ANNUAL
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
REPORT

NPDES STORMWATER PERMIT
NUMBER ALS000002
Saraland, Alabama
Volkert Job Number 660115.10

Prepared for:

The City of Saraland
Mayor Howard Rubenstein
716 Highway 43
Saraland, Alabama 36571

December 2011

Prepared by:

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1.0 CERTIFICATION AND INTRODUCTION

1.1 Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The Honorable Howard Rubenstein

Mayor, City of Saraland

	12/22/2011
Signature	Date

1.2 List of Contacts

The following individuals may be contacted to address questions or concerns regarding this report:

The Honorable Howard Rubenstein
Mayor, City of Saraland
716 Highway 43
Saraland, Alabama 36571
(251) 675-5103

Melissa O'Sullivan, P.E.
Volkert, Inc.
3809 Moffett Road
Mobile, Alabama 36618
(251) 342-1070

1.3 General Introduction

On November 16, 1990, the U.S. Environmental Protection Agency (EPA) promulgated regulations, under the Water Quality Act of 1987, setting forth application requirements for National Pollutant Discharge Elimination System (NPDES) storm water permits. The Alabama Department of Environmental Management (ADEM) administers the storm water program for the State of Alabama. Although the Federal regulations required municipalities with a population of 100,000 or more to participate in the Phase I permitting process, ADEM exercised the right to designate the City of Saraland as requiring a a Phase I storm water discharge permit in lieu of the Phase II permit for smaller systems. The City of Saraland is submitting this report as part of a group permit annual requirement for the NPDES permit number ALS000002.

1.4 Overview and Summary

On November 16, 1990, the Environmental Protection Agency (EPA) ruled that municipalities and industry share the responsibility to improve the water quality of the "Waters of the United States". In accordance with this rule, the EPA created regulations for NPDES Storm Water Permits for municipalities and permits associated with industrial activity. These regulations are aimed at reducing the amount of non-point source pollution that is currently the leading cause of water pollution.

The Water Quality Act involves a two-phased municipal permitting program that requires municipalities of certain populations to establish discharge controls to the Maximum Extent Practicable (MEP), to effectively prohibit non-storm water discharges to the municipal separate storm sewer systems, and where necessary, to contain applicable water quality based controls. Compliance with the maximum extent practicable requirement can be attained by developing a storm water management plan that addresses the six minimum control measures described in the storm water regulations and detailed in fact sheets developed and provided by EPA.

Although the Phase I permitting program is designed for municipalities with populations of 100,000 or greater, municipalities of smaller populations can be designated as co-permittees by the local authority administrating the program. The City of Saraland (City), with a 2010 population of 13,405, according to the U.S. Census Bureau, is an example of such a municipality.

The City utilizes current personnel to administer the storm water program elements. Additional assistance is provided by local engineering firms and Mobile County, as needed during crises or emergencies such as floods, spills, or hazardous waste incidents.

Storm water is managed by several City departments and by community activities which involve volunteer work. The City does not have the financial resources to dedicate personnel solely to storm water quality, however these responsibilities are shared by employees and considered part of the effort to protect our streams and waterways from degradation.

2.0 PROGRAM EVALUATION

2.1 Objective of the Program

The City of Saraland, in conjunction with other municipalities in Mobile and Baldwin Counties, were placed under a National Pollutant Discharge Elimination System (NPDES) Permit for storm water discharges. The permit was effective on June 14, 1996 and assigned the permit number ALS000002. The permit was renewed for a second five-year period on September 24, 2001 and is currently under an administrative extension by ADEM while the permit is being modified. The intent of the NPDES permit is to reduce and eliminate pollutants in storm water that are discharged from municipal separate storm sewer systems (MS4s). In accordance with the issued NPDES, the reporting period for items contained in this report is October 2010 through September 2011.

Currently ADEM is working with permittees and EPA to modify the program requirements. The permit is divided into Phase I and Phase II permittees. The City of Saraland, is included in a Phase I permit. ADEM issued the revised Phase II permit in February, 2011. The City of Saraland is willing and planning to participate in the public meeting(s) and comment period once the Phase I permit is issued by ADEM in draft format.

The City of Saraland is dedicated to achieving the conditions of this permit, which will ultimately improve water quality by reducing pollutants in receiving waters. The City's goals are to initiate activities which meet the requirements of the permit's control measures for storm water and to provide a quantifiable target to measure progress. The City has established the legal authority to manage and enforce the requirements of the program.

2.2 Major Findings

Dry weather screening was performed for the one major outfall and nineteen field screening locations. These sites are listed in Section 7.1 and detailed on maps included in Appendix A. The objective of dry weather screening was to identify illicit discharges. No illicit discharges were noted for any of the sites. In addition a wet weather screening was performed on the major outfall and a sample was obtained for analysis during this screening. Inspection results are presented in Section 7.2 and 7.3 along with representative outfall data in Appendix B.

2.3 Overall Program Strengths and Weaknesses

The City has developed and implemented many programs to help minimize storm water related pollutant loads. City Ordinance 664, passed in 1998, establishes procedures to control discharges from commercial and industrial facilities and construction sites. Areas that would benefit from drainage improvements are established, prioritized and updated as needed.

The program elements are the responsibilities of multiple City Departments. The Department Supervisors include the Chief Building Official, Public Works Supervisor, Sewer Superintendent, Chief of Police, Fire Chief, and the Environmental Patrol Officer. Employees in all City departments have received instruction on the program objectives and are provided with opportunities to attend educational programs.

The prediction of the long-range financial requirements needed to support the storm water program is difficult especially since forthcoming modifications to the program are unknown. Funding for expanding or improving the storm water management program is currently not available. The City officials address the financial needs and make budget allocations on a year-to-year basis that are prioritized based on the needs of the entire City operations.

2.4 Future Direction of the Program

The City will continue to implement and enforce the current ordinances and other programs regarding storm water issues to the maximum extent practicable. The City will continue to monitor designated outfall points and field inspection sites. The City will encourage community activity through education and outreach programs.

The City's building inspection department software upgrade to improve the tracking and documentation of all inspections is scheduled to be installed in January of 2012.

The City of Saraland along with other smaller cities in Mobile and Baldwin Counties, were included in a Phase I permit with the larger City of Mobile. On behalf of the City, Volkert representatives have had several conversations regarding the proposed amendments to the Phase I permit. The City of Saraland's smaller size puts them in a Phase II category. Accompanying this report and under separate cover, the City if formally requesting to be reclassified to a Phase II permit. Details of this request are provided in the formal request letter.

3.0 SUMMARY TABLE

3.1 Storm Water Management Plan Element Status/Compliance

CITY OF SARALAND

Program Element	Requirement	Activity Schedule			Comments
		Activities Required by SWMP	Complied With	Activities Accomplished During Calendar Year	
Structural Controls	Major Channels Inspections	6 Channels, once/year	Yes	6 Channels, once/year	Additionally, Before/After Heavy Rains
	Major Channels Maintenance	6 Channels, as needed	Yes	6 Channels, as needed	Additionally, Before/After Heavy Rains
	Storm Inlets Inspected	Approx. 5000 inlets, once/year	Yes	Approx. 5000 inlets, once/year	Additionally, Before/After Heavy Rains
	Detention Ponds	None	Yes	N/A	Maintained by Owner/Developer per City Ordinance
Monitoring	Representative	1 site, once/year	Yes	1 site, once/year	Summary, Section 7.0
	Wet Weather Screening	19 sites, once/year	N/A	19 sites, once/year	Not required.
	Dry Weather Screening	19 sites, once/year	Yes	19 sites, once/year	Summary, Section 7.0
Illicits	SSO's	Record/report occurrences	Yes	0 violations	No SSO's
	Investigations	Investigate reports/ complaints	Yes	N/A	No problems noted
Construction	Site Inspections	18-20 visits per site during construction	Yes	69 res., 12 comm.	No citations issued
Industrial	Inspections	As Needed	N/A	All sites visited, as needed	No permitting RCRA facilities
Education	Litter Campaign	Maintain Program	Yes	Keep Saraland Beautiful	Held several activities for encouraging litter pick up
	Oil/Household Hazardous Wastes	Maintain City's web site	Yes	Maintain City's web site	Information available on storm water management

4.0 NARRATIVE REPORT

4.1 Educational Activities / Public Participation and Involvement

Public participation is vital to controlling litter throughout Saraland. The City of Saraland has an "Adopt-a-Spot" Beautification Program that is led by the Saraland Chamber of Commerce. The goal of this program is to improve the natural beauty of Saraland with landscaping and to improve civic pride in the Central Business District (CBD) of Saraland. There are nine (9) "Adopt-a-Spot" locations.

The City also has a "Keep Saraland Beautiful" program, which is an affiliate of the "Keep America Beautiful" program. The aim of this program is to preserve the natural beauty and environment of the City of Saraland and to improve waste handling practiced at the community level. The program uses a community-based approach to change the attitude and practices related to litter and waste handling. Specifically, the "Keep Saraland Beautiful" program focuses to improve the aesthetic and ecological value of the City through litter control and prevention, proper handling of solid waste, beautification, public education awareness, recruitment of volunteers, and the promotion of voluntary recycling. The program seeks community resources to improve sites such as streets, rights-of-way, parking lots, and recreational parks. "Keep Saraland Beautiful" activities include participating in the Great American Clean-up, 4th and 5th grade funky junky art contest, picking up litter at Exit 13, adding sidewalks, planting landscape along sidewalks, and organizing gardening workshops. "Keep Saraland Beautiful" also publishes a bi-monthly newsletter called "The Litter Getter".

The municipal court system utilizes alternative sentencing to provide workers for removing litter from city streets as a form of community service. The City of Saraland utilizes this service weekly. These workers are utilized on the most traveled roadways such as Celeste Rd, Shell St., Kali Oka Rd., Main St., Cleveland Rd, and Blackjack area. The workers are supervised by the Mayor and City employees.

The City of Saraland educates their citizens through their website and through local organizations such as Keep Saraland Beautiful. The City's Web Site addresses storm water related issues and explains the purpose of the City's Storm Water Management Plan.

The City Building Inspection Department provides BMP informational packets and booklets to both residents and contractors. Interested parties are also directed to the City's and EPA's website for additional information.

The City of Saraland provides education opportunities to their employees. Buildings officials attend the following meetings as their scheduled permit Monthly meetings of the Code Officials of Alabama Association, The Code Officials Associations of Alabama Education Conference, and the American Academy of Financial Management Conference. The City of Saraland has provided for FEMA training and certification. Fire Department personnel attend classes as they become available. Hazardous materials refresher courses are conducted in-house annually by a certified instructor on staff with the Fire Department. The City has worked to certify all of its fire personnel and has obtained the necessary equipment in order to respond to smaller spills without the assistance of outside agencies. The City Fire Department also provides an annual refresher course for the City Police Department on first response activities during a hazardous materials spill. Wastewater treatment employees attend seminars and classes on wastewater management, including emerging "green" technologies for wastewater systems.

4.2 Monitoring and Screening

Field screening locations and monitoring stations were selected based upon their proximity to major stream systems, drainage basins, and urban development. Field screening stations were examined during dry conditions to verify that flow exists only during rainfall events. Monitoring stations were located along water bodies that would receive runoff from overland flow and storm water outfalls. These stations were selected as representative of the regional drainage conditions within the City's boundaries. The major outfall and the nineteen field screening locations were reviewed for evidence of illicit discharges during the permit period. No illicit discharges were noted. Results of the 2011 Monitoring are included in Section 7 of this report.

4.3 Illicit Inspection/Investigation/Enforcement

The City of Saraland responds to illicit discharges and continues to inspect, investigate, and enforce violations. No problems were reported during the permit year.

Routine dry weather screening is conducted by the City's Public Works Department. Suspected illicit discharges are investigated and handled immediately. There were no citations issued this permit year for illicit discharges.

4.4 Spills

The Saraland Police Department developed and implemented a Procedural General Order (PGO) for the reporting and handling of hazardous and/or toxic materials spills and incidents. In addition, the Saraland Fire Department has training in hazardous materials and their containment. The City's HazMat team is fully equipped to handle smaller incidents. The City of Saraland received no reportable spills.

4.5 Development Planning Procedures

The Saraland Planning Commission was established in 1958 to advise the City Council on its Comprehensive Plan for current and future development within the City and Planning Jurisdiction of Saraland (an area of three miles beyond the city limits). The Code Administration section of the Building Department is responsible for protecting the health, safety, and welfare of the City of Saraland and its residents through enforcement of building, electrical, plumbing, mechanical, gas, fire standard, storm water management and other codes and ordinances adopted by the City of Saraland. The Land Use Administration is responsible for assuring that the regulations regarding land use are adhered to in order to facilitate the goals of the Comprehensive Plan. The City of Saraland also has a Long Range Planning Commission that consists of representatives from the Land Use Administration, the Building Department, the Planning Commission, the Code Administration, and other regulatory enforcement departments. Questions concerning any stages or procedures for developments are directed to the Saraland Building Department. The City's Ordinance 757 details all requirements for management of the storm water for proposed developments. The permit process details numerous inspections to verify that these storm water measures are in place and effectively managing the storm water.

4.6 Construction Planning Procedures

Construction planning procedures are organized through the merger of the Land Use, Planning, Code Administration, and other Regulatory Enforcement Departments of the City of Saraland. These agencies work to ensure that the goals and objectives of the City's Comprehensive Plan are upheld. Strict requirements regarding storm water management plans for construction sites are addressed in City Ordinance 664.

The City approved plans for 69 new residential and 12 commercial sites during this reporting period. Multiple inspections are performed for each site during construction. No citations for improper storm water management were issued for any of the sites permitted during this period.

4.7 Construction Inspections

The Code Administration of the Saraland Building Department is responsible for construction inspections to ensure that all City codes are followed. These codes include building, electrical, plumbing, mechanical, gas, fire standard, storm water management and other miscellaneous codes. The Code Administration also approves land disturbance permits for construction. Once a permit is obtained, the builder must request inspections during different stages of construction. Inspectors generally visit each site eighteen to twenty two times during the construction process. These multiple inspections allow the city inspector to ensure compliance with the city codes. The City requires Best Management Practices (BMPs) for all construction projects in accordance with ADEM regulations.

During this reporting period, inspectors issued no citations to construction sites due to inadequate erosion control measures.

The City of Saraland follows the National Flood Insurance Program (NFIP) Floodplain management and ordinance. The city sent representatives to the FEMA National Emergency Training Center for a course on Managing Floodplain Development.

The City of Saraland has budgeted over $4,000 for computer hardware and $25,000 for construction permitting, inspection, GIS, and tracking software to improve the construction inspection process for the next budget year. They have obtained the software contract with Wise Technology and the training for this software begins in January of 2012.

Additionally, an educational program is being developed for Public & Contractor Education on erosion control and construction activities in flood prone areas. This program will utilized the City's internet site, brochures, public meetings and newspaper articles to provide this information to the public and local contractors. The City has recently hired a new employee to assist the Chief Building Official in completing these programs.

4.8 Pesticides, Herbicides, and Fertilizers

The City did not apply herbicide or pesticides during the permit period.

4.9 Roadway Maintenance

The Saraland Public Works Department performs smaller roadway maintenance projects funded though the operation budget as needed. Additionally the City performed street resurfacing throughout the City with an estimated cost of approximately $664,000 during the past year.

The City does not currently have a street sweeping program since they do not own a street sweeper. Additionally the City does not have a deicing program since icing of the roadways and bridges is not common in this area.

4.10 Structural Controls Maintenance

The City of Saraland cleans and removes debris from all drains as necessary to assist with maintaining flow through existing infrastructure. The Public Works Department maintains a regular inspection and maintenance schedule of the City's drainage system. Major channels are inspected at least once per year and cut or cleaned as allowed by regulatory agencies having jurisdiction when needed. Storm inlets are inspected annually and all necessary maintenance is performed. Also, elements of the drainage system are inspected before and after heavy rains to assure that debris has not accumulated and hindered the natural flow of the stormwater. The City performs roadway gutter cleaning quarterly on the Kali Oka, Shelton Beach, Anderson Ave, and 4th Ave areas to maintain the stormwater flow in these areas.

To facilitate the City's drainage needs, a bi-monthly meeting is held by the Mayor and Council Representative to discuss current activities performed and needed by the Public Works Department and Building Inspector.

4.11 Industrial Inspection

Saraland conducts inspections of industrial facilities on an as needed basis. Frequent inspections will occur if necessary. There were no reported violations at industrial facilities. There are no facilities subject to regulations under the Resource Conversation and Recovery Act (RCRA) within the City's jurisdiction.

4.12 Flood Management

The City has a rod located at the bridge on Highway 43 and Ferry Avenue to monitor high water levels in Bayou Sara to keep the City informed of the water level in the discharging stream. City employees monitor levels in area waterways and routinely cut the grass and brush.

4.13 Municipal Facilities

The City of Saraland has a separate Water Board that oversees the production, treatment, and distribution of water to its citizens. The members of this Board are appointed by the City Council and provide oversight for the employees who mange the water system on a daily bases. The City's Public Works Department is comprised of 27 employees who oversee the maintenance of all roads and drainage systems within the City. The Public Works Department conducts routine cleaning of drainage systems, including open ditches and closed pipe systems. Also, they perform minor repairs as necessary.

The City utilizes an oil recovery tank for their vehicles. The City parks a cleaned daily for litter and debris.

The City of Saraland is committed to providing quality services to its residents and business while protecting the surrounding environment. The City's sanitary sewer system which is comprised of the collection system and treatment facility is an example of this commitment. The sewer system serves approximately 5,600 customers and is comprised of over 80 miles of sewer mains, 38 lift stations, and a treatment facility rated for 2.6 million gallons a day (MGD) with a hydraulic peak of 8 MGD. In 2004 the City completed major renovations at the treatment facility necessary due to increasingly stringent water quality standards and increased wastewater flows and strength of sewage received. Since the upgrades were completed, the WWTF has produced a higher quality effluent than required by their NPDES permit. The treatment of sewage is an aggressive environment that takes its toll on the heavily mechanical process necessary to meet treated effluent parameters. During this past year the City spent approximately $30,000 to repair equipment at the treatment facility necessary to continue to meet the revised permit limits that were issued with the renewed NPDES permit.

4.14 Oil and Household Hazardous Waste

The City's website addresses the disposal of common household wastes, and has schedules for garbage and trash pick-up. Specifically, the website provides types and examples of garbage that can be picked up by normal trash pick up services. It also explains how to contain and minimize oil from household vehicles. Dates, times and holiday schedule for routine trash pick up are also provided.

4.15 Sanitary Sewer Seepage

Planning for properly maintaining and operating a sanitary sewer collection and treatment system is imperative to ensure economic growth and quality of life experienced by the citizens of Saraland. The City of Saraland has several tools to assist them in these efforts with the wastewater collection system including a capacity analysis of their system to identify deficiencies in the collection system. Also, all lift stations are continuously monitored through a Supervisory Control and Data Acquisition (SCADA) system. The SCADA system will send pager alarms to City staff when a critical condition arises at a lift station such as high water level or power outage. The Sewer Department staff also performs a minimum of twice weekly site visits to all lift stations to visibly confirm operational conditions. The sewer department also has two portable generators that are stationed at critical lift stations in the case of long term power outages.

Overall the sewer system is in good condition with capacity deficiencies experienced during wet weather events due to inflow and infiltration (I/I). The City is committed to continue to identify sources of inflow and infiltration (I/I) in their collection system and make the necessary repairs to continue to provide the capacity needed for their customers as funds become available. During the past year the City spent approximately $65,000 to address areas that are affected by I/I.

No Sanitary Sewer Overflows (SSO's) were reported this year.

5.0 SUMMARY OF PROPOSED PROGRAM MODIFICATIONS

The City of Saraland along with other smaller cities in Mobile and Baldwin Counties, were included in a Phase I permit with the larger City of Mobile. On behalf of the City, Volkert representatives have had several conversations regarding the proposed amendments to the Phase I permit. The City of Saraland's smaller size puts them in a Phase II category. Accompanying this report and under separate cover, the City if formally requesting to be reclassified to a Phase II permit. Details of this request are provided in the formal request letter.

6.0 FISCAL ANALYSIS

6.1 Past Fiscal Year

Storm Water Management Estimated Budget

Public Works Department	
Implementation	
Salaries/Wages	$ 763,478
Equipment/Supplies	$ 10,101
Education	$ 21
Property Purchase	$ 3,631
Total Estimated Budget	$ 777,231

6.2 Current Fiscal Year

Public Works Department – Streets and Drainage

Salaries/Wages	$ 841,033
Equipment/Supplies	$ 10,450
Education	$ 150
Property Purchase	$ 23,500
Miscellaneous	$ 466,290
Total Estimated Budget	$ 1,341,423

7.0 MONITORING RESULTS

7.1 Monitoring Locations

The following is a list of field screening locations and major outfall sites. Individual sampling sites are indicated on maps included in Appendix A.

- One (1) major outfall at the south end of St. Frances Street
- 19 field screening locations:
  1. End of Booker Ridge Court
  2. South side of dirt road (Near Lukoli Lane, West)
  3. Across the street from 4695 Pine Avenue
  4. Off Lafitte Road west of Celeste Road at bridge crossing just east of the second Traveler Drive entrance.
  5. 1735 Chase Drive – Across from lift station.
  6. 841 Deer Run Drive – South side of lift station.
  7. 900 Forest Avenue – Northwest corner of lift station across from Circle K Store.
  8. North end of Ideal Street
  9. 524 Scott Drive West - Northwest corner of bridge crossing
  10. 886 Fernwood Drive – Rear parking lot of Ruby Tuesday's Restaurant in the triangle area adjacent to Shelton Beach Road across the street from Econo Lodge Hotel.
  11. Second Avenue - Across from 906 Second Avenue
  12. South dead-end of James Street
  13. North side of Industrial Parkway, 100 yards east of Dixie Drayage
  14. North of Celeste Road and Highway 43 intersection below billboard @ bridge. Storm drain in grass area of parking lot.
  15. East side of Bea's Lane – Adjacent to 130 Bayou Sara Avenue
  16. 2 Dale Avenue – Northwest corner of Intersection at Clark Avenue and Dale Avenue.
  17. Intersection of Anderson Avenue and Railroad Street – west of railroad tracks.
  18. Rufus Harbin Park on Norton Avenue. Drainage structures located on the east side of the park.
  19. Celeste Road and Forest Avenue in front of Forest Subdivision.

7.2 Wet Weather Data

Wet weather data included in this report consists of a representative sample collected at the designated major outfall as identified above. This sample data is included in Appendix B. Review of the results note the possibility that the receiving stream is backwashing into the storm water at the point of the sampling. The sampling results indicate low pollutant levels and loadings; there are no indications that the City is contributing to the elevated Mercury levels of the receiving streams.

7.3 Dry Weather Data

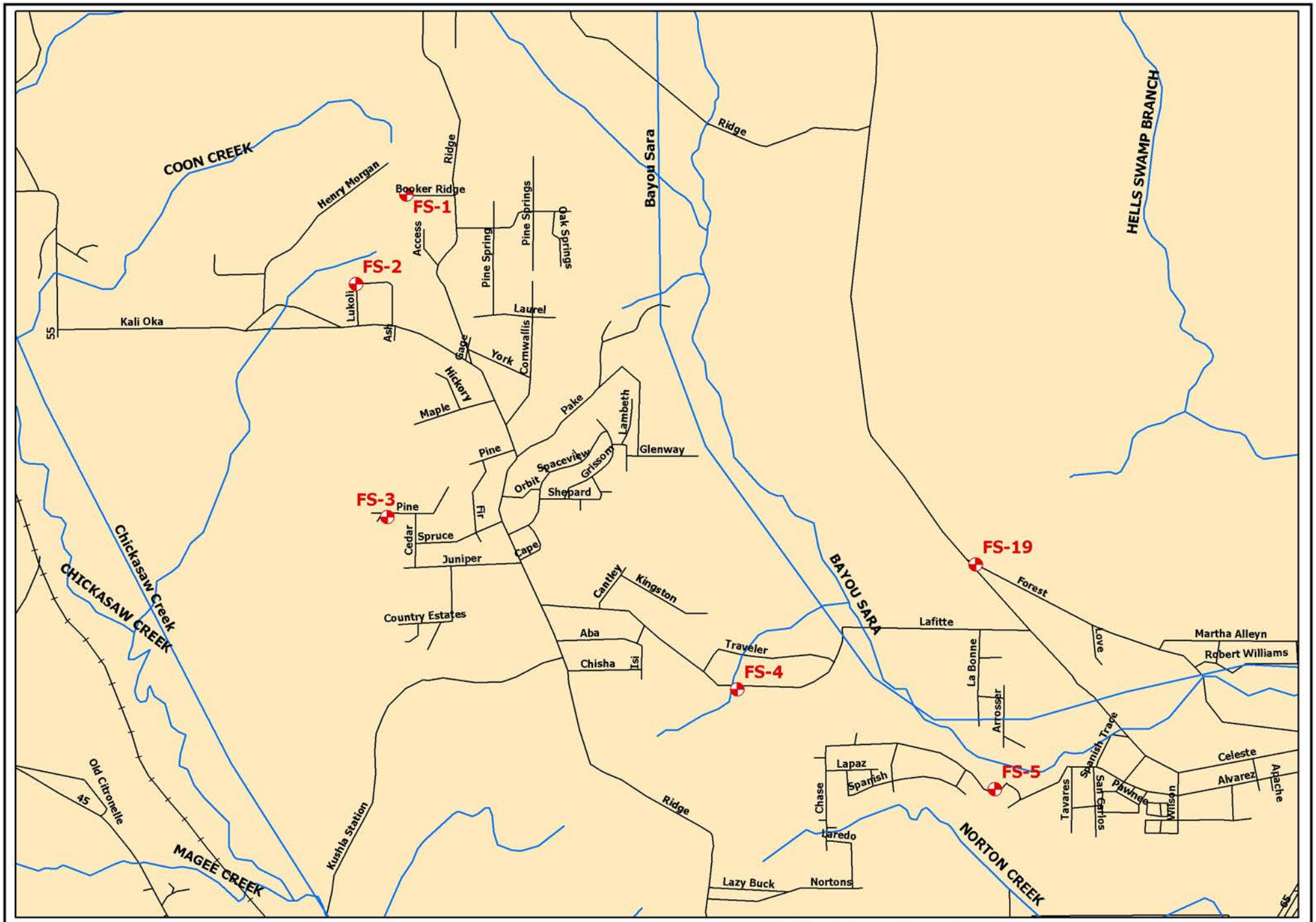
Dry weather field screenings were performed within the permit period. All sites appeared to be in operable condition. No illicit discharges were noted at the time of the inspection.

8.0 SUMMARY

This report includes a history and overview of the City of Saraland's MS4 Program, monitoring results and locations and a review of the programs elements and activities. The City has implemented and performs the EPA recommended program elements as part of their ADEM MS4 Permit. The intent of the program is to reduce pollutants in storm water that is discharged from the storm water system and to prevent the degradation of receiving streams. The receiving streams for the City of Saraland are Bayou Sara and Norton Creek and ultimately the Mobile River which is listed on the 2010 Alabama §303(d) List for impaired waterways. The listed cause for the impairment is an elevated concentration of the metal Mercury from an unknown source. Monitoring results provided indicates low pollutant levels and loadings; there are no indications that the City is contributing to the elevated Mercury levels of the receiving streams.

The City of Saraland will continue to focus on storm water management and look for ways to enhance their current program.

Appendix A



VOLKERT & ASSOCIATES, INC.

0 1,200 2,400 4,800 Feet

1 inch = 2,400 feet

N

Note: This map is for presentation use only and not to be used for construction purposes.

Map Document: (V:\GIS\GIS_Projects\StormWater\GIS\Map_Documents\StormWater_Sampling.mxd)
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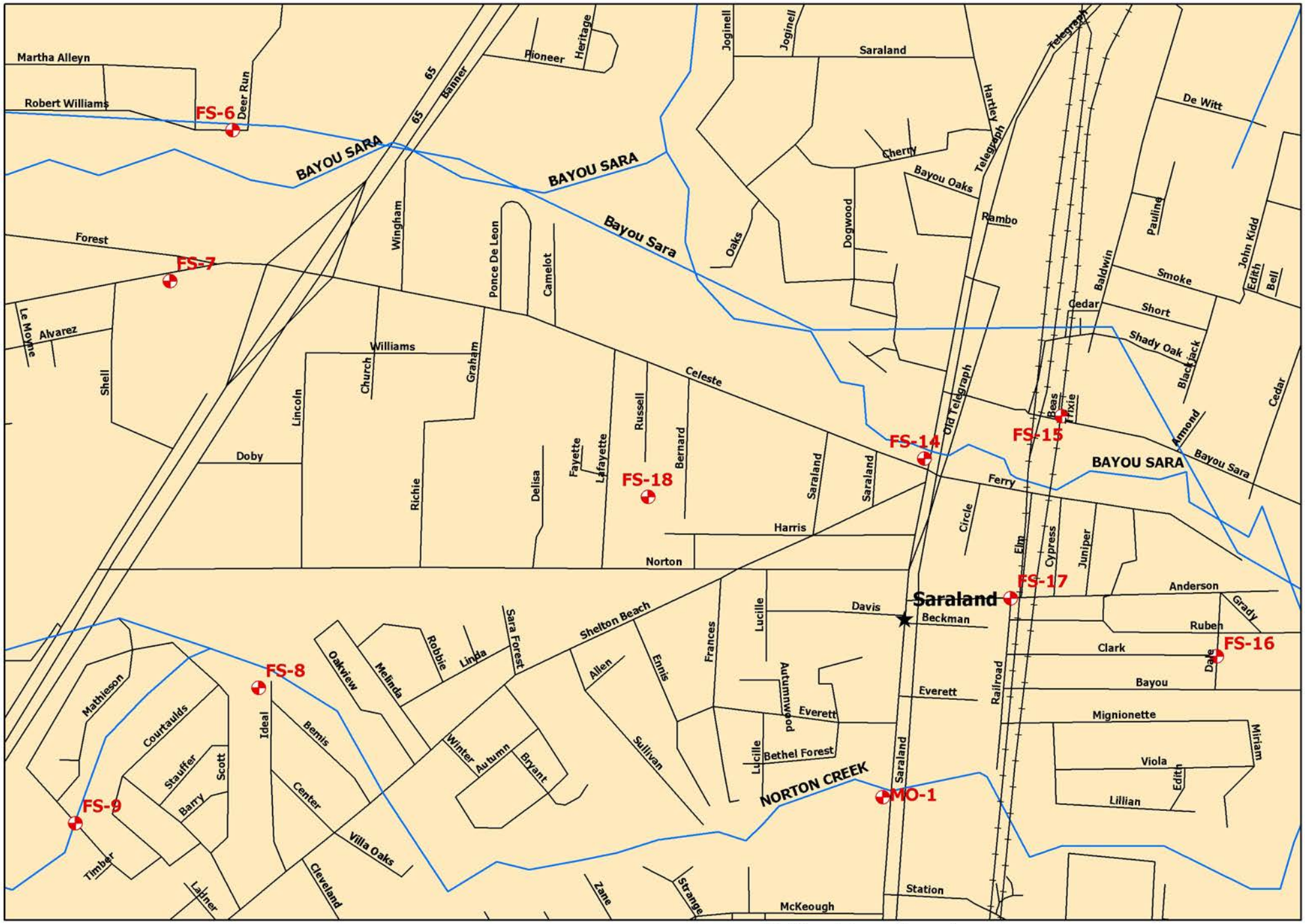
Saraland



VOLKERT & ASSOCIATES, INC.

0 600 1,200 2,400 Feet

1 inch = 1,200 feet

Note: This map is for presentation use only and not to be used for construction purposes.

Map Document: (V:\GIS\GIS_Projects\StormWater\GIS\Map_Documents\StormWater_Sampling.mxd)
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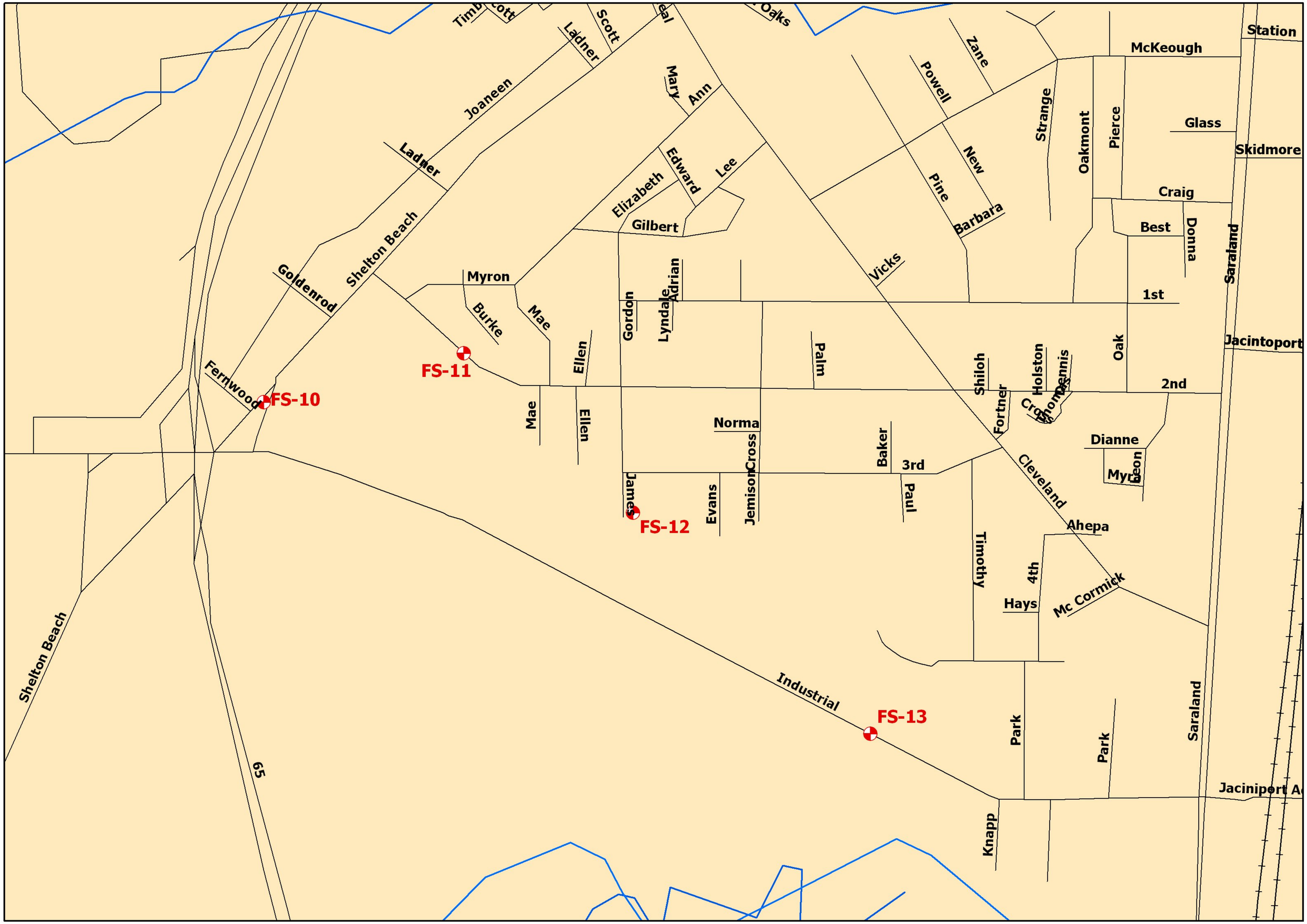
Saraland



VOLKERT & ASSOCIATES, INC.

0 600 1,200 2,400 Feet

1 inch equals 1,200 feet

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Note: This map is for presentation use only and not to be used for construction purposes.

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Saraland

Appendix B

ENVIROCHEM
Environmental Laboratories

4320 Midmost Drive Mobile, Alabama 36609
Phone (251) 344-9106 Fax (251) 341-9492

Volkert Environmental Group
P.O. Box 7434
Mobile AL, 36670
Attention: Melissa O'Sullivan

Project: Stormwater Sites
Project Number: MS-4 Permit - MO-01 -Saraland 2011
Reported:
09/19/11 14:15

ANALYTICAL REPORT

Enclosed are the results of analyses for the samples listed below that were received by the laboratory on 09/03/11 12:00. If you have any questions concerning this report, please feel free to call Ken Mohr at (251) 344-9106.

Sample Description	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
Saraland	11I0054-01	Surface Water	Grab	09/02/11 21:20	09/03/11 12:00
Saraland - Composite	11I0054-02	Surface Water	Composite	09/02/11 21:20	09/03/11 12:00

Ken Mohr, Project Manager

ACCREDITED IN ACCORDANCE WITH nelac

The test results in this report meet NELAP requirements for accredited parameters, unless otherwise noted, and relate only to the sample(s) received by this laboratory. This report must be reproduced in its entirety unless approved by the laboratory.

Results are reported on a "wet weight basis," unless otherwise noted.

ENVIROCHEM
Environmental Laboratories

4320 Midmost Drive Mobile, Alabama 36609
Phone (251) 344-9106 Fax (251) 341-9492

Volkert Environmental Group
P.O. Box 7434
Mobile AL, 36670
Attention: Melissa O'Sullivan

Project: Stormwater Sites
Project Number: MS-4 Permit - MO-01 -Saraland 2011
Reported:
09/19/11 14:15

Saraland

Date Sampled: 09/02/11 21:20
Date Received: 09/03/11 12:00

11I0054-01 (Surface Water)

Sampled by: Butch Nolin
Sample Type: Grab

Analyte	Batch	Prepared	Analyzed	Analyst	Method	RL	Units	Result	Qualifier
Classical Chemistry Parameters									
Oil & Grease	1I06009	09/07/11 09:15	09/07/11 09:15	AET	EPA 1664	2	mg/L	< 2	U

Saraland - Composite

Date Sampled: 09/02/11 21:20
Date Received: 09/03/11 12:00

11I0054-02 (Surface Water)

Sampled by: Butch Nolin
Sample Type: Composite

Analyte	Batch	Prepared	Analyzed	Analyst	Method	RL	Units	Result	Qualifier
Classical Chemistry Parameters									
Biochemical Oxygen Demand	1I03001	09/03/11 13:29	09/08/11 08:28	ARC	SM 5210B	2	mg/L	< 2	U
Chemical Oxygen Demand	1I07012	09/07/11 10:30	09/07/11 10:30	AET	SM 5220D	20	mg/L	< 20	U
Nitrite as N	1I03003	09/03/11 14:05	09/03/11 14:05	AET	SM 4500NO2-B	0.02	mg/L	< 0.02	U
Nitrate as N	1I09017	09/03/11 14:05	09/03/11 14:05	RLS	EPA 353.2	0.1	mg/L	**0.4**	
Phosphorus-Total Dissolved	1I15024	09/13/11 15:00	09/13/11 15:00	RLS	EPA 365.4	0.100	mg/L	< 0.100	U
Phosphate, Total as P	1I15024	09/13/11 15:00	09/13/11 15:00	RLS	EPA 365.4	0.100	mg/L	< 0.100	U
Total Dissolved Solids	1I06011	09/06/11 16:10	09/06/11 16:10	AET	SM 2540C	5	mg/L	**66**	
Total Kjeldahl Nitrogen	1I15027	09/13/11 15:00	09/13/11 15:00	RLS	EPA 351.2	0.5	mg/L	< 0.5	U
Total Suspended Solids	1I08002	09/08/11 12:30	09/08/11 12:30	AET	SM 2540D	5	mg/L	**10**	

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ENVIROCHEM
Environmental Laboratories

4320 Midmost Drive Mobile, Alabama 36609
Phone (251) 344-9106 Fax (251) 341-9492

Volkert Environmental Group
P.O. Box 7434
Mobile AL, 36670
Attention: Melissa O'Sullivan

Project: Stormwater Sites
Project Number: MS-4 Permit - MO-01 -Saraland 2011
Reported:
09/19/11 14:15

Classical Chemistry Parameters - Quality Control

Analyte	RL	Units	Result	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (1I03001-BLK1)				Prepared: 09/03/11 Analyzed: 09/08/11						
Biochemical Oxygen Demand	2	mg/L	ND							U
LCS (1I03001-BS1)				Prepared: 09/03/11 Analyzed: 09/08/11						
Biochemical Oxygen Demand		mg/L	196	198		99	84.6-115.4			
LCS Dup (1I03001-BSD1)				Prepared: 09/03/11 Analyzed: 09/08/11						
Biochemical Oxygen Demand		mg/L	202	198		102	84.6-115.4	3	30	
Duplicate (1I03001-DUP1)		**Source: 11I0053-01**		Prepared: 09/03/11 Analyzed: 09/08/11						
Biochemical Oxygen Demand	2	mg/L	133		151			13	35	
Blank (1I03003-BLK1)				Prepared & Analyzed: 09/03/11						
Nitrite as N	0.02	mg/L	ND							U
LCS (1I03003-BS1)				Prepared & Analyzed: 09/03/11						
Nitrite as N	0.02	mg/L	0.0523	0.0500		105	85.6-120			
LCS Dup (1I03003-BSD1)				Prepared & Analyzed: 09/03/11						
Nitrite as N	0.02	mg/L	0.0523	0.0500		105	85.6-120	0	15	
Matrix Spike (1I03003-MS1)		**Source: 11I0054-02**		Prepared & Analyzed: 09/03/11						
Nitrite as N	0.02	mg/L	0.0569	0.0500	0.0045	105	75.1-124			
Matrix Spike Dup (1I03003-MSD1)		**Source: 11I0054-02**		Prepared & Analyzed: 09/03/11						
Nitrite as N	0.02	mg/L	0.0563	0.0500	0.0045	104	75.1-124	1	20	

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Classical Chemistry Parameters - Quality Control

Analyte	RL	Units	Result	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (1I06009-BLK1)				Prepared & Analyzed: 09/07/11						
Oil & Grease	2	mg/L	ND							U
LCS (1I06009-BS1)				Prepared & Analyzed: 09/07/11						
Oil & Grease	2	mg/L	42.0	40.0		105	78-114			
Matrix Spike (1I06009-MS1)	**Source: 11H0540-02**			Prepared & Analyzed: 09/07/11						
Oil & Grease	2	mg/L	32.0	40.0	2.00	75	78-114			SPK L
Blank (1I06011-BLK1)				Prepared & Analyzed: 09/06/11						
Total Dissolved Solids	5	mg/L	ND							U
Duplicate (1I06011-DUP1)	**Source: 11I0055-01**			Prepared & Analyzed: 09/06/11						
Total Dissolved Solids	5	mg/L	242		224			8	10	
Reference (1I06011-SRM1)				Prepared & Analyzed: 09/06/11						
Total Dissolved Solids		mg/L	161	158		102	91.1-108.9			
Blank (1I07012-BLK1)				Prepared & Analyzed: 09/07/11						
Chemical Oxygen Demand	20	mg/L	ND							U
LCS (1I07012-BS1)				Prepared & Analyzed: 09/07/11						
Chemical Oxygen Demand	20	mg/L	992	1000		99	85-115			

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Reported:
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Classical Chemistry Parameters - Quality Control

Analyte	RL	Units	Result	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
LCS Dup (1I07012-BSD1)				Prepared & Analyzed: 09/07/11						
Chemical Oxygen Demand	20	mg/L	978	1000		98	85-115	1	25	
Matrix Spike (1I07012-MS1)		**Source: 11I0076-01**		Prepared & Analyzed: 09/07/11						
Chemical Oxygen Demand	20	mg/L	2980	2000	1090	95	75-125			
Matrix Spike Dup (1I07012-MSD1)		**Source: 11I0076-01**		Prepared & Analyzed: 09/07/11						
Chemical Oxygen Demand	20	mg/L	2930	2000	1090	92	75-125	2	25	
Blank (1I08002-BLK2)				Prepared & Analyzed: 09/08/11						
Total Suspended Solids	5	mg/L	ND							U
Duplicate (1I08002-DUP1)		**Source: 11I0057-01**		Prepared & Analyzed: 09/08/11						
Total Suspended Solids	5	mg/L	72		76			5	26	
Duplicate (1I08002-DUP2)		**Source: 11I0042-01**		Prepared & Analyzed: 09/08/11						
Total Suspended Solids	5	mg/L	8		8			0	26	
Blank (1I09017-BLK1)				Prepared & Analyzed: 09/08/11						
Nitrate as N	0.1	mg/L	ND							U
LCS (1I09017-BS1)				Prepared & Analyzed: 09/08/11						
Nitrate as N	0.1	mg/L	1.0	1.00		96	90-110			

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Classical Chemistry Parameters - Quality Control

Analyte	RL	Units	Result	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
LCS Dup (1I09017-BSD1)				Prepared & Analyzed: 09/08/11						
Nitrate as N	0.1	mg/L	1.0	1.00		97	90-110	0.3	25	
Matrix Spike (1I09017-MS1)		**Source: 11I0063-01**		Prepared & Analyzed: 09/08/11						
Nitrate as N	0.1	mg/L	1.2	1.00	0.3	90	90-110			
Matrix Spike Dup (1I09017-MSD1)		**Source: 11I0063-01**		Prepared & Analyzed: 09/08/11						
Nitrate as N	0.1	mg/L	1.2	1.00	0.3	90	90-110	0	25	
Calibration Check (1I09020-CCV1)				Prepared & Analyzed: 09/08/11						
Nitrate as N		mg/L	1.0	1.00		96	90-110			
Calibration Check (1I09020-CCV2)				Prepared & Analyzed: 09/08/11						
Nitrate as N		mg/L	1.0	1.00		97	90-110			
Calibration Check (1I09020-CCV3)				Prepared & Analyzed: 09/08/11						
Nitrate as N		mg/L	1.0	1.00		98	90-110			
Calibration Check (1I09020-CCV4)				Prepared & Analyzed: 09/08/11						
Nitrate as N		mg/L	1.0	1.00		100	90-110			
Blank (1I15024-BLK1)				Prepared & Analyzed: 09/14/11						
Phosphate, Total as P	0.100	mg/L	ND							U
Phosphorus-Total Dissolved	0.100	"	ND							U

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Analyte	RL	Units	Result	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
LCS (1I15024-BS1)				Prepared & Analyzed: 09/14/11						
Phosphate, Total as P	0.100	mg/L	0.699	0.653		107	85-115			
Phosphorus-Total Dissolved	0.100	"	0.699	0.653		107	85-115			
LCS Dup (1I15024-BSD1)				Prepared & Analyzed: 09/14/11						
Phosphate, Total as P	0.100	mg/L	0.749	0.653		115	85-115	7	25	
Phosphorus-Total Dissolved	0.100	"	0.749	0.653		115	85-115	7	25	
Matrix Spike (1I15024-MS1)		**Source: 11I0050-01**		Prepared & Analyzed: 09/14/11						
Phosphate, Total as P	1.00	mg/L	11.8	6.53	5.61	95	75-125			
Phosphorus-Total Dissolved	1.000	"	11.800	6.53	5.610	95	75-125			
Matrix Spike Dup (1I15024-MSD1)		**Source: 11I0050-01**		Prepared & Analyzed: 09/14/11						
Phosphate, Total as P	1.00	mg/L	11.6	6.53	5.61	92	75-125	2	25	
Phosphorus-Total Dissolved	1.000	"	11.600	6.53	5.610	92	75-125	2	30	
Calibration Check (1I15025-CCV1)				Prepared & Analyzed: 09/13/11						
Phosphate, Total as P		mg/L	1.02	1.00		102	90-110			
Phosphorus-Total Dissolved		"	1.020	1.00		102	0-200			
Calibration Check (1I15025-CCV2)				Prepared & Analyzed: 09/13/11						
Phosphate, Total as P		mg/L	1.04	1.00		104	90-110			
Phosphorus-Total Dissolved		"	1.040	1.00		104	0-200			
Calibration Check (1I15025-CCV3)				Prepared & Analyzed: 09/13/11						
Phosphate, Total as P		mg/L	1.05	1.00		105	90-110			
Phosphorus-Total Dissolved		"	1.050	1.00		105	0-200			

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Classical Chemistry Parameters - Quality Control

Analyte	RL	Units	Result	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (1I15027-BLK1)				Prepared & Analyzed: 09/13/11						
Total Kjeldahl Nitrogen	0.5	mg/L	ND							U
LCS (1I15027-BS1)				Prepared & Analyzed: 09/13/11						
Total Kjeldahl Nitrogen	0.5	mg/L	8	8.20		96	90-110			
LCS Dup (1I15027-BSD1)				Prepared & Analyzed: 09/13/11						
Total Kjeldahl Nitrogen	0.5	mg/L	8	8.20		101	90-110	5	25	
Matrix Spike (1I15027-MS1)	**Source: 11I0050-01**			Prepared & Analyzed: 09/13/11						
Total Kjeldahl Nitrogen	5.0	mg/L	100	82.0	40	90	75-125			
Matrix Spike Dup (1I15027-MSD1)	**Source: 11I0050-01**			Prepared & Analyzed: 09/13/11						
Total Kjeldahl Nitrogen	5.0	mg/L	100	82.0	40	89	75-125	0.9	25	
Calibration Check (1I15029-CCV1)				Prepared & Analyzed: 09/13/11						
Total Kjeldahl Nitrogen		mg/L	10	10.0		96	90-110			
Calibration Check (1I15029-CCV2)				Prepared & Analyzed: 09/13/11						
Total Kjeldahl Nitrogen		mg/L	10	10.0		96	90-110			
Calibration Check (1I15029-CCV3)				Prepared & Analyzed: 09/13/11						
Total Kjeldahl Nitrogen		mg/L	10	10.0		99	90-110			

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Project: Stormwater Sites
Project Number: MS-4 Permit - MO-01 -Saraland 2011
Reported:
09/19/11 14:15

CASE NARRATIVE

The results presented in this report relate only to the sample(s) received on 9/3/2011 12:00:00 PM for Volkert Environmental Group - 11I0054-01, 11I0054-02

Storm Water Event Date- Sept 03. 2011
Total Rainfall 0.59 Inches
Duration of Storm Water Event - 100 minutes
Flow Rate Min -(fps)-Min-0.26 / Max- 1.62 / Ave- 0.531
Water Level-Inches- Min - 10.409 / Max- 12.555 / Ave - 11.348
Total Gallons- 275,000 gallons
pH- 6.35

Sample Receipt
Sample receipt information, including documentation of any deviation(s) from sample receiving quality control acceptance criteria, is provided on attachments to the report including the Sample Receipt Checklist, Chain of Custody, and Field Data Sheet.

Sample Hold Times
All samples were received and analyzed within the recommended hold times unless noted below.

Instrument Calibration
The initial and continuing calibration verification, if applicable, met acceptance criteria unless note below.

QC Parameter
Refer to the following locations within this report for QC parameter exceptions:
-Surrogate and their recoveries, where applicable, are listed below the analytes for the method - any exceptions are qualified.
-Blank, Lab Control Spike (LCS)/LCS Duplicates and/or Matrix Spike (MS)/MS Duplicate recoveries, RPDs, and Continuing Calibration Verification (CCV) are provided in the Quality Control Section - any exceptions are qualified. -For Sample Analytes with a "J" qualifier (estimated value), refer to the associated QC data provided in the Quality Control Section for the QC exception.

Definition of Qualifiers

A	Value reported is the mean of two or more determinations.
B	Indicates the analyte was detected in a QC Blank but not in any sample.
CCL	Analyte exceeded the lower acceptance criteria for CCV. Associated sample results are considered estimated values.
CCH	Analytes exceeded the acceptance criteria for CCV but was biased high, indicating enough sensitivity to detect the analyte.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
IS	Internal Standard Response exceeds the acceptance range of -50% to +100% of the midpoint of the most recent calibration.
J	Estimated value.
MS	The RPD and/or % Rec for this matrix spike cannot be accurately calculated due to the background levels of analyte(s).
Q	Sample held beyond the accepted holding time.
RPD	The RPD for this duplicate exceeded the established control limit.
SPK H	The % Rec for this spiked analyte exceeded the control limit but was biased high, indicating enough sensitivity to detect the analyte.

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SPK L	The % Rec for this spiked analyte was below the established control limit.
T	Value reported is less than the laboratory method detection limit.
U	Indicates the compound was analyzed for but not detected.
V	Indicates the analyte was detected in the sample and QC blank.
Y	The analysis was from an unpreserved or improperly preserved sample.
Z	Too many colonies were present (TNTC); (microbiology)

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4320 Midmost Drive Mobile, AL 36609
Tel: 251/344-9106 Fax: 251/341-9492

LAB NO: 11I0054

CLIENT **Volkert Environmental**
ADDRESS
CITY/ST/ZIP
CONTACT Melissa O'Sullivan
PHONE
FAX
EMAIL

PROJECT Saraland Storm Water
PO#
METHOD OF DELIVERY:
SHIPPING TICKET NO.:
*SPECIFY ANALYTE LIST AND/OR METHOD
Ph 6.35

Chain of Custody Record
Agreement to Perform Services

SUB SHIPPED TO:
SUB SHIPPED VIA
DATE SHIPPED

Matrix Codes: A=Air B=Bulk S=Soil GW=Groundwater SW=Stormwater SFW=Surface Water WW=Wastewater DW=Drinking Water P=Paint L=Liquid SLD= Solid

PRESERVATION/CONTAINERS FOR WATER SAMPLES
SHADED AREAS FOR LAB USE ONLY

F0301.01 LAB USE ONLY	FIELD ID	COMPOSITE	GRAB	MATRIX	SAMPLER	SAMPLE COLLECTION BEGIN AUTOSAMPLER DATE/TIME	SAMPLE COLLECTION SAMPLE COLLECTION DATE/TIME	PLASTIC NONE: BOD 5-DAY	CBOD 5-DAY	ALKALINITY	CHLORIDE	pH	SS	SULFATE	TDS	TSS	TURBIDITY	O-PHOS	NITRITE	PLASTIC H_2SO_4: NITRATE	NO3+NO2	AMMONIA-N	COD	TOTAL PHOS	TKN	P/G NaOH: CN, AMENABLE	CN, TOTAL	GLASS H_2SO_4: PHENOLS*	TOC	TPH*	OIL & GREASE	GLASS NONE: SEMI-VOL*	PAH's	GLASS HCl: BETX	BETXM	BETXN	VOLATILES*	STERILE $Na_2S_2O_3$: FECAL COLI	COLIFORM, MF	COLIFORM, P/A	ENTERO	HNO3: METALS*	ASBESTOS	FLASHPOINT	TCLP*	MISC TEST: DIS. PHOSPHATE			
	Saraland		X	SW	BN		09/02/11 21:20					X																			X																				
	Saraland	X		SW	BN	09/02/11 21:20	09/02/11 24:20	X							X	X			X	X			X	X	X																						X				

1. RELINQUISHED BY: DATE/TIME
SAMPLER(S) SIGNATURE(S) 09/02/11 1200
PRINT NAME(S): Nola COMPANY: EC

2. RECEIVED BY: DATE/TIME
SIGNATURE: 9/3/11 1200

4. RECEIVED BY: DATE/TIME
SIGNATURE:
PRINT NAME: COMPANY:

5. RELINQUISHED BY: DATE/TIME
SIGNATURE:

7. RELINQUISHED BY: DATE/TIME
SIGNATURE:
PRINT NAME: COMPANY:

8. RECEIVED BY: DATE/TIME
SIGNATURE:

22.6°

ENVIROCHEM
Environmental Laboratories

Sample Receipt / Integrity Checklist

Client Volkert Date 9/3/11 Field Courier Butch Nolin

Work Order 11I0054 Sample Custodian Ashley Turton

Sample coolers and containers

Custody seals on coolers or shipping containers intact? ..... Yes ✓ No ____ n/a ____

Outside of coolers or shipping containers are free from damage? ..... Yes ✓ No ____ n/a ____

All expected paperwork received (COC & other client specific information)? ..... Yes ✓ No ____ n/a ____

Are sample containers intact? ..... Yes ✓ No ____ n/a ____

Are samples in proper containers? ..... Yes ✓ No ____ n/a ____

Is adequate sample volume present to perform the requested analyses? ..... Yes ✓ No ____ n/a ____

Are volatile samples free of headspace (bubbles less than 6 mm in diameter)? ..... Yes ____ No ____ n/a ✓

Thermal and Chemical Preservation

Samples received cooled? ..... Yes ____ No ✓ n/a ____

Type of cooling/temp? ..... Wet Ice ____ Blue Ice ____ n/a ✓ Temp. ____

Temperature blank present? ..... Yes ____ No ✓ n/a ____

If no cooling present, were samples received within 1 hour of collection? ..... Yes ____ No ✓ n/a ____

Is the correct chemical preservative used for all samples? ..... Yes ✓ No ____ n/a ____

Is the pH range correct for chemically preserved samples checked at login? ..... Yes ____ No ____ n/a ____

List samples checked for chemical preservation at bench ..... O&G ____ Metals ____ VOCs ____ Other Lachat

Chain of Custody

Is COC filled out completely? ..... Yes ✓ No ____ n/a ____

Is COC properly relinquished (signed and dated)? ..... Yes ✓ No ____ n/a ____

Are any samples missing on COC or from cooler? ..... Yes ____ No ✓ n/a ____

Do sample containers match COC? ..... Yes ✓ No ____ n/a ____

Holding Times

Are samples received within hold time? ..... Yes ✓ No ____ n/a ____

Were short hold time or rush samples taken to appropriate department? ..... Yes ____ No ____ n/a ✓

If no, was responsible analyst and/or dept. manager notified? ..... Yes ____ No ____ n/a ✓

Does work order meet EnviroChem sample acceptance criteria? ..... Yes ✓ No ____ n/a ____

Note: Samples that do not meet acceptance criteria must be documented in the Sample Rejection Log

Field Comments ____

Login Comments ____

Client Contacted ____ Contacted By ____ Date/Time ____

Client instructions ..... Cancel Work order ____ Proceed with work order ____ (Data will be qualified)

F0056.03