# IMPORTANT PRODUCT SAFETY ANNOUNCEMENT

## Title: Product Safety Announcement

## Product: GMS series of recorders with an internal battery

### August 2016

### Important Notification

It has come to our attention that an aged or an unmaintained battery inside a GMS housing may release excessive amounts of hydrogen, which under certain circumstances may cause an explosion within the housing. Using an external body of experts, we have carried out extensive tests to analyse the risk. Our findings show that under normal operation of the battery the amounts of hydrogen generated will dissipate naturally from the housing as it is not airtight.

The normal life of a lead acid battery, as specified by GeoSIG in the user manual, is up to three years if operated at optimum conditions of steady and average temperature levels of around 20° C. It is therefore imperative and is a safety requirement to ensure that the battery is routinely checked and replaced every three years — or sooner if operated in a high temperature area. Please refer to the GMS user manual for additional information.

As a precautionary step and to reduce the risk of hydrogen built up in the housing, we have made a small modification to the cover of the housing by creating two 2.8-mm off holes on the cover of the GMS housing to allow much higher ventilation to further reduce the risk of a possible explosion. The new holes will be covered from the inside by using protective membranes developed by Gore Product Page. These membranes will allow excessive amounts of hydrogen to be released to the air while equalising the pressure and ventilating the housing. The membranes have an ingress rating of IP67 to prevent external elements from entering the housing.

Replacement housing covers with the above-mentioned modification will be sent to users/owners of GMS series of recorders upon completing the information in the below link:

**GMS REPLACEMENT HOUSING COVER FORM**

### Frequently Asked Questions (FAQ)

Question: I've just made an order for GMSplus. Is my order affected by this announcement?

Answer: No. GMSplus recorders with serial number 102847 or higher have already had the modification applied to them. In addition, any GMSplus recorders which have received repair or upgrade since April 2016 have been modified as well.

Question: The battery in our GMS has been checked and it is in good operational condition — should I still register to change the cover?

Answer: All the externally commissioned tests confirm that the normal amounts of hydrogen generated by a healthy battery will be released from the housing. As long as the battery operates in a healthy condition a risk of an explosion is not foreseen. As a matter of extra security and safety we instruct to have the replacement cover installed.

Question: Our GMS is used indoors and the cover is not screwed in — do we still need to have the replacement cover?

Answer: The purpose of the replacement cover is to increase air ventilation and equalise the pressure inside the housing particularly when the battery, due to its unhealthy operation, is outgassing at abnormal levels. When the cover is not screwed in, there will be plenty of ventilation that will allow hydrogen to flow out of the housing. Although there will not be any risk of hydrogen being left inside the housing, it may still be advisable to have the replacement lid in case it is decided to tighten the cover screws in the future.

Question: Have there been any reported explosions of any GeoSIG products?

Answer: There has been one reported incident of an explosion, which was due to an old battery (more than five years old) in GMS that had failed and was outgassing continuously due to failure of the battery. This is seen as an extreme case, and the cause was due to inadvertently operating an out-of-date battery for extended periods of time.

Question: How can we be sure that even under extreme conditions when an aged and unhealthy battery is being used there won't be an explosion?

Answer: A lead acid battery that is not maintained as per recommendations made in the user manual may generate excessive amounts of hydrogen gas, which may be trapped within the housing. To be 100% sure that this may not happen under any conditions you may replace the internal battery with an external battery. Alternatively, you may remove the cover lid to allow the release of the hydrogen gas to the atmosphere.

Question: We also have GSR recorders — what is the position with those units?

Answer: With any lead acid battery there has to be adequate ventilation within the housing. Tests have shown that GSR recorders are even less airtight, which should allow the normal levels of hydrogen as specified by the battery manufacturer to dissipate through various openings in the housing. It is particularly important that the battery is not older than three years and periodically checked for its health as outlined in the user manual.

Question: The GMS housing is stored in a cabinet or in another enclosure — should we take any additional precautions?

Answer: With any lead acid battery there has to be adequate ventilation when used in an enclosure. The GMS housing has to be ventilated as described in the manual as well as the cabinet or the enclosure you are using to house the GMS.

Question: We have replaced the factory supplied battery with another battery type — how can we be sure that it is safe to operate the instrument?

Answer: GeoSIG has specified specific battery types in the user manual. GeoSIG cannot confirm suitability of any other battery. It is mandatory that only specified battery types are used.

Question: Can the system remind us when the battery needs changing?

Answer: Within the firmware there exists a date field for the battery date of manufacturing, which has to be filled. The system will issue alerts if the date has not been put in or the age of the battery is more than three years. Please ensure that you have updated your firmware to the latest version.

**Disclaimer:**

GeoSIG will under no circumstance accept any liabilities directly or indirectly with regards to use of an internal battery in any product we supply. Every effort has been made to ensure that there are no significant risks in using GeoSIG supplied product with an internal battery, *however* correct and optimum functioning of a battery can't be guaranteed by GeoSIG. The user of any supplied product with an internal battery must ensure that they read the latest version of the user manual, which is available on our website. Please contact info@geosig.com if you require any specific support or clarification.