PACIFIC GULF MARINE

EXECUTIVE SUMMARY
SS GEM STATE
Vessel Final In-Port Audit (TPA)
Alameda, California
July 23, 2012 to July 27, 2012

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BACKGROUND: From July 23rd to July 27th, 2012, ECM Maritime Services, LLC (ECM) as Third Party Auditor (TPA) under the Pacific Gulf Marine Revised Environmental Compliance Plan (R-ECP) attended the SS GEM STATE at Alameda, California to conduct a final in port audit pursuant to Clause VII of the Revised Environmental Compliance Plan.

- **SCOPE:**

  a) Assess the adequacy of the Environmental Management System and its conformance with the R- Environmental Compliance Plan and Marine Environmental Protection Requirements
  b) Review of the Vessel Certificates and Documentation.
  c) Evaluation of the vessel's personnel in knowledge, training and performance relating to compliance with the R-ECP & Management System.
  d) Evaluation of the vessel's engineering equipment in accordance with the R-ECP.
  e) Review of waste streams & handling procedures including garbage, sewage, oil waste/sludge and hazardous waste generation.
  f) Review management of Environmental Tag System and valve locking program.
  g) Review validity of current piping arrangements and appropriate manuals, schematics and documents required in the use of all pollution prevention equipment and activities.

- **Audit Team (ECM):**

  Rodney R. Walline

- **Audited Personnel:**

  Adrian Pasion, Chief Engineer
  Stephen Jahn, Chief Officer
  Jasper Brown, First Engineer
  George Cronk, Second Engineer
  Lawerene Hearn, Third Engineer
  John Young, Bosun
  Douglas Maravelias, QMED
  Stanley Castro, Q-Electrician

- **Audit & Reference Documentation**

  a) PGM Management System & Environmental Management System
  b) Revised Environmental Compliance Plan
  c) ISO 14001:2004 & 9001:2008
  d) SOPEP Manual
  e) Marine Environmental Protection Requirements
  f) NTVRP for SS GEM STATE
  g) Engine and Deck Log Books
  h) Oil Record Book Engine Room
  i) Garbage Log Book
  j) Ballast Water Management Plan
  k) Internal Audit Reports
  l) NPDES Log
  m) Masters Management Review
  n) Revised-Environmental Compliance Plan

NONCONFORMITIES

Please refer to the attached Vessel Audit Checklist for compliance verification and associated comments by section.

The following are intended to compliment the checklist, in providing a summary of audit findings. Recommended areas of improvement are included in the final section of this report.

Note: The term "Company" refers to Pacific Gulf Marine.

There were no nonconformities noted during this audit.

OBSERVATIONS

2. ENVIRONMENTAL POLICY

2.1 The Company has embedded the Environmental Management System (EMS) in the Company's Operations Manuals which consist of six (6) volumes. With the inclusion of the EMS in the Operations Manuals, the system will become an integral and permanent part of the Company's management system. The result of this integration is a large amount of information distributed throughout the six (6) manuals which causes difficulty in navigating the EMS. The crew had a difficult time finding references for the TPA questions. The officers and crew were able to locate requested reference material, however the times to successfully locate the appropriate reference varied with the individual, with some having more difficulty than others.

8. SHIPBOARD OPERATIONS
A. Chief Engineer

8.9 Mechanical seals have not been fitted to the following:

Engine Room:
- Main Circulating Pump
- #1 LO Service Pump
- #2 LO Service Pump
- #1 FO Service Pump
- #2 FO Service Pump
- #1 FO Transfer Pump
- #2 FO Transfer Pump
- # 1 Vacuum Pump
- # 2 Vacuum Pump

#5 Hold Crane Diesel Space;
- # 1 SW Cooling Pump
- # 2 SW Cooling Pump

The use of packing glands, under normal operating conditions, would tend to increase waste stream to the bilges, in comparison to pumps fitted with mechanical seals.

10. OPERATIONAL CONTROL

10.5 Some spare parts on the Environmental Critical Equipment list were not in inventory. The approved list of Critical Spare Parts for Environmental Equipment was insufficient and did not list all parts that are considered Critical by the Chief Engineer.

ADDITIONAL OBSERVATIONS

1. Spots of grease from the deck crane cables present on deck and hatch covers near the crane. This poses possible safety and environmental issues if not monitored and addressed in a timely manner.

2. Two drums of diesel oil on open deck with no containment or protection from possible damage to minimize the possibility of leakage on deck.

3. Flexible hoses and portable pumps. The hoses are neatly stowed and affixed with a number tag to identify them and their use. Hoses and pumps are checked out and notation made, however;
   - **a.** The compartment where the hoses/pumps are stowed should be locked or sealed properly to eliminate free access to the hoses and pumps without proper controlled authorization.
   - **b.** Although the hoses have a numerical tag attached the crewman must consult a list to determine the specific use of a particular hose as this is not readily identifiable looking at the hose.

c. There is no hose inventory with detailed "type of use" for each hose. It was noted on the sign-out log that a "water hose" labeled W1 had been used in a "sewage application" and later checked out for "boat wash down". This designated use should be specific not general. Details for hoses should specify sub categories (such as for water hoses);

i. Dirty water
ii. Clean water
iii. Contaminated water
iv. Sewage

CORRECTIVE ACTION RECOMMENDATIONS FOR OBSERVATIONS

Note: The points below correlate numerically to the aforementioned Observations.

2. ENVIRONMENTAL POLICY

2.1 The integration of the EMS in the Company's Operation Manuals is commendable as it becomes an integral part of Company procedures. However, due to the lack of a comprehensive index and the difficulty in locating the EMS in the Operation Manuals, we recommend copying the EMS sections and consolidating the sections in a single "controlled" reference with a detailed index of book – volume – section and paragraph.

The EMS would remain embedded in the Company's Operation Manuals being an integral and permanent part of the Company's management system, however, the single volume EMS would allow officers, crew, auditors and regulatory authorities to easily reference Company policy and instructions.

8. SHIPBOARD OPERATIONS.
A. Chief Engineer

8.9 Recommend pumps having standard packing glands be replaced with mechanical seals to reduce waste stream accumulation in the bilges. It is noted that the Company has taken the initiative in this respect and mechanical seals have recently been fitted to the following pumps:

- #1 Auxiliary Circulating Pump
- #2 Bilge and Ballast Pump
- #1 Atmospheric Drain Tank Pump
- Aqua Chem Evap. Feed Pump
- Aqua Chem Evap. Brine Pump
- Aqua Chem Evap. Distillate Pump

10. OPERATIONAL CONTROL.

10.5 It is recommended that all critical spare parts be maintained aboard in the quantity necessary. It was noted that the parts in question have been ordered. The approved list of Critical Spare Parts for Environmental Equipment was sighted and found that several items had to be written in. These parts were aboard and in inventory. It is recommended that the Company discuss the addition of these spare parts with the Chief Engineers of each vessel and include the parts recommended by the Chiefs in the official Critical Spare Parts List.

CORRECTIVE ACTION RECOMMENDATIONS FOR ADDITIONAL OBSERVATIONS

1. Through interviews and discussions with ship's crew it was determined that this issue is well known by all crew and is monitored and addressed daily. The spots of grease on deck were generally two inches or less in diameter and it was observed that the amount of grease applied to the crane wires is minimal for proper operation of the crane. The crew interviewed stated that weather conditions are monitored closely and clean up prior to rainy weather is a priority. We did not observe excessive staining on the deck which would confirm that the crew is being proactive in this matter. It is recommended that the crew continue their diligence in monitoring and cleanup.

2. It is recommended that portable containments be ordered for drums of oil or fuel if they are to be temporarily placed on deck for any reason or store them in a secure location below deck. A purchase order for six portable containments was created prior to completion of audit– two containments for each vessel.

3. The flexible hoses are neatly stowed and affixed with a number tag to identify them and their use. Hoses and pumps are checked out and notation made for good record keeping.
   It is recommended that:
   - **a.** The compartment where the hoses/pumps are stowed be locked or sealed properly so that free access to the hoses and pumps without proper controlled authorization is not possible.
   - **b.** Both ends of the hoses are color coded to make identification of hose use readily apparent.
   - **c.** A detailed inventory of hose type use is made so that hoses used for "dirty applications" will not be used for "clean applications" at a later date thereby preventing possible contamination/pollution issues.

CONCLUSION

The **SS *Gem State* (T-ACS-2)** keel was laid down on May 30, 1964, as the break-bulk ship, **SS *President Monroe***, a Maritime Administration type (C6-S-1aq) hull, under Maritime Administration contract at National Steel and Shipbuilding Corp, San Diego, CA. She was launched on May 22, 1965 and delivered to American Presidents Line, February 9, 1966. She was lengthened in 1973 by Todd Shipyard Corporation, Seattle, Washington; converted to a Crane Ship at Continental Maritime, San Francisco, California in 1984 and assigned by the Maritime Administration to the Military Sealift Command (MSC) Ready Reserve Force, (RRF). She was placed in service as *SS Gem State* (ACS-2), 7 May 1984. The *SS Gem State* is berthed at Alameda, CA, assigned to Maritime Prepositioning Ship Squadron Three and is maintained in a five (5) day readiness status (ROS 5). The vessel is classed as a Container Carrier IMO No. 6520911; International Gross Tonnage is 16,808 gross tons and registered in the United States.

Three (3) Company vessels covered by the R-ECP are moored at Alameda, California. The vessels are the Gem State, Keystone State and the Grand Canyon State. Due to the close proximity of the vessels, the Gem State's EMS audit was conducted in conjunction with the other vessels. Vessel preliminary inspection and water sampling phases of the audit were conducted concurrently on each vessel to facilitate the audits. To accommodate the schedule of the attending Court Appointed Monitor, the SS GEM STATE audit document review and crew interviews were completed first.

All officers and crew are citizens of the United States. During the interview portion of the audit, the senior officers were evaluated, addressing their knowledge and understanding of the requirements of the R – ECP and EMS. We found that they are well trained and knowledgeable of their responsibilities in accordance with the requirements of the R-ECP and Company EMS. Crew interviewed demonstrated a satisfactory knowledge of the R-ECP and Company EMS requirements.

The TPA observed the decks and enclosed areas of the vessel to be clean and uncluttered, the engine room was well lit and clean with no oil residue on the decks and deck gratings. The bilges are clean and dry with no signs of leaks or stains from leakage. Observations noted during the audit were promptly addressed and rectified, if possible, prior to completion of the audit.

The TPA witnessed the retrieval of water samples from the bilge holding tanks, bilge wells and OWS effluent in accordance with the R – ECP requirements for in-port operations.

The scope of the audit emphasized the Company compliance to the R – ECP and the Company EMS. The audit scope follows:

Review of the Company's EMS revealed that it is imbedded in the Company's Operations Manuals which consists of six (6) volumes. With the inclusion of the EMS in the Operations Manuals, the system will become an integral and permanent part of the Company's management system. To assist the crew members in locating sections of the EMS, the Company has prepared questions similar to the TPA checklist for the officers and crew. As a company training exercise, the crew was given these questions and instructed to locate reference answers on their own. The Matrix previously used as an aid has been officially discontinued for use aboard the vessels. The crew had difficulty in navigating the EMS to find references to the TPA questions. The officers and crew were able to locate requested reference material, however the difficulty to successfully locate the appropriate reference varied with the individual. A standalone "controlled" EMS Manual would make it easy for the officers, crew and auditors to locate the Company's policies and guidance relating to the R – ECP and EMS.

The vessel's documentation and certificates issued by Class and the U.S. Coast Guard were examined and found to be in good order. There were no Conditions of Class, Recommendations of Class and Memoranda of Class or U. S. Coast Guard CG 835's noted.

Documentation associated with the R – ECP and EMS was reviewed and are listed as follows:

Certificates/Trading Papers	**No. of certificate**	**Date of expiry/issue**
Certificate of Registry	DHS, USCG 1625-0027	June 30, 2013
Certificate of Class	ABS 6614920	October 31, 2016
Document of Compliance	986523-929483-001	November 10, 2012
Safety Management Certificate	ABS 6614920-2069507-001	December 17, 2016
USCG COI/Safe Manning Certificate	USCG COI	Sighted October 31, 2016
USCG COFR	Not applicable to MARAD	Vessels: Sighted Memo.
ISSC	USCG-4165548	October 31, 2016
IOPP A	6614920-2061596-009	October 31, 2016
Sewage Pollution Prevention Cert	6614920-2127861-001	October 31, 2016
Prevention of Air Pollution Cert	6614920-2061596-010	October 31, 2016
International Tonnage Certificate	A9418181	Issued September 9, 1994
Documents Sighted	**Control no.**	**Details**
Last Safety Meeting Minutes		Sighted
Non Conformity/Corrective Action reports		Sighted

Masters' Management Review		Sighted
Internal Audit date		Sighted February 11, 2012
Forms to Sight	**Control No.**	**Details**
Ballast Water Log	PG-410	Sighted monthly soundings
Garbage Log		Sighted
ORB (Engine)		Sighted in good order
Oil to Sea Interface Log	PG 252	Sighted - Current
Engine Log Book		Sighted
Deck Log Book		Sighted
Daily Tank Sounding Log	PG 251	Sighted - Current
Sulfur Content Log/Oil Samples		Sighted: Bunker Delivery
NPDES Log Weekly, Quarterly, Annually, Dry Dock		Sighted
Critical Spare Parts List		Sighted
Forms	**Control #**	
Contractor Affidavit of Environmental Stewardship	PG-933	Sighted
Arrival Check List	PG-241	Sighted
Tank Inspection Report	PG-407	Sighted
NBIC	PG-409	Sighted
Bilge & Waste Oil Audit	PG-930	Sighted
Bulk Oil Transfer Check-Off	PG-315	Sighted
PGM Declaration of Inspection	PG-314B	Sighted
Casualty Report	PG-450	None to report Sighted blank form
Chief Engineers Turn Over	PG-501	Sighted
Contractors Monitoring Report	PG-311	Sighted my daily report 6/23/2012-6/27/2012
Contractor Environmental Compliance Form	PG-933-A	Sighted blank form
Destruction & Disposal of Controlled drugs	PG-631	Sighted blank form

EMS Training Records	PG-650	Sighted training modules on computer
Internal Audit Summary Report	PG-921	Sighted; dated February 11, 2012
Maintenance & Repair Rept	PG-310 - replaced by NS5	Sighted NS5
Non Conformity	PG-430	Sighted
Pollution Incident Report	PG-660	None reported Sighted blank form
Record of Garbage Discharges	PG-408	Form not used. Data in garbage record book
Record of inspection or survey	PG-911	Sighted
Refrigerant consumption Log	PG-312	Sighted
Shipboard Environmental Management Meeting Records	PG-625	Sighted monthly record
Vessel Environmental Training Certificate	PG-648	Sighted records and printed Certificates
Waste Stream Analysis and Recommendation Report	PG-932	Sighted Report

The vessel's officers were well prepared for the audit. Chief Engineer Pasion and Chief Mate Jahn were very helpful and forthcoming with information and assistance as well as having all of the requested documents and logs laid out readily available for inspection and providing copies of the same for reference.

The implementation of the R – ECP/EMS by the engineering staff was evaluated using the Company's Preventive Maintenance System (PMS), appearance of the engine room, ongoing maintenance, professional knowledge of personnel, record keeping and attitude towards the implementation of the same.

The Company's Fleet Engineering Survey as well as the Company's internal audits were also evaluated.

The TPA observed that the engineering and deck staff follow, on a daily basis as part of their normal operations, the requirements of the R-ECP and Company EMS. All paper work, forms, logs and documentation required by the R-ECP/EMS were up to date and properly filled out. TPA observed outside vendors attending the vessel being instructed in the Company's Environmental requirements that contractors must follow. By observations, the officers and crew have demonstrated a commitment to following their environmental stewardship aboard the SS Gem State.

Recent Company improvements aimed at reducing waste streams completed or started since the previous audit in October 2011 include:

- Replacement of pump packing seals with mechanical seals to reduce bilge loading. Installing mechanical seals on pumps in the engine room on the following pumps:
    1. #1 Auxiliary Circulating Pump
    2. # 2 Bilge and Ballast Pump
    3. # 1 ADT Pump
    4. Aqua Chem Evap. Feed Pump
    5. Aqua Chem Evap. Brine Pump
    6. Aqua Chem Evap. Distillate Pump
- Installation of compressed air oil recovery tank to eliminate introduction of compressor oil into the bilges.
- Upgrade of MSD units.
- Upgrade of sewage/gray water piping which eliminates the comingling of gray and black water and increases the holding capacity of both black and gray water.
- Adding an additional 8.9 cubic meter sludge tank which will increase the total capacity to 10.3 cubic meters.
- Coating of engine room bilges

The Fleet Engineering survey was conducted in accordance with the R – ECP and is a compilation of comments from the vessel's engineers and responses from the Company was sighted. The responses and comments were helpful in identifying deficiencies. Deficiencies noted in the survey have been addressed.

Oil Record Book, Part I was sighted. Entries were neat, precise and properly entered. The cleaning of the bilge holding tank and the testing of the OWS are in accordance with the R-ECP and are properly logged.

The OWS was operated in recirculation mode and found to be in good working order. Alarms were manually tested with a solution which exceeded the 15 ppm value to place the unit in alarm mode. The alarm was activated and the automatic valve opened to recirculate the effluent back to the bilge holding tank as per Alfa Laval operational manual. All of the solenoids, recirculating valve flanges, manual valves, piping and removable connections were appropriately fitted with seals.

The Environmental Tag System in use on board the Gem State was found to be comprehensive and complete. Random tags and seals installed were sighted and logged in the ETS joint log correctly. The intent of the EMS and R - ECP are being complied with onboard.

The engine room bilge piping system was inspected and found to be in good working order with no signs of unauthorized modifications.

The SS Gem State was found in overall compliance with the R – ECP/EMS, with exceptions as noted above.

Best regards,

ECM Maritime Service, LLC