**Lowest Total Cost of Ownership**

We successfully partner with engineering firms, design & build companies, and end-users to help identify and design the right H2S removal solutions for site-specific requirements from meeting permit limits to treating the LFG for beneficial end-use. MV Technologies H2SPlus Systems deliver superior value against these requirements.

Also, in evaluating H2S treatment approaches, an important metric to consider is the Total Cost of Ownership (TCO). The TCO includes capital cost such as the vessel size, pumps, installation costs, and the operating costs, largely determined by media life and resulting time between replacement — itself a function of LFG flow rate and H2S concentration. MV’s enhanced iron sponge (BAM™) media is guaranteed to remove up to 13 pounds of H2S per cubic foot, one of the highest removal efficiencies in the industry.

In addition to understanding ‘cost per lb. of H2S removed’, cost elements often overlooked during comparison of H2S treatment approaches:

- Power costs – increase in pressure drop can result in increase in power costs
- Lost revenue due to system downtime – maintenance/media changes
- Replacement of proprietary nutrients and/or chemical/caustic
- The costs of testing for warranty or regulatory requirements
- Operator attention time – it is not “free”

**Simply Efficient**

The innovative MVNet™ system, ensures a safe and easy media changeout process and at end of life, MV’s media:

- is non-hazardous;
- passes the Environmental Protection Agency’s T.C.L.P test and meets O.S.H.A. definitions of a “not readily ignitable solid”;
- can be composted, land-applied, or disposed of in landfills.

**H2SPlus System Difference**

- Designed to meet site-specific operating conditions
- Operates at 100% effectiveness immediately upon startup
- NOT susceptible to fluctuating gas conditions
- Converts all H2S in the LFG stream into iron sulfides and elemental sulfur
- Operates with no need for a water treatment system or sewer line access

H2S treatment systems provide consistent and reliable performance through scalable & flexible designs that offer the lowest total cost of ownership. Additionally, MV stands behind its system design with the MV Performance Guarantee.

**Lowest Cost Per Pound of H2S Removed**

The combination of the H2SPlus System design and MV’s BAM™ media results in higher H2S absorption capacity and the lowest cost per pound of H2S removed among any of the H2S removal technologies commercially available today.
Proven H2S Removal Technology

H2SPlus Systems are a biologically enhanced dry scrubber technology proven to remove H2S from gas streams across a broad base of industrial clients. H2SPlus Systems are in use treating landfill gas (LFG) and digester biogas at farms, wastewater treatment facilities, food & beverage processing operations and more.

Clients use H2SPlus Systems to:
- remove H2S and achieve SOx compliance limits;
- extend the operating life of downstream gas-to-energy equipment and reduce maintenance costs;
- comply with stringent pipeline/CNG/RNG specifications where the LFG is used as a fuel source;
- protect flares and thermal oxidizers from corrosion; and
- meet equipment warranty requirements.

Key Operating Advantages
- Extended Media Life
- Reduced Operating Expense
- Increased Ease of System Use
- Consistent and Reliable Performance
- Predictable, Efficient and Safe Media Changeouts

Performance Guarantee

In combination with high-performance media, our H2SPlus Systems are engineered to be flexible so short term swings in H2S concentration are handled without issue, while your operating costs fall in line with any change in H2S levels over time. Additionally, MV stands behind its system design, provides engineering support and media reorder service.

There are significant cost advantages to using the H2SPlus System and the MV Performance Guarantee™ ensures you that we back up the operating costs that we project or we will make up the difference!

Call an MV Engineer to help you evaluate the best H2S removal technology for your unique project requirements.

### H2SPlus™ Systems

<table>
<thead>
<tr>
<th>Dry Scrubber Technology</th>
<th>Filtration Technology</th>
<th>Chemical Treatment Technology</th>
<th>Wet Scrubber Technology</th>
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<tr>
<td>Low</td>
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<td>Cost $11.36</td>
<td>Cost $13.18</td>
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<td>Cost $25 to $30 per ft2</td>
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**Case Studies**

**PROJECT:** Landfill Gas to Energy Project, Pennsylvania

**APPLICATION:** An environmental systems project includes a 10.2MW power plant, with two turbine packages and associated equipment, tied directly into the local power grid. The landfill gas is piped to the power generation facility. The gas is required to be treated to below 200 ppm in order to comply with the facility’s air permit.

**MV SOLUTION:** MV supplied a six-vessel H2SPlus System, utilizing 14’ diameter tanks with a 12’ straight sidewall. To achieve the outlet requirement, MV designed the system with a bypass and blend approach, treating 3,500 SCFM down to 0 ppm and combining with the other 1,500 SCFM on the outlet to achieve a total H2S outlet of less than 200 ppm. The total media requirement is 8,568 ft³, designed for an optimized bed life of 7 months. Currently the site is treating the entire flow of gas to the turbines as they have realized significant maintenance cost savings as well as significantly more run time.

**PROJECT:** Landfill Renewable Energy Facility, Georgia

**APPLICATION:** The renewable energy facility is designed, built, owned and operated by a regional energy service provider to collect the LFG, and use it as a fuel source to power generators. The facility is designed to generate 4.8MW and requires treatment of a source H2S concentration at 1,700 ppm at 1,600 SCFM. The facility’s air emissions permit requires that the H2S concentration be below 200 ppm.

**MV SOLUTION:** To meet the H2S specification, MV supplied four 12’ diameter by 11’4” tall vessels, with a total media capacity of 4,368 ft³ of media. Designed media bed life is 170 days. The treated LFG has an S concentration in the 0-10 ppm range. The facility bypasses a portion of the LFG and re-blends it with the utilized LFG. The blended LFG is targeted to an H2S level to comply with the air permit. By operating in this system manner, it cuts operating cost of the H2SPlus System by 12%.

Additional Case Studies Available at MVSeer.com
Proven H₂S Removal Technology

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Evaluating H₂S Removal Technologies

MV Technologies Provides ALL Solutions and Will Help Evaluate the Best Technology for Your Unique Project Requirements.

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What sets MV Technologies H2SPlus™ Systems apart from other systems is the combination of biologically enhanced media (BAM™) with a system design informed by a wide range of in-field application and over a decade of experience.

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**H2S Treatment for Landfill Gas**

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“Use a Net, Not a Shovel.”