NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PHASE II, REGULATED SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)

PERMIT APPLICATION (NOTICE OF INTENT)

MUNICIPIO DE SAN JUAN

PO Box 9024100
San Juan, Puerto Rico 00902-4100

U.S. ENVIRONMENTAL PROTECTION AGENCY – REGION II

CARIBBEAN ENVIRONMENTAL PROTECTION DIVISION
Centro Europa Building, Suite 417
1492 Ponce de León Avenue
San Juan, Puerto Rico 00907-4127

March 2008

TABLE OF CONTENT

APPENDICES

1.0 NPDES (NOTICE OF INTENT) PERMIT APPLICATION

1. BACKGROUND

In 1972, Congress amended the Federal Water Pollution Control Act, commonly referred as the Clean water Act (CWA) to prohibit the discharge of any pollutant to waters of the United States from point sources unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Initial efforts under the NPDES program focused on reducing pollutants in discharges of industrial process wastewater and municipal sewage. As pollution control measures have been implemented, it has become evident that diffuse sources or non-point sources are also contributors of water quality degradation. In 1990, the US Environmental Protection Agency (USEPA) promulgated rules establishing Phase I of the NPDES storm water program. The Phase I program for MS4 requires operators of "medium" and "large" MS4, that is, those that generally serve populations of 100,000 or greater, to implement a storm water management program as a means to control polluted discharges from these MS4. USEPA published the Storm Water Phase II Rule on December 9, 1999. As outlined in theses regulations the Municipality of San Juan is required to submit an application for permit coverage.

The urbanized and rural areas of Municipality of San Juan, as well as the City itself, are required to apply for NPDES municipal storm water discharge permits. In order to assure that the quality of storm water discharges from our municipal storm sewer system is managed to the maximum extent practicable, the Municipality of San Juan has developed and is in the process of implementing a Storm Water Management Program that includes best management practices, public education and storm water monitoring.

The U.S. Environmental Protection Agency has not delegated the NPDES permitting program to the Puerto Rico Environmental Quality Board (PREQB). Thus, USEPA Region 2 has issued a general NPDES permit for Small Municipal Separate Storm for Puerto Rico as of November 6, 2006.

1.2 MUNICIPAL STORM WATER SEWER SYSTEM

The Municipality of San Juan has a territorial extension of 123.8 square kilometers (47.8 sq mi), of which 75.4 km (29.11 mi) are water bodies. According to the 2000 Census,

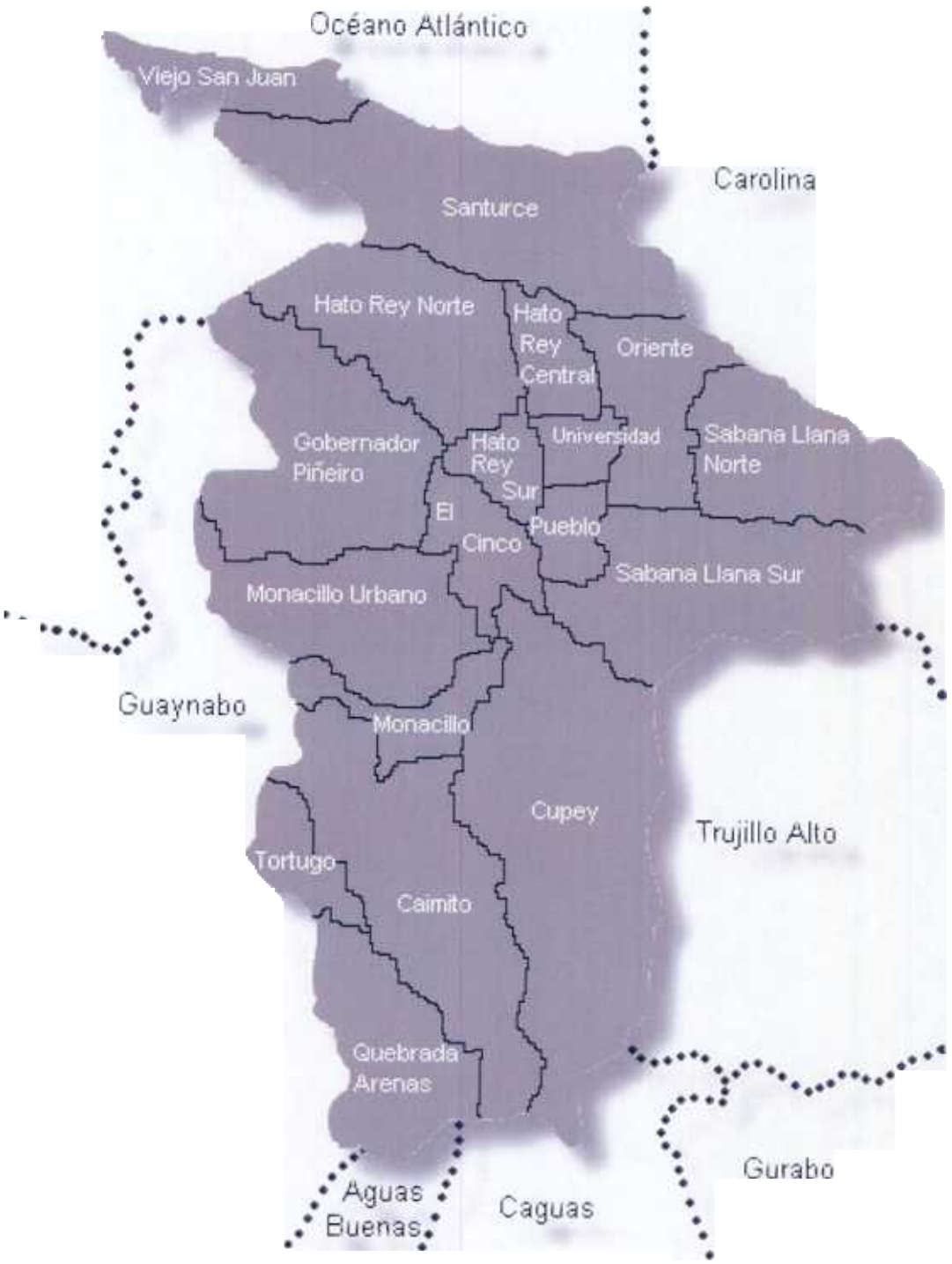
its population is 434,374 inhabitants[1] with a population density of 3,507.26 inhabitants per sq mi.

San Juan is located in the Northeastern of Coastal Plain region. The city lies north of the municipalities of Aguas Buenas and Caguas, east of the municipalities of Guaynabo and Bayamón and west of the municipalities of Carolina and Trujillo Alto. The Municipality is comprised of 18 wards, 16 of which fall within the former municipality of Rio Piedras and 8 of which are further subdivided into sub-barrios. These are:

1. San Juan Antiguo
2. Santurce
3. Hato Rey Norte
4. Hato Rey Central
5. Hato Rey Sur
6. Universidad
7. Pueblo
8. Oriente
9. Sabana Llana Norte
10. Sabana Llana Sur
11. El Cinco
12. Gobernador Piñero
13. Monacillo Urbano
14. Monacillo
15. Cupey
16. Caimito
17. Tortugo
18. Quebrada Arenas

[1] Based Census 2000 Population, Housing Units, Area, and Density Summary, Ponce, Puerto Rico, Http://factfinder.census.gov/home/en/datanotes/expsf1u.htm.

Figure 1-1
Municipality of San Juan



The population density of the Municipality of San Juan Wards, according to the 2000 Census, is summarized in Table 1-1.

Table 1-1
Population Density by Ward

Barrio	Habitantes	Densidad
Caimito	19,413	3,595
Cupey	31,072	4,143
El Cinco	8,426	6,019
Gobernador Piñero	49,427	11,233
Hato Rey Central	22,504	22,504
Hato Rey Norte	16,002	4,445
Hato Rey Sur	12,915	16,144
Monacillos	13,481	11,234
Monacillos Urbano	28,707	8,699
Oriente	37,621	22,130
Pueblo	8,804	12,577
Quebrada Arenas	2,762	1,151
Sabana Llana Norte	31,580	13,158
Sabana Llana Sur	43,716	10,409
San Juan Antiguo	9,696	9,696
Santurce	95,184	18,305
Tortugo	3,877	4,308
Universidad	2,558	4,263
Total San Juan	437,745	9,158

In general the Municipality of San Juan can be divided into three (3) distinct geomorphologic regions. The first region, to the north of the Municipality, includes the islet of San Juan, the Atlantic coast to the north and the Martin Peña Channel to the south. This region is characterized by the interrelation between land and the coast line; the Bay of San Juan Estuary is its fundamental natural component. Within this system we find the Atlantic coastline, the San Juan Bay, the San Antonio Channel, the Condado Lagoon, the Martin Peña Chanel, Los Corozos Lagoon and the San José Lagoon. At the regional level this band includes to the east the Municipalities of Loíza and Carolina, the Torrecillas and Piñones Lagoons and the Piñones State Forest; to the west it includes the marine coast, the Cataño marshland and the Bocavieja Cove.

The second region constitutes the costal plains, which include the hydrographic basin of the Río Piedras River and the Juan Méndez Creek. This costal plain is characterized the mountainous formations within, in which the Botanical Garden and the lands of the future Urban Forest are located.

The third zone is the southern area of the Municipality, characterized by an escarped topography, which includes the "Aljibe Las Curías", whose drainage line diagonally crosses the city until it reaches the San Juan Bay. To the east, in the municipalities of Trujillo Alto, Caguas and Gurabo is Lago Carraízo and the hydrographic system of the Grande de Loíza River.

The southern most part of the watershed rise to an elevation of about 300 meters above mean sea level. The eastern and western boundaries of the upper part of the basin runs at elevations greater than 100 meters above mean sea level, and mostly above 150 meters. The western boundary follows very closely the route of Highway No. PR-842 up to a point southeast of El Minao community.

The lower sectors of the basin have experienced great physiographic changes since 1940 due to the construction of large urban developments. The Buena Vista Creek, Josefina Creek, Doña Ana Creek and Margarita Creek basins are almost completely urbanized, and the natural creek channels adjacent to these urbanizations have been improved and paved. The Guaracanal Creek basin is subjected to similar man-made physiographic change.

Before the occurrence of those man-made physiographical changes the lower end of basin, was a broad, flat, lowland area that extended between and the old railroad and the shores of San Juan Bay. Most of this area was below the 1 meter contour as reflected USGS Topographic quadrangle of 1940 and was marshy and swampy in character. In the east-west direction, this below 1 meter contour area extended from the old Highway No. PR-2 to the Caño Martin Peña, and provided a significant amount of volume storage to flood waters overflowing the very low banks of the old Puerto Nuevo River channel. In addition the flat topographic configuration of the area south of the old railway and extending upstream appears to indicate that this area was subject to floods by RÍo Piedras River.

At present the patterns of the San Juan Metropolitan areas subjected to flood hazards have changed somehow under different hydrologic and physiographic conditions. Landfill was made south of J. F. Kennedy Avenue; the northern landfilled area was

used for the construction of port facilities with elevations of not less than 15 meters a.m.s.l. Part of the southern landfilled area is occupied by Bechara Industrial Development with ground elevations of 1.7 a.m.s.l. and so on. The main bodies of water in the Municipality of San Juan are Río Piedras River and the San Juan Bay.

The Río Piedras River drains a roughly eight shaped basin located on the north coast of Puerto Rico and finally discharges into San Juan Bay at Constitution bridge crossing. The mouth of Río Piedras River was originally located about 200 meters southwest from the Constitution Bridge, but was brought to its present position after completion of the River diversion works undertaken by the government. At that time, the lowest reach of the Río Piedras River was known as Puerto Nuevo River and this name has been preserved for the diverted portion of the River. In this document the entire length of river from the headwaters to the mouth will be referred as the Río Piedras River. The total length of the Río Piedras River is around 17.8 kilometers from the Constitution Bridge to the headwaters. The total area covered by Río Piedras River basin is approximately 26 square miles.

Among the tributaries of the Río Piedras River are the Margarita, Josefina, Doña Ana and Buena Vista Creeks, below Highway No. 2 bridge. Above this bridge, Río Piedras River is fed by runoff coming from Guaracanal, Los Guanos and Las Curias Creeks. Margarita Creek enters Río Piedras River from the west at a point about 2.2 kilometers upstream of the Constitution Bridge. Between Franklin D. Roosevelt and Las Americas Expressway, runoff from Josefina Creek and Doña Ana Creek system enters Río Piedras River from the south. This system drains an intensively urbanized area. Buena Vista Creek joints Río Piedras River from the south at a point about 700 meters upstream of Jesus T. Piñero bridge crossing and drains approximately 2 square miles of densely urbanized area. Above (south) of Highway No. I bridge, crossing Río Piedras River is joined from the east by Guaracanal Creek which drains about 19 square miles of land which at present is being developed for urban purposes at a rapidly growing rate. Los Guanos and Las Curias Creeks enter Río Piedras River from the east at headwater areas and its tributary area to the lower reaches is approximately 7.3 square miles or about 28% of the total watershed.

The Municipality of San Juan operates a municipal separate storm water sewer system located in San Juan, Puerto Rico which includes the old urban area, and 18 wards within the municipality territorial boundaries. The San Juan municipal separate storm water sewer system is interconnected with the Highway and Transportation Authority storm water sewer system, which is operated and maintained by the Puerto Rico

Department of Transportation and Public Works, and the Puerto Rico Aqueduct and Sewer Authority (PRASA) combined sewer system.

ACTIVITIES SUBJECT TO NPDES PERMIT APPLICABILITY

Municipal separate storm water sewer system located within the territorial boundaries of the Municipality of San Juan, Puerto Rico.

NAME, MAILING ADDRESS, AND LOCATION OF FACILITY FOR WHICH THE APPLICATION IS SUBMITTED

Municipality of San Juan
PO Box 9024100
San Juan, Puerto Rico 00902-4100

1.4.1 NPDES (MS4) Program Point of Contact Municipality of San Juan

Municipality of San Juan
Attn: Eng. María Matos Zayas, Executive Officer - Environment
Department of Environmental Protection
PO Box 9024100, San Juan, Puerto Rico 00902-4100
Telephone: (787) 783-2367 Ext. 2433
Fax: (787) 783-3776

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE

Standard Industrial Classification (SIC) Code for the Municipality of San Juan is 9199.

OPERATORS NAME, MAILING ADDRESS, TELEPHONE, OWNERSHIP STATUS, AND FEDERAL, STATE, LOCAL, TRIBAL OR OTHER PUBLIC ENTITY.

Municipality of San Juan
Attn: Eng. Edgardo Torres Rivera, Executive Sub-director
Operations and Engineering Division
PO Box 9024100, San Juan, Puerto Rico 00902-4100

1.7 PERMITS OR CONSTRUCTION APPROVALS RECEIVED OR APPLIED UNDER EPA

1.7.1 Federal Permits or Construction Approvals

Construction permits are regulated by the Commonwealth of Puerto Rico Administration of Permits and Regulations (ARPE by its Spanish acronym); Resource Conservation and Recovery Act permit program is administered jointly by the Puerto Rico Environmental Quality Board and the US Environmental Protection Agency Region 2; the Water Quality Act NPDES permit program is administered by he US Environmental Protection Agency Region 2; the Clean Air Act and the Underground Injection Control permit programs are administered by the Puerto Rico Environmental Quality Board; the Safe Drinking Water Act is administered by the Puerto Rico Department of Health; and Section 404 and Section 10 of the Water Quality Act are managed by the US army Corps of Engineers and the US Environmental Protection Agency.

1.7.1.1 Resource Conservation and Recovery Act

Colegio Tecnológico de San Juan - PRR000014282
Municipality of San Juan - PRR000016030
PR Municipio San Juan Obras Públicas - PRR000011262
San Juan Landfill - PRD980640973

1.7.1.2 Underground Injection Control

The municipality of San Juan operates a number of facilities subject to UIC permits. However, at this time the permit information is not available. As part of the implementation phase the Municipality will verify which facilities are subject to UIC permitting requirements and obtain copies of the permits.

1.7.1.3 NPDES Program under the Clean Water Act

National Pollutant Discharge Elimination System (NPDES) PHASE II, Regulated Small Municipal Separate Storm Sewer Systems (MS4). Also, see Appendix B (permits for a list of NPDES permits issued.

1.7.1.4 Non-attainment Program under the Clean Air Act

The Municipality of San Juan is located within an attainment area.

1.7.1.5 National Emissions Standards for Hazardous Air Pollutants Preconstruction Approvals under the Clean Air Act

None issued.

1.7.1.6 Ocean Dumping Permits under the Marine Protection Research and Sanctuaries Act

None issued.

1.7.1.7 Dredge or Fill Permits under Section 404 of the Clean Water Act

The municipality of San Juan does not have a list of projects that require dredge or fill permit at this time. As part of the implementation phase the Municipality will verify which projects are subject to dredge or fill permit and will obtain copies of the permits.

1.7.2 State Permits or Construction Approvals

1.7.2.1 Puerto Rico Environmental Quality Board

- Air Pollution Operation Permits for Emergency Generators and Flood Control Pumps – See Appendix B
- Registration of Underground Storage Tanks (DPWE) – UST-02-88-0107
- Permit to Transport Non-Hazardous Solid Wastes (DS-1 Permit) – SR-650074
- General Consolidated Permit and or CES Plan (Sedimentation and Erosion Permit) for various MSJ construction projects
- Bio Medical Waste Permit (Municipal Hospitals and CDT)

As part of the implementation phase the Municipality will verify which facilities are subject to EQB permit requirements ad obtain copies of the permits. Also, copies of all EQB permits issued for the various municipal projects will be obtained.

.7.2.2 Puerto Rico Sewer Authority

Transportation and Disposal of Sanitary Wasters into the Puerto Nuevo POTW –ADG-87-023.

As part of the implementation phase the Municipality will verify which facilities are subject to PRASA permit requirements ad obtain copies of the permits.

1.7.2.3 Puerto Rico Department of Natural Resources and the Environment

Various Construction Permits for Projects owed by the MSJ. As part of the implementation phase the Municipality will verify which facilities are subject to DNRE permit requirements ad obtain copies of the permits.

1.8 STORM WATER SEWER MAP

Included in Appendix A (Storm Water Sewer Map) is a map depicting the storm sewer system within the geographical extension of the Municipality of San Juan. At the present time, the Municipality storm water sewer map covers approximately 80 percent of the municipal MS4. As part of the implementation phase of the NPDES it is the Intention of the Municipality of San Juan to complete and update the map.

1.9 DESCRIPTION OF THE MUNICIPAL STORM WATER SEWER SYSTEM

The Municipality of San Juan Storm Water Sewer System (MS4) in the urban areas in general consist of a series of catch basins, typically located within the right-of-way of municipal and state roads, interconnected by underground concrete or PVC pipes which normally discharge to the Atlantic Ocean. In the rural areas the Municipal MS4 system typically consists of a series of interconnected open channel culverts, which run parallel to municipal and state roads, and usually discharge to a surface water body. It is important to note that the municipal separate storm water sewer system is interconnected with the storm water sewer system operated and maintained by the Puerto Rico Department of Transportation and Public Works and that of the Highway and Transportation Authority. Also, interconnected to the Municipal MS4 system are the discharges from NPDES (stormwater) permitted facilities and PRASA Pre-treatment permitted industrial and commercial facilities.

The Municipal Public Works, Engineering and Construction Department (PWEC) is responsible for the operation and maintenance of the stormwater sewer system and associated facilities within the Municipality of San Juan. The principal responsibility of the PWEC is to perform a preventive maintenance and upgrade program. The PWEC offers services such as open channel cleaning and catch basin clean up. Open trash dumping sites elimination, street sweeping, road side vegetation maintenance, septic

tank maintenance and cleaning and other related services are also rendered by the Environmental Protection Department (EPD). The Municipality also manages the Animal Protection Control Division that is responsible for eliminating dead and stray animals from the streets, which reduces pet waste and pollutants is the storm water runoff.

As the Municipality of San Juan implements the proposed Storm Water Management Plan a more accurate description (capacity, operation, etc.) of the Municipal MS4 system can be provided.

ESTIMATED SQUARE MILEAGE SERVED BY THE MS4 SYSTEM

The estimated square mileage served by the MS4 System is 47.7 m^2. However, it must be noted that a more accurate estimate can be provided as the Municipality implements the proposed Storm Water Management Plan.

PROPOSED STORM WATER MANAGEMENT PLAN

The Municipality of San Juan has many regulatory and public responsibilities. One of these is the development of a Storm Water Management Plan (SWMP). The SWMP will be developed to meet the regulatory requirements of the National Pollutant Discharge Elimination System (NPDES) Phase II Rule and to assist the Municipality in maintaining and improving the Municipality drainage facilities which include pipelines, structures, basins, ditches, swales, ponds, underdrains and drainage wells, to ensure that they perform to design capacity and that all receiving bodies meet state and federal standards for water quality. It will also be an important tool for use in the day-to-day operations and as a public reference document. Along with regulatory issues, this plan will addresses protection of property from flooding and erosion, identifies health and safety issues related to water resources, and will make recommendations for the preservation of environmental and aesthetic benefits to the community.

Through the use of field observations, results of past and future studies, hydrologic/hydraulic computer modeling, and input from Municipality staff and a proposed Citizens Advisory Committee, the SWMP will identify existing problems and potential future problems within the Municipality. A combination of regulatory requirements, public education, increased maintenance activities, and capital improvements will be recommended to solve identified problems. The major plan elements include the following:

- Development of a proposed storm water ordinance that, among other things, establishes minimum requirements for new development and redevelopment, prohibits illicit discharges into surface waters, and requires maintenance of privately owned storm water facilities.

- Development of public education opportunities to inform the community of water quality issues, and, specifically, the new ordinance and its requirements.

- Develop a Storm Water Assistance Program, to assist businesses and persons in their efforts to comply with NPDES storm water regulations and will educate citizens about storm water runoff and associated concerns.

- Hydrologic and hydraulic computer modeling analysis of the major drainage basins in the Municipality to simulate existing flows, project future flows, and evaluate system requirements.

- Analysis of localized flooding and water quality problems and solutions, and development of a prioritized list of recommended drainage system improvements.

- Development of a Capital Improvements Program.

- Development of a Maintenance and Operations Program

- Development of a Public Education.

- Development of a Compliance Management Program to among other things, monitor illicit discharges into surface waters, storm water discharges associated with industrial activity and construction sites.

- Description of the overall program costs.

- Analysis of funding options and the creation of a storm water utility.

The proposed SWMP will focus initially on a system inventory and analysis of drainage and water quality issues followed by a 5 year capital improvement program, a facilities maintenance program, and a comprehensive storm and surface water code and policy. As envisioned, the SWMP will address the drainage network base map, hydrologic and

hydraulic analysis and modeling, if required, for the principal surface water bodies (creeks and rivers), environmental and water quality issues, capital improvement program, storm water facilities maintenance program and a comprehensive Storm Water Management Code and Policy.

1.11.1 Proposed Work Plan

Under the direction of the Environmental Protection Department, a work plan will developed at the beginning of each year based on priorities. Semiannual meetings will held to update all partnership members and Citizens Advisory Committee on the status of the planned activities. A written annual report will be prepared and distributed at the end of each year. The anticipated activities are currently divided into six major tasks:

1.11.1.1 Task 1: Technology Assessment, Development, and Demonstration

Water supply and water quality issues are becoming more important in the Municipality as a result of population growth, increased irrigation and new industry. Choosing the right technological solutions to deal with water supply issues is key to the future of the region. The goal of this task is to ensure that the Municipality benefits from the best water management technologies available.

The objective of this task is to identify and/or develop solutions to water supply and water quality issues facing the Municipality using innovative or alternate technologies and practices.

1.11.1.2 Task 2: Water Resource Assessment and Analyses

Numerous studies have been performed and will be conducted on a variety of local and regional water issues, including watershed management, flooding, drought, water supply concerns, and environmental problems. Water quality and quantity data have been collected through the monitoring programs of the U.S. Army Corps of Engineers (USACE), the U.S. Geological Survey (USGS), the U.S. Department of Agriculture (USDA), and other federal and state agencies. This task will provide the Municipality and its citizens with easy access to water-related information so that decisions can be based on the best data available.

The objective of Task 2 is to provide the Municipality and its citizens with access to data

and information so that scientifically valid management decisions can be made on important issues that impact the water resources of the basin.

1.11.1.3 Task 3: Anthropogenic Impacts on Water Resources

New and more stringent federal regulations regarding water quality are making it more difficult for the Municipality to meet water quality standards and for industry and municipalities to meet wastewater discharge limits. The Municipality, which continues to grow, is concerned about meeting current and future water demands. For economic development to continue, the best possible information is required on the water resources available and potential future water needs so that scientifically valid management decisions can be made on important issues that impact the water resources of the basin.

The main objective of Task 3 is to assess the impacts from human activities on water resources in the watershed basins within the Municipality. This task also investigates opportunities for continued economic development while identifying new methods to reduce the environmental impacts from water consumption and wastewater loads.

1.11.1.4 Task 4: Water Resource Monitoring

Monitoring programs are the key to protecting the health and sustainable use of water resources. In recent years, more stringent environmental regulations have increased water quality monitoring by public and private entities. Federal and state agencies are actively developing new monitoring initiatives, as well as maintaining current programs. Although numerous monitoring efforts are under way, coordination of these efforts has been slow to develop. Coordinating monitoring efforts and results presents unique challenges because the methods and goals of the programs can vary significantly.

The objectives of Task 4 are to track monitoring efforts of stakeholders and regulatory agencies in the Municipality, development of monitoring efforts, and perform monitoring.

1.11.1.5 Task 5: Education and Information Dissemination

An integral component of this water management program for the Municipality of San Juan is to provide a forum dedicated to identifying and discussing relevant water-related issues. This forum is structured for a broad sharing of data, information, experience, technology, and perspectives on key water issues targeted by the community.

Information dissemination and education foster partnerships and raise the level of awareness of water resource issues. A proactive water management strategy is maintained through education and the open exchange of information and technical expertise.

The objectives of this task are to share data, information, experience, technology, and perspectives on key water issues targeted by the community and to keep the public abreast of new developments regarding the region's water resources.

1.11.1.6 Task 6: Development of a Watershed Management

Task 6 provides the basis for the integration of previous and current activities for Tasks 1 through 5 and the evaluation of how those activities affect the hydrology, ecology, and economy of the Municipality. The valuable information obtained from Tasks 1 through 5 will be used to create a framework for an overall watershed strategy for the Municipality by first developing a watershed management conceptual model. The framework will help to determine what information is missing and what other factors need to be considered in order to develop the conceptual model. A model that incorporates changing demographics, land uses, water supply and demands, environmental health and ecologically sensitive areas, and a host of other information will be an essential tool for shaping a water management strategy. The emphasis is to create a strategy, rather than a plan, with which to approach watershed issues. The distinction is important if the goal of making tangible progress in solving present and future basin issues is to be achieved.

The objective of this task is to provide the Municipality and other watershed management entities with information vital to making informed decisions needed to ensure a reliable and safe water supply well into the future.

DESCRIPTION OF MEASURABLE GOALS FOR THE BEST MANAGEMENT PRACTICES TO BE IMPLEMENTED

Minimum Control Measure 1 – Public Education and Outreach

Target Audience - Citizens of all age groups of the community, including students.

Goal - The SWMP activities implemented under Minimum Control Measure (MCM) 1 will focus on increasing public awareness of the harmful effects of storm water runoff and its

potential to affect the water quality in the San Juan Small Regulated Municipal Separate Storm Sewer System.

Best Management Practices

A. Storm Water-Related Public Service Announcements - Develop, produce, and air 30-second radio-based storm water-related public service announcement (PSA) segments to increase the public awareness of the storm water pollution issues within the area.

   Measurable Goal(s) - The development of the storm water-related segments; and the number of segments radioed each year.

B. Local Storm Water Runoff Display - Maintain a 3-dimensional plastic model of a local miniature community to offer a hands-on approach to demonstrate water pollution of watersheds caused by various urban runoff sources.

   Measurable Goal(s) - The number of community events and schools the model is displayed into elicit support from the community; and the number of people that have viewed the model.

C. Educational Involvement/Partnerships/Outreach with the Schools - Develop an educational program to reduce the storm water pollutants.

   Measurable Goal(s) - A minimum of 50% of all grade school children will be educated every two years on storm water pollution issues.

D. Educational Outreach to Community Homeowners on Lawn Care - The Municipality, in partnership with local commercial entities, and area university extension services, will plan, design, and develop a regional lawn care education and outreach program highlighting storm water runoff issues.

   Measurable Goal(s) - Sponsor an annual lawn care seminar in cooperation with commercial entities; monitor the number of partnerships established with local lawn care businesses, suppliers, and retail stores; and monitor the number of property owners that attended training workshops for lawn and garden care.

E. Development and Distribution of Storm Water-Related Materials - The Municipality will develop a community newsletter to convey storm water information throughout the area and will also develop a "toolbox" of public outreach activities that can be used for community education and outreach with respect to storm water pollution issues.

Measurable Goal(s) - The number of copies of the newsletter in circulation; and number and description of toolbox items developed and used.

F Storm Water Web Page - The Municipality shall develop a storm water Web page associated with its existing Web site.

Measurable Goal(s) - The number of visits to the storm water Web page.

G. Storm Water Pamphlets, Booklets, and Flyers - Develop storm water pamphlets, booklets, and flyers in partnership with the U. S. Environmental Protection Agency (EPA) and State Agencies, intended to solicit interest in a specific storm water event or activity or to promote storm water education and positive behaviors.

Measurable Goal(s) - A list compiled of target audiences and possible activities for each; number of materials created and distributed; the number of events attended with displays; and the number of people at an event who saw the display (signed the guest book) or took a pamphlet/booklet.

H. Expansion of Educational Involvement/Partnerships with the Schools - The Municipality shall develop a relationship with the local schools by developing a storm water outreach program for a general age-range target.

Measurable Goal(s) - The number of classes, schools, teachers and students that participate in the storm water workshops or activities as part of a regular school curriculum or as part of an after-school program; the number of educational materials distributed to schools.

1.12.2 Minimum Control Measure 2 – Public Involvement and Participation

Target Audience - Activities will be directed toward all citizens of the community.

Goal - Increasing public involvement and participation in reducing the harmful effects of storm water runoff and its potential to affect the water quality.

Best Management Practices

A. Storm Drain Stenciling Program - The Municipal Separate Storm Sewer Systems shall implement a community program to label storm drains.

   Measurable Goal(s) - The number or percentage of storm drains stenciled; the number of stenciling volunteers; and the number of door hangers distributed

B. Annual Cleanup - Promote an annual spring cleanup that will directly involve citizens in water pollution prevention and create awareness that most storm drains discharge untreated waters directly into the river and ocean.

   Measurable Goal(s) - The number of stream cleanups; the number of cleanup groups or participants; the quantity of trash and recyclables that were removed by the cleanup; and the number of stream miles cleaned.

C. Volunteers Monitoring Program - Develop a volunteer monitoring program during the storm water permit term that will allow tracking water quality changes over time.

   Measurable Goal(s) - The number of volunteers participating in monitoring program; the frequency of monitoring in the watershed; and the number of volunteer monitoring training sessions held.

D. Adopt-A-Park - Develop a volunteer Adopt-A-Park program as a public outreach tool and shall allow participation by any group or organization within the community.

   Measurable Goal(s) - Track the number of participants in Adopt-A-Park program; and record the quantity of trash and debris removed by Adopt-A-River volunteers.

E. Support of Local Organization(s) - Support a local organization that incorporates the ideas and resources of local governments, citizens, nonprofit environmental

groups, and local universities to promote the importance of the resources and its benefits to the community.

Measurable Goal(s) - The number of volunteers attracted to the watershed organization; and the number of actions taken as a result of the watershed organization.

F. Public Stakeholder Meetings - Hold one public stakeholder meeting each year and develop the guidelines to determine who the stakeholders are, where the meetings will be held, how the stakeholders will be informed of the meetings, and how results will be used and distributed.

Measurable Goal(s) - The number of attendees at the annual meeting; and the number of actions taken as a result of stakeholder meetings.

G. Community Hotline - Develop the scope of a community hotline to answer specific storm water questions and identify problems or incidents related to storm water management practices.

Measurable Goal(s) - The number of calls received by hotlines, and the number of problems or incidents identified and remedied as a result of hotline calls.

1.12.3 Minimum Control Measure 3 – Illicit Discharge Detection and Elimination

Target Audience - All citizens, with an emphasis on the industrial and commercial sectors of the community.

Goal - Developing, implementing, and enforcing a program that will reduce and eliminate impacts of illicit discharges into the storm sewer system.

Best Management Practices

A. Storm Sewer System Map – Complete the storm sewer system map.

Measurable Goal(s) - The linear feet of conveyances recorded; the number of structural pollution control devices counted; the number of discharge points recorded.

B. Implement Regulations to Enforce Non-storm Water Discharges - Prohibit non-storm water discharges into the storm sewer system through ordinances and resolutions, and develop and implement actions required to enforce these regulations.

Measurable Goal(s) - The number of ordinances and resolutions passed; the number of penalties enforced upon the participants of illegal dumps; the number of building codes developed to prohibit connections; the number of new ordinances developed for new building inspections, the number of potential connection sites inventoried; the number of new buildings inspected.

C. Educational Outreach - Educate public employees and commercial and industrial property owners on the hazards of improper waste disposal and ways to detect and eliminate illicit discharges.

Measurable Goal(s) - The number of flyers, posters, or other public education tools distributed; the number of illegal dumps reported by citizens; the number of locations determined to be prime areas for illegal dumping; the number of illegal dump cleanups completed; the number of illicit connections reported by business employees; the number of illicit connections found, repaired or replaced; the number of unwarranted connections reported, found repaired or replaced.

D. Program to Detect, Identify, and Eliminate Illicit Discharges - Develop a program to detect and identify illicit discharges of non-storm water flows and when detected as significant contributors of pollutants, develop a plan to control and eliminate the contributors to the storm sewer system:

Measurable Goal(s) - Inventory conducted and sites prioritized for inspection; the number of field tests conducted in high-risk areas; the number of illicit connections reported by business employees; the number of survey responses indicating a possible illicit connection; the number of illicit connections found; the number of illicit connections repaired or replaced; and the number of new buildings inspected.

E. Program to Detect, Identify, and Eliminate Illegal Dumping - Through ordinances and resolutions, prohibit illegal disposal of waste in an unpermitted area or into a storm drain system and develop and implement the actions required to enforce these regulations.

Measurable Goal(s) - The number of ordinances and resolutions passed; the number of penalties enforced upon the participants of illegal dumps; the number of building codes developed to prohibit dumping sites; the number of illegal dumps reported by citizens; the number of new dump sites inspected; the number of illegal dump sites cleaned up; the number of flyers, posters, or other public education tools distributed or programs started; the number of new ordinances developed for enforcement of the dump site inspection.

F. Program to Detect, Identify, and Eliminate Wastewater Connections to the Storm Drain System - Through ordinances and resolutions, the Municipality shall prohibit unwarranted connection of a wastewater system to a storm drain system and shall develop and implement all procedures, programs, and actions required to appropriately enforce these regulations. Emphasis shall be placed on nonresidential facilities (industrial or business) primarily during building and reconstruction activities.

   Measurable Goal(s) - The number of ordinances and resolutions passed for mandatory inspections of new buildings; the number of unwarranted connections reported by citizens and/or business employees; the number of unwarranted connections found; the number of unwarranted connections repaired or replaced; the number of penalties enforced upon the participants of unwarranted connections; the number of building codes developed to prohibit unwarranted connections; the number of flyers, posters, or other public education tools distributed or programs started; the number of new ordinances developed for enforcement of the unwarranted connections; the number of survey responses indicating possible unwarranted connections.

G. Program to Manage Recreational Sewage Discharges - Through ordinances and resolutions, develop a program manage recreational sewage measures that seek to regulate wastewater generated from outdoor activities; and develop and implement the actions required to enforce these regulations.

   Measurable Goal(s) - The number of citizen complaints made reporting illegal sewage dumping; the number of pump-out stations installed; the amount of waste collected at the pump-out stations; the number of new signs added to remind citizens of dumping policies; the number of penalties enforced upon the participants of illegal recreational sewage dumping; the number of flyers, posters, or other public education tools distributed or programs started to inform citizens

about recreational sewage dumping; the number of new ordinances developed for enforcement of recreational sewage dumping.

H. Program to Detect and Eliminate Sanitary Sewer Overflows - Develop a program to establish and enforce policies for designing, screening, and maintaining the sanitary sewer system;

Measurable Goal(s) - The frequency of routine maintenance activities; the number of overflows reported; the number of overflow causes that were identified during inspections; the number of sites repaired.

Program to Detect and Eliminate Failing Septic Systems - Develop a program to detect and eliminate failing septic systems; and develop and implement the actions required to enforce proper site and sizing, maintenance, and post-construction inspection considerations of the septic system.

Measurable Goal(s) - The number of routine maintenance and inspection activities; the number of field tests and screen tests conducted; the number of post-construction inspections conducted; the number of scheduled pump-outs conducted and sites repaired; an inventory of tanks and when they were last serviced.

1.12.4 Minimum Control Measure 4 – Construction Site Storm Water Runoff Control

Target Audience - Pollutants of construction activities that disturb storm water flow in projects that affect more than one (1) acre.

Goal - Developing, implementing, and enforcing a program that will reduce or eliminate the impacts of storm water runoff from construction activities that result in a land disturbance of greater than or equal to one acre into the storm sewer system.

Best Management Practices

A. Ordinances or Other Regulatory Mechanisms - Develop ordinances or other regulatory mechanisms to require erosion and sedimentation controls for polluted runoff from construction sites with a land disturbance of greater than or equal to one acre.

Measurable Goal(s) - Whether or not ordinances were developed for the following construction issues: special construction entrances, the development of the requiring certification, all regulations are followed for material storage, disposal, etc., address construction site runoff control, some natural vegetation should be preserved at construction sites.

B. General Construction Site Waste Controls - Develop and begin implementation of a program to control and eliminate construction site waste that may impact storm water runoff.

Measurable Goal(s) - The frequency of inspection and maintenance activities; whether or not construction vehicles are regularly inspected; the numbers of vehicle wash areas on-site; and the number of construction sites with designated vehicle maintenance and washing areas

C. Information Submitted by the Public - Develop procedures for the receipt, tracking, and consideration of public inquiries, concerns, and information submitted regarding local construction activities.

Measurable Goal(s) - Number of noncompliance reports received; number of construction site inspector follow-ups; number of valid noncompliance reports; number of stop-work notices or Notices of Termination (NOTs); number of documented acknowledgments and considerations of the information submitted.

D. Construction Site Inspection and Enforcement - Develop the procedures for construction site best management practices (BMPs) inspections and the enforcement of installed erosion and sedimentation control measures.

Measurable Goal(s) - The number of inspected sites; the frequency of inspection and maintenance of BMPs; the number of failed storm water BMPs; the number of BMPs reported to be in need of repair; whether or not an inventory of inspection and maintenance activities was created and is regularly maintained; and the number of enforcement actions taken, stop-work orders given, bonding requirements set and construction sites that use better land grading practices.

1.12.5 Minimum Control Measure 5 – Post-Construction Storm Water Management in Development and Redevelopment

Target Audience - Contractors, construction site operators, inspectors, and enforcement personnel.

Goal - Developing, implementing, and enforcing a program that will reduce or eliminate the impacts of storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects that are less than one acre and are part of a larger development plan, that discharge into the storm sewer system during the permit term throughout the community.

Best Management Practices

A. Best Management Practices I (Structural) - Require new developments the incorporation of dry/wet extended detention ponds or basins with outlets that have been designed to detain the storm water runoff to allow pollutants to settle.

   Measurable Goal(s) - The number of new dry/wet ponds installed.

   (1) Porous Pavement Program - Develop a porous pavement program such that this porous surface replaces traditional pavement, allowing parking lot storm water to infiltrate directly and receive water quality treatment.

   Measurable Goal(s) - The amount of new porous pavement added or replaced and the number of new development sites that use porous pavement.

   (2) Vegetative Practices (Stormwater Wetland Program) -_Develop a structural storm water wetlands program that incorporates wetland plants into the design.

   Measurable Goal(s) - The number of storm water wetlands created and acreage of impervious surface that drains to storm water wetlands.

   (3) Vegetative Practices (Grassed Swale Program) - The Municipality shall develop a series of vegetated, open channel BMPs designed to treat and attenuate storm water runoff for a specified water quality volume.

Measurable Goal(s) - The number of new grassed swales installed and acres drained by grassed swales.

(4) Runoff Pretreatment Practices - Develop a catch basin insert or an in-line storage program that shall typically include a grate or curb inlet and a sump to capture sediment, debris, and associated pollutants. Catch basin efficiency shall be improved using inserts that shall be designed to remove oil and grease, trash, debris, and sediment and are designed to drop directly into existing catch basins.

Measurable Goal(s) - Catch basins inventory completed; number of catch basins retrofitted with filtering devices and/or flow regulators.

B. Best Management Practice II (Nonstructural)

(1) Develop a regional growth planning process to contain sprawl development and direct new growth into previously developed areas, discouraging excessive low-density development.

(2) Develop green parking techniques to reduce the contribution of parking lots to the total impervious and, consequently, the amount of storm water runoff. All of the green parking techniques shall be applied in new developments and some redevelopment projects, depending on the extent and parameters of the project.

(3) Develop an alternative paver program that can replace asphalt and concrete and can be used for driveways, parking lots, and walkways. Alternative pavers shall replace impervious surfaces, creating less storm water runoff.

Measurable Goal(s) - The reduction in impervious surface area and the number of new green parking lots installed; and the amount of new alternative pavers installations added or replaced.

C. Best Management Practice III - BMP Inspection and Maintenance Program

Develop an inspection and repair program to maintain the effectiveness of post-construction storm water control BMPs. All BMPs shall be inspected for continued effectiveness and structural integrity at regular inspection intervals.

Measurable Goal(s) - The change in the proportion of BMPs that are well-maintained as a result of inspection and maintenance.

1.12.6 Minimum Control Measure 6 – Pollution Prevention (Good Housekeeping for Municipal Operations

Target Audience - Municipal employees and enforcement personnel.

Goal - Developing, implementing, and enforcing an operations and maintenance program that will reduce or eliminate the impacts of storm water pollution from open-space maintenance, vehicle and building maintenance, land disturbances, and storm sewer system maintenance during the permit term throughout the community.

Best Management Practices

A. Source Controls

(1) Pet Waste Collection Program - Develop a pet waste collection program as a source control using a combination of educational outreach and enforcement to encourage residents to clean up after their pets.

Measurable Goal(s) - The number of dog parks; the number of signs posted stating regulations; the number of educational materials distributed; whether or not a "pooper-scooper" ordinance was created to address pet waste; and the number of "pooper-scooper" stations installed

(2) Vehicle Maintenance Program - Develop and implement a pollution prevention measure for an outreach and training program directed at businesses and municipal fleets involved in vehicle maintenance.

Measurable Goal(s) - The number of employees trained in preventing pollution from automobile maintenance activities; the number of spills

reported; the number of educational materials distributed at garages, auto shops, and other automobile-related businesses.

(3) Vehicle Washing Program - Develop of a management measure that involves educating the general public, businesses, and municipal fleets on the water quality impacts of the outdoor washing of vehicles.

Measurable Goal(s) - The number of educational materials distributed to municipal employees; and the number of designated municipal vehicle washing areas.

(4) Landscaping and Lawn Care Program - Develop procedures for the control of storm water impacts from landscaping and lawn care practices

Measurable Goal(s) - The number of stores and gardens participating in the education program; the number of people trained in safe landscaping, lawn care, and pest management techniques; the number of classes or seminars offered in landscaping and lawn care; the number of educational materials distributed.

(5) Pest Control Program - Develop integrated pest management (IPM) procedures for limiting the impact of pesticides on water quality by educating residents and businesses on alternative uses, proper storage, and application techniques.

Measurable Goal(s) - The number of businesses participating in the education program; the number of municipal employees trained in IPM; pesticide levels in runoff and receiving waters; the number of educational materials distributed.

(6) Parking Lot and Street Cleaning Program - Develop procedures for pavement cleaning practices to remove surface sediment, debris, and other pollutants that are a potential source of pollution, to minimize pollutant discharge to receiving waters.

Measurable Goal(s) - Number of roads and parking lots inventoried and prioritized for cleaning; The number of scheduled road cleanings; the

suspended solids levels in runoff; the pounds of debris collected from street sweeping.

Roadway and Bridge Maintenance Program - Develop procedures for techniques that will reduce or eliminate pollutant loadings from road surfaces as part of an operation and maintenance program.

Measurable Goal(s) - Whether or not a current list of roadway and bridge construction is maintained; the quantity of debris removed from construction sites; The number of employees trained in pollution prevention techniques; the amount of deicing salts used; the number of catch basins at constructions sites that are cleaned regularly.

Storm Drain System Cleaning Program - Develop procedures for the regular inspection and cleaning of storm drain systems to reduce the amount of pollutants, trash, and debris. This program shall be applied to material and waste handling areas, paved and vegetated areas, waterways, and new development projects. Based on inspection results, repair or replacement measures shall be determined for proper operation. A summary of all inspections and repairs shall be maintained and submitted in the annual report.

Measurable Goals - Whether or not areas with high pollutant loadings were inventoried and prioritized for cleaning; the length of storm drain pipe cleaned regularly; the number of outfalls inspected and cleaned annually (which will be at least 20% of all outfalls maintained by the MS4 each year during the permit term); the amount of trash, sediment, and other pollutants removed during cleaning.

B. Materials Management

1 Alternative Products - Develop procedures for the use of alternative products that will prevent their hazardous counterparts from being disposed of improperly and contaminating storm water.

Measurable Goal(s) - The number of facilities storing hazardous materials; frequency of inspection and maintenance visits to storage facilities; number of personnel trained in hazardous-material handling and storage;

amount of waste generated by municipal operations; whether or not an inventory of hazardous materials was created for each storage facility.

Hazardous Materials Storage Program - Develop procedures for storage of hazardous materials.

Measurable Goal(s) - The number of regularly inspected storage units; the number of employees trained in hazardous material storage and maintenance; the total number of storage facilities equipped to store hazardous materials; the number of materials distributed educating citizens on home storage of hazardous materials.

Spill Response and Prevention Program - Develop procedures for spill response and prevention plans for sites where hazardous wastes are stored or used

Measurable Goal(s) - Whether or not an inventory of municipal facilities at risk for spills was created; number of leak-detection devices installed at municipal facilities; number of preventative maintenance procedures performed on tanks, valves, pumps, pipes, and other equipment; whether or not a spill response plan was developed for municipal facilities; number of personnel trained in spill response; number of regularly inspected high-risk facilities; and number of educational materials distributed to municipal employees.

(4) Used Oil Recycling Program - Develop procedures to make recycling motor oil and oil filters more convenient.

Measurable Goal(s) - The number of gallons of used oil collected from municipal operations; the number of recycling facilities that collect oil from municipal operations; the number of educational materials distributed to municipal employees.

(5) Materials Management Program - Develop procedures for managing chemicals, such as fertilizers, solvents, paints, cleaners, and automotive products.

Measurable Goal(s) - The number of facilities storing hazardous materials, the frequency of inspection and maintenance visits to storage facilities; the number of personnel trained in hazardous material handling and storage; the amount of waste generated by municipal operations; whether or not an inventory of hazardous materials was created for each storage facility.

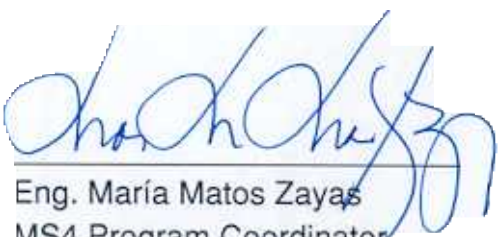
1.13 PERSON RESPONSIBLE FOR IMPLEMENTING OR COORDINATING THE APPLICANT'S STORM WATER MANAGEMENT PROGRAM

Municipality of San Juan
Attn: Eng. María Matos Zayas, Executive Officer – Municipal
Department of Environmental Protection
PO Box 9024100
San Juan, Puerto Rico 00902-4100
Telephone: (787) 783-2367 Ext. 2433
Fax: (787) 783-3776

1.14 SIGNATORIES TO PERMIT APPLICATION AND REPORTS

1.14.1 MS4 Program Coordinator Certification

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



Eng. María Matos Zayas
MS4 Program Coordinator

March 5, 2008
Date

1.14.2 MS4 Program Manager Certification

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

Eng. José J. Molina Resto
MS4 Program Manager

March 6, 2008
Date