

CHAPTER 2 – WASTEWATER REGULATORY ISSUES

2.1 Introduction

The principal regulations affecting GWA's wastewater utility are included in the federal Clean Water Act. This important body of regulations includes the rules that 1) govern treatment plant discharge requirements, 2) serve as the impetus for rules on wastewater biosolids, and 3) contain other key wastewater system requirements. The Clean Water Act also serves as the basic guide to the development of Guam's water quality standards and portions of its operator certification requirements.

The wastewater system may also be affected by drinking water regulations. The federal Safe Drinking Water Act (under the Surface Water Treatment Rule) requires that ground water sources affected by surface activities, such as wastewater spills and inadequate individual wastewater systems (e.g. septic tanks). The EPA and GEPA are evaluating whether Guam's Northern Lens (its sole source aquifer) should be designation as Ground Water Under the Direct Influence (GWUDI) of surface water. If this designation occurs, ground water would likely require additional treatment (such as filtration).

Two potential future regulatory requirements are also important to consider. The EPA has proposed rules governing Sanitary Sewer Overflows (SSOs) and related guidance on the Capacity Assurance, Management, Operations, and Maintenance (CMOM) of collection systems. Additionally, Guam's two largest wastewater treatment plants (Hagatna and Northern District) operate under secondary treatment waivers, which must be renewed every five years. It is possible that at some point in the future those waivers would not be granted in future NPDES permit renewals based on trends in other locales with similar waivers.

Each of the key regulations noted above is described in this chapter including:

- Clean Water Act
 - National Pollutant Discharge Elimination System (NPDES)
 - Biosolids
 - Guam Water Quality Standards
 - Operator Certification Program
- GWUDI of Surface Water
- Potential Future Regulatory Requirements
 - SSOs and CMOM
 - Potential Secondary Treatment Requirements

2.2 Clean Water Act

The Clean Water Act provides the principal regulatory basis for the wastewater system. The key parts include the NPDES permits, Biosolids regulations, water quality standards, and operator certification requirements.

2.2.1 National Pollutant Discharge Elimination System

The NPDES program is administered by EPA. GWA operates five treatment plants, which are required to have an NPDES permit governing the quality of the effluent they discharge into receiving water bodies. The key discharge requirements in the respective plant NPDES permits are summarized in Volume 3, Chapter 5 – Wastewater Treatment Facilities. The performance of the plants and records of compliance are also discussed in that same chapter. In general, the treatment plants are not complying with their NPDES discharge permits. Each of the plants is required to be brought under compliance with their permits and the WRMP defines a number of tasks to meet this requirement. Strong emphasis is placed on problems existing in the Northern District and Hagatna systems.

2.2.2 Biosolids

In 1993, EPA put into effect Title 40 of the Code of Federal Regulations (CFR), Part 503, *The Standards for the Use or Disposal of Sewage Sludge* (EPA, 1993). This regulation was developed as a requirement by the Clean Water Act Amendments of 1987, to protect public health and the environment from any reasonably anticipated adverse effects of certain pollutants that might be present in sewage sludge. Specific details of this important regulation and GWA's compliance are described in Volume 3, Chapter 8 – Biosolids Management. Currently, Guam does not have regulations governing biosolids, but the federal biosolids regulations apply to GWA's treatment plants.

2.2.3 Guam Water Quality Standards

Guam EPA is responsible for setting and administering Guam Water Quality Standards, which set numerical standards for marine, fresh and groundwater bodies. These standards can affect requirements in the NPDES permits for GWA facilities.

A broader scope of the Guam Water Quality Standards includes oversight of a number of federal permits (most of which are identified in the Clean Water Act) for construction, fill, dredging, and discharges to Waters of the United States and Territorial Waters which require Territorial (GEPA) Section 401 Water Quality Certification (WQC). 401 WQC requires that construction or operation of a proposed project or facility will be conducted in a manner consistent with the Guam Water Quality Standards. All federal permits for work in marine waters, rivers, streams and wetlands require 401 WQC.

GEPA is also charged with establishing Total Maximum Daily Load (TMDL) limits, which are a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. Industrial activities can generate a number of pollutants in stormwater that can lead to violations of water quality standards, and construction activities typically generate sediment, which can affect related parameters such as turbidity and total suspended solids. Other pollutants may also be of concern, depending on local conditions.

Currently, there are no TMDLs established for Guam, but at such time as they are, GWA will need to comply with limits established for specified treatment plants. Those plants discharging into small streams such as Baza Gardens and Umatac-Merizo could be impacted most by the implementation of TMDLs.

2.2.4 Operator Certification Program

Another function of GEPA is to administer the Operator Certification Program governing the certification of personnel in charge of water and wastewater facilities. Specific duties under the certification program for the certification board include:

- Develop minimum standards and guidelines for classification of potable water supply systems and wastewater facilities
- Develop minimum standards and guidelines for certification of operators
- Facilitate reciprocity between certification programs
- Supervise the Administrator in the administration of the certification program
- Hear the appeals of any person aggrieved regarding certification and classification

The August 22, 2005 Quarterly Certification report required by the Stipulated Order gave the following information regarding compliance with the certification of operators:

Table 2-1 – Direct Responsible Charge Position Requirements

Position	Min. Cert	Level Min No.	Actual No.	Actual Level
Wastewater Treatment	III	3	3	III
Water Treatment	III	3	3	III
			1	IV
Water Treatment	II	2	2	III
Wastewater Collection	III*	2	3#	IV
	III	2	3	III
Water Distribution	IV	2	2	IV

Notes: *Required certification was revised to level III based on GEPA redesignation of the Northern and Central systems as Medium sized (from Large).

#Two level IV operators will be reassigned to other activities, leaving 3 Level III WW ODRC' and 1 Level IV WW ODRC (Minimum 2 required).

2.3 Ground Water Under the Direct Influence (GWUDI) of Surface Water

Wastewater pump station overflows that mimic significant rainfall have affected ground water quality. This information as well as other data being gathered by GEPA and EPA are being used to determine if the ground water in the Northern Lens might be considered GWUDI of surface water.

Land development standards are not currently protecting the EPA “Sole Source Aquifer” designation of the area, though GWUDI designation has not been made by GEPA at the time of this report. The topic of spill impacts and mitigation measures is covered in detail in Volume 3, Chapter 4 – Wastewater Collection System. Spill records are helpful to identify repeat problem areas, or those at high risk of producing future overflows. Other references regarding GWUDI are in Volume 2, Chapter 2 – Water Regulatory Issues and Volume 3, Chapter 6 – Septic Systems and Unsewered Areas.

Based on a review of the GWA spill information, a great majority of the recorded spills occurred at pump stations and were related to a power outage or other pump failure condition. The recorded spills from the gravity portion of the collection system were difficult to relate to a specific point on the collection system due to a lack of information. It is recommended that GWA identify future spills from the collection system with the corresponding manhole number so they can be easily incorporated into the Geographic Information System (GIS) for collection system evaluation. Spill location information displayed in the GIS compared to location of potential potable water contamination will be a useful feature as the system matures. A phased approach to preventing

septic tank influence on drinking water wells is described in Volume 3, Chapter 6 – Septic Systems and Unsewered Areas.

2.4 Potential Future Regulatory Requirements

In addition to GWUDI, other future regulatory requirements that may have a significant influence on wastewater systems include the proposed rules on SSOs and related CMOM guidance as well as potential changes to the secondary treatment waivers at the Hagatna and Northern District treatment plants.

2.4.1 SSO and CMOM Programs

EPA has proposed SSO regulations that are intended to provide communities with a framework for minimizing and reducing overflows from sewers, thereby reducing the health and environmental risks associated with such overflows. CMOM programs will be required under the SSO regulations to help ensure that communities have adequate wastewater collection and treatment capacities and that they incorporate standard operation and maintenance practices to assure good system performance. Many wastewater agencies have already embarked upon CMOM planning and implementation efforts to meet the new federal guidelines. Volume 3, Chapter 4 – Wastewater Collection System identifies capital projects to address collection system capacity limitations. Additionally, the chapter includes recommendations for improving collection system management, operation, and maintenance.

2.4.2 Secondary Treatment Waivers

The Clean Water Act allows waivers from the uniform secondary treatment standards if the following criteria are met:

- Compliance with water quality standards.
- Protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife.
- Allowance of recreational activities.
- Establishment of a monitoring program.
- Satisfactory toxics control programs, including an approved pretreatment program.
- No additional treatment requirements for other sources as a result of the waiver.
- No increase in effluent volume or amount of pollutants discharged above limits in 301(h) modified permit.
- Protection of public water supplies.

The NPDES permits for the Hagatna and Northern District treatment plants are under review by EPA and have been administratively extended. Based on a preliminary review, EPA has indicated that the waivers will be extended given GWA will be lengthening the plant outfalls as part of the Stipulated Order agreement. Based on discussions with EPA, we have assumed that these secondary treatment waivers will continue to be granted in the near future.

2.5 Conclusions

Although not comprehensive, the items above profile the highest priority wastewater regulatory issues facing GWA. Complying with NPDES permit requirements (including those related to biosolids

management and disposal) are high priorities. Collection systems must be upgraded to reduce spills to comply with current and anticipated regulations and reduce potential impacts on ground water.

2.6 Recommendations

Several recommendations identified in this chapter include:

- Continue on-going efforts to bring treatment plants into compliance with their NPDES permits
- Prepare for compliance with proposed SSO regulations including CMOM Programs
- Develop a contingency plan for the potential to meet requirements of a GWUDI designation of certain aquifers, particularly in the northern region
- Continue emphasis on qualifying personnel for certification in both water and wastewater systems

2.7 CIP Impacts

- Upgrade or replacement of treatment plants and collection system
- Electrical upgrades for water and wastewater systems
- SCADA system upgrades for water and wastewater systems
- Implementation of SSO regulations