[0015a] In another embodiment, there is provided a method for reducing sulfhydryl compounds from a hydrocarbon fluid stream, said method comprising providing a high temperature stable, highly water soluble aldehyde-releasing compound selected from the group consisting of hydantoins, imidazolidinyl ureas, dimethyloxazolidines, glutaraldehydes, and mixtures thereof; adding an effective amount of the aldehyde-releasing compound to a hydrocarbon fluid stream containing a sulfhydryl containing compound; and allowing the aldehyde-releasing compound to mix into the hydrocarbon fluid stream and react with at least a portion of the sulfhydryl compound.

[0015b] In another embodiment, there is provided a method for reducing sulfhydryl compounds from an oil and gas production well or injection well, said method comprising providing a high temperature stable, highly water soluble aldehyde-releasing compound, selected from the group consisting of hydantoins, imidazolidinyl ureas, dimethyloxazolidines, glutaraldehydes, and mixtures thereof ; and adding an effective amount of the aldehyde-releasing compound to a well having a downhole additive means, the aldehyde-releasing compound being added via the downhole additive means during production of oil or gas from the production well or injection well.

[0015c] In one aspect, there is provided a method for reducing the amount of sulfhydryl compounds from an oil and gas production well or injection well, said method comprising (i) providing a high temperature stable, highly water soluble aldehyde releasing compound~~, selected from the group consisting of~~ hydantoins, ~~imidazolidinyl ureas, dimethyloxazolidines, glutaraldehydes, and mixtures thereof~~ ; and (ii) adding an effective amount of the aldehyde-releasing compound to the production well or the injection well at a position downhole and below ground surface, the aldehyde-releasing compound being added to a hydrocarbon fluid stream downhole and below ground surface during production of oil or gas from the production well or injection well.

[0016] These and other aspects will become apparent when reading the detailed description of the invention.

What is claimed is:

1. A method for reducing the amount of sulfhydryl compounds from an oil and gas production well or injection well, said method comprising

(i) providing a high temperature stable, highly water soluble aldehyde releasing compound~~, selected from the group consisting of~~ comprising hydantoins~~, imidazolidinyl ureas, dimethyloxazolidines, glutaraldehydes, and mixtures thereof~~ ; and

(ii) adding an effective amount of the aldehyde-releasing compound to the production well or the injection well at a position downhole and below ground surface, the aldehyde-releasing compound being added to a hydrocarbon fluid stream downhole and below ground surface during production of oil or gas from the production well or injection well.

~~2. The method according to claim 1, wherein the aldehyde-releasing compound is added to a hydrocarbon fluid being produced from the production well or the injection well.~~

32. The method according to claim 1, wherein the downhole addition is achieved using a capillary string, umbilical cord, a perforation in the annulus of a production pipe, addition at the backside of the production or injection well.

~~4. The method according to claim 1, wherein the aldehyde-releasing compound comprises a hydantoin.~~

53. The method according to claim 41, wherein the hydantoin comprises a hydroxymethyl hydantoin, a bis(hydroxymethyl)hydantoin or a mixture thereof.

64. The method according to claim 53, wherein the hydroxymethyl hydantoin is selected from the group consisting of 1-hydroxymethyl-5,5-dimethylhydantoin, 3-hydroxymethyl-5,5-dimethylhydantoin, and mixtures thereof; and the bis(hydroxymethyl)hydantoin is 1,3-bis(hydroxymethyl)-5,5-dimethylhydantoin.

~~7~~5. The method according to claim 1, wherein the sulfhydryl compound present in the hydrocarbon fluid comprises hydrogen sulfide.

~~8~~6. The method according to claim 1, wherein the aldehyde-releasing compound is continuously fed, below ground surface, to the production well or injection well.

~~9~~7. The method according to claim 1, wherein the aldehyde-releasing compound is fed, below ground surface, to the production well or injection well in a batchwise manner.

~~10~~8. The method according to claim 1, wherein the aldehyde-releasing compound is added in amount of at least 0.3 moles of the aldehyde-releasing compound per mole of the sulfhydryl present in the hydrocarbon fluid stream to be treated.

~~11~~9. The method according to claim ~~10~~8, wherein the aldehyde-releasing compound is added in amount between ~~about~~ 1 to ~~about~~ 10 moles of the aldehyde releasing compound per mole of the sulfhydryl present in the hydrocarbon fluid stream to be treated.

10. The method according to claim 9, wherein the aldehyde-releasing compound is stable at a temperature of 80 °C for a period of at least 6 hours.