recycler is easily clogged with debris, so equipment needs to be rinsed before washing it in the designated area. The vehicle was washed in a level area. Puddling, but no runoff, was observed.
4. The two sediment stockpiles were located upgrade of the street. Evidence of sediment runoff was seen in the gravel lot.

Findings

1. Self-inspections of the municipal facilities are not occurring.
2. The site was clean and well-maintained.



Photo 1. Fertilizer, note tear in package.



Photo 2. Equipment wash area with water recycling unit.



Photo 3. Vehicle that was being rinsed during the site visit. Note puddles of water.



Photo 4. Sediment stockpiles. Grade is downhill toward the street.

Appendix E.3
Municipal Structures
Inspection and Photographs

Municipal Structures (Project Green, Upper Pittman Wash, and Gibson Channel) Inspection and Photographs

9/21/2005 11:10 AM - 12:45 PM Weather: sunny and hot

Ms. Jennifer Legge, SAIC, and Mr. Andrew Sallach, EPA Region 9, observed Mr. Al Forbragd, Maintenance Coordinator, Henderson Public Works Support Services, and Mr. Albert Jankowiak, Project Engineer II, Henderson Public Works Land Development, conduct a channel inspection of Project Green, Upper Pittman Wash, and Gibson Channel. The audit team directed Mr. Forbragd and Mr. Jankowiak to conduct a typical inspection of the channels.

Observations

1. The channel inspection began at Project Green, where volunteers removed the invasive tamarisk, cleaned up trash, planted cottonwood and mesquite trees, and installed an irrigation system which will be used temporarily until the trees become established. Most of the trees planted were becoming established.
2. Debris and piles of tamarisk were observed within Project Green. Mr. Forbragd noted that his staff would soon be collecting the piles of tamarisk, which Henderson will mulch and use for landscaping.
3. Several piles of pet waste were observed within Project Green. The "Do your doody!" bag holder located on the Project Green trail was empty.
4. Mr. Forbragd noted that during the channel inspection, he typically checks to ensure that the outfalls are not blocked. He noted that the vegetation at the outfall was acceptable and would prevent erosion.
5. The Henderson Parks and Recreation Department dirt pile was observed on the street adjacent to Project Green. Trackout was visible to the inlet, which flows to the outlet that discharges into Project Green.
6. The channel inspection continued downstream of Project Green in the Upper Pittman Wash.
7. The riprap along Upper Pittman Wash marks the location of a recent sewer line break caused by erosion. Henderson has conducted a hazard study to identify sewer lines susceptible to break. Repairs are planned for the next fiscal year.
8. Mr. Forbragd and Mr. Jankowiak said that the minor discharge visible from an outfall across the Upper Pittman Wash was nuisance flow.
9. Mr. Forbragd and Mr. Jankowiak noticed the palm fronds that had been dumped into the wash. Houses with palm trees are visible behind the wall.
10. The confluence of Sandwedge Channel, Union Pacific Railroad Channel, and Pittman Wash was observed next. Flow, thought to be from groundwater, was observed at the confluence. Mr. Forbragd and Mr. Jankowiak pointed out the debris in the wash. During a complete channel inspection, Mr. Forbragd and Mr. Jankowiak would drive along the Sandwedge Channel. The concrete-lined channels are occasionally swept with a street sweeper.
11. The channel inspection continued downstream to the area near the Arroyo Grande Bridge where sediment is known to deposit. Mr. Forbragd noted the two areas where sediment is deposited. His staff collected the sediment into a pile which is scheduled to be hauled from the channel.
12. Mr. Forbragd noted another outfall which discharges groundwater.
13. The channel is adjacent to a baseball field which is also used as a detention basin.

14. Mr. Jankowiak continued to drive down the Upper Pittman Wash concrete-lined channel. The constant flow was said to be groundwater. Mr. Forbragd said that the maintenance staff sweeps the channel every other month. Debris and moss are hand-swept to the channel sides and removed with a bobcat.
15. Pet waste was observed in the channel. It appeared that the waste was thrown over the wall from a residential property. Mr. Jankowiak said that he would call the Clark County Health District because a letter from the Health District seems to be more effective in gaining compliance than the letters from Henderson's Code Enforcement Department.
16. Mr. Jankowiak noted that a box was dumped in the channel.
17. The channel inspectors then traveled to Gibson Channel. An industrial storage area and a residential construction site were adjacent to the channel. The construction site had no controls along the channel to prevent the dirt from washing into the channel.
18. After leaving the Gibson Channel, Mr. Sallach observed discharge from B. Witt parking lot and other industrial and commercial properties in the area. Mr. Jankowiak and Mr. Forbragd may not have noticed or investigated these discharges without prompting from Mr. Sallach. Mr. Forbragd also asked if it was acceptable for a local landscaping company to wash its sweeper into the street. Mr. Jankowiak said that it was not acceptable and that enforcement actions would be taken.

Findings

1. Several piles of pet waste were observed within Project Green, and the "Do your doody!" bag holder located on the Project Green trail was empty.
2. Trackout was visible from the Henderson Parks and Recreation Department dirt pile on the street adjacent to Project Green to an inlet that flows to the outlet that discharges into Project Green.
3. The inspectors noted a few incidents of illegal dumping and debris in the channel, but assumed that flow in the channel was nuisance or groundwater flow. Flow is not sampled to verify that it is not polluted. Outfalls are primarily inspected for blockages, not illicit discharges.
4. An industrial storage area and a residential construction site adjacent to Gibson Channel were not using Best Management Practices (BMPs) to minimize the potential for pollution to runoff into the channel.
5. Mr. Forbragd did not seem to be aware of what constituted an illicit discharge.



Photo 1. Sign along Project Green.



Photo 2. Project Green.



Photo 3. Project Green, elevated manhole in photo center.



Photo 4. Invasive tamarisk.



Photo 5. Tamarisk and debris in Project Green area of Pittman Wash.



Photo 6. Pet waste (photo center towards the bottom) in Project Green area of Pittman Wash.



Photo 7. Cottonwood and mesquite trees with tamarisk stumps (photo right); outfall to wash (photo left).



Photo 8. Parks and Recreation Department dirt storage. Trackout visible to inlet, which flows to outfall in Photo 7.



Photo 9. Upper Pittman Wash downstream of Project Green (flows left). Minor flow was visible from the outfall (right, center).



Photo 10. Riprap along Upper Pittman Wash.



Photo 11. Palm fronds dumped in Upper Pittman Wash (photo center).



Photo 12. Bottom of Union Pacific Railroad Channel.



Photo 13. Confluence of Sandwedge Channel, Union Pacific Railroad Channel, and Upper Pittman Wash.



Photo 14. Sediment pile in Pittman Wash.



Photo 15. Location of first sediment deposit.



Photo 16. Location of second sediment deposit.



Photo 17. Outfall that discharges groundwater.



Photo 18. Detention basin/baseball field.



Photo 19. Bottom of channel.



Photo 20. Bottom of channel.



Photo 21. Empty box dumped in channel.



Photo 22. Gibson Channel.



Photo 23. Culvert to Gibson Channel.



Photo 24. Exposed box.



Photo 25. Outfall with flow.



Photo 26. Construction and sediment piles (photo right) adjacent to Gibson Channel (photo left).



Photo 27. Flow from outfall in Photo 25.



Photo 28. Storage along Gibson Channel.



Photo 29. Discharge coming from B.Witt parking lot.



Photo 30. Parking lot source of discharge in Photo 29.

Appendix E.4
Industrial Facilities
Inspections and Photographs

**Industrial Facility (Good Humor)
Inspection**

9/21/2005 2:20 PM - 2:50 PM Weather: sunny and hot

Ms. Jennifer Legge, SAIC, and Mr. Andrew Sallach, EPA Region 9, observed Mr. Matt Thomas and Mr. John Massicotte, Pretreatment Inspectors in the Henderson Department of Utility Services, conduct an industrial storm water inspection of Good Humor. Good Humor is an ice cream confectioner on Henderson's list of SARA Title III Section 313 industries. Mr. Albert Jankowiak, Public Works Land Development, accompanied the audit team. Mr. Scott Bates, Mr. Keith Berta, Mr. Glen Conrad, and Mr. Gary Davis represented Good Humor. The audit team directed Mr. Thomas and Mr. Massicotte to conduct a typical inspection of the site. The inspectors noted that they would typically also conduct a pretreatment inspection. The audit team directed the inspectors to conduct only the storm water portion of the inspection. The audit team did not take any photographs.

Observations

1. Mr. Thomas and Mr. Massicotte conducted an opening conference. They asked if the facility had any spills to the storm system, reviewed the facility's Spill Prevention Control and Countermeasures Plan, and asked for a facility site map that would show the flow of storm water on the site. The site representatives said that storm water would flow overland to the C1 Channel.
2. The inspectors walked around the facility. They looked at 55-gallon drums, which were empty, and noted minor staining on the ground.

Findings

1. The inspectors conducted a thorough storm water inspection of the Good Humor facility. No significant storm water issues were observed.

**Industrial Facility (A-1 Plating)
Inspection and Photographs**

9/21/2005 3:10 PM - 3:40 PM Weather: sunny and hot

Ms. Jennifer Legge, SAIC, and Mr. Andrew Sallach, EPA Region 9, observed Mr. Matt Thomas and Mr. John Massicotte, Pretreatment Inspectors in the Henderson Department of Utility Services, conduct an industrial storm water inspection of A-1 Plating. A-1 Plating is a metal plating facility inspected under the Pretreatment Program. Mr. Albert Jankowiak, Public Works Land Development, accompanied the audit team. Mr. Joe Roth was the representative for A-1 Plating. The audit team directed Mr. Thomas and Mr. Massicotte to conduct a typical inspection of the site. The inspectors noted that they would typically also conduct a pretreatment inspection. The audit team directed the inspectors to conduct only the storm water portion of the inspection.

Observations

1. The inspectors walked through the shop on their way outside. The shop floors were sloped to a drain in the center of the shop that flows to a pit.
2. Mr. Thomas noted the crack in the secondary containment. The facility representative said that the wall was cracked recently and would be repaired.
3. Mr. Massicotte said that a 55-gallon drum on a dolly in the outside work area should be moved.
4. The inspectors noted that the bermed area for storage of chemicals was added after one of their inspections.
5. Mr. Thomas observed an open container and some containers without secondary containment.
6. The inspectors noted that the dumpsters and surrounding area were well-kept.
7. The inspectors asked the facility representative to address the problems noted above. They noted that they prefer to work with owners and do not issue citations unless the owners are non-responsive.

Findings

The inspectors did not note any issues with the fine metal shavings on site.



Photo 1. Crack in secondary containment.



Photo 2. Bermed area for chemical storage.

Appendix E.5
Construction Site Facilities
Inspections and Photographs

**Municipal Construction (Water Street Road Construction)
Inspection**

9/22/2005 11:50 AM - 11:55 AM Weather: sunny and hot

Ms. Jennifer Legge, SAIC, observed Mr. Ryland Ogle, Technical Analyst, conduct a storm water construction site inspection of Water Street Road Construction. The audit team directed Mr. Ogle to conduct a typical inspection of the site. The audit team did not take any photographs.

Observations

1. The first phase of construction at the site was completed, and the second phase was not yet started.
2. Mr. Ogle noted minor debris on the site and said that he would contact the superintendent to tell him that the site needs a final sweeping.

Findings

None.

**Private Construction (Preserve at Boulder Creek II, Woodside Homes)
Inspection and Photographs**

9/22/2005 12:05 PM - 12:30 PM

Weather: sunny and hot

Ms. Jennifer Legge, SAIC, observed Mr. Ryland Ogle, Technical Analyst, conduct a storm water construction site inspection of Preserve at Boulder Creek II, a residential subdivision constructed by Woodside Homes. The audit team directed Mr. Ogle to conduct a typical inspection of the site.

Observations

1. Mr. Ogle noted the debris at the construction site entrance.
2. Mr. Ogle noted that the soil stockpiles had the potential to runoff to the road. He said that he would ask the site superintendent to install a berm.
3. Mr. Ogle noted other construction debris throughout the site.
4. Mr. Ogle said that the site would be failed and a Notice of Violation (NOV) sent to the developer to install the berm and clean up the debris.

Findings

1. Mr. Ogle walked the entire site and noted minor storm water issues.



Photo 1. Debris at construction site entrance.



Photo 2. Sediment stockpiles. Note the ground slopes towards the road in the background.



Photo 3. Construction debris.