Products

Disclaimer of liability

Table of Contents

SOAP / FOAM STICKS

Contain surfactants that remove water from gas wells and increase gas production. Their foaming action decreases the hydrostatic back-pressure, which leads to increased gas production.

SOAP STICKS

FS-1259 Sticks

FS-1259 STICKS are water soluble sticks containing a combination of surfactants. Natural gas bubbling through the water column and surfactants produces foam which can help remove water from watered-up gas wells.

Product uses

FS-1259 STICKS are primarily used to remove water from gas wells and increase gas production. The foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

FS-1259 STICKS can be used to remove fluid from gas-condensate wells and flowing oil wells. For gas-condensate wells with more than 75% condensate, it is recommended to use OIL FOAM STICKS™ in conjunction with FS-1259 STICKS.

FS-1259 STICKS are used to increase the swabbing efficiency and life of swab cups. The slick coating along with the foaming action increases efficiency and life of the swab cups and allows the well to flow easier. The perforations are often cleaned as a result of the surfactants and swabbing action.

FS-1259 STICKS are used in water injection wells in combination with ACID STICKS® to help reduce injection pressures. Surfactants contained in FS-1259 STICKS can help remove oil coatings on scale. This helps the ACID STICKS® react with the exposed scale.

Product advantages

FS-1259 STICKS are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of FS-1259 STICKS to be used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of FS-1259 STICKS to water above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 to 3.50 lbs of stick per BBL of water.

Note

The above amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with FS-1259 STICKS may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of FS-1259 STICKS than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with FS-1259 STICKS to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 45 seconds until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted the top of fluid) flow well at about 25% of pretreatment rate for about 20 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product Specifications

The stick will normally dissolve in 20 to 80 minutes depending on temperature, salt content, and relative water motion. FS-1259 STICKS are 100% soluble in water and insoluble in oil. The melting point of the sticks is 122ºF. The stick will dissolve in water in wells with BHT below 122º (just at a slower rate). Lab tests indicate the dissolving rate in 50,000 PPM moving brine water to be 72 minutes @ 100º, 25 minutes @ 120º, 8 minutes @ 140º, and 3 minutes @ 180º. The dissolving time will decrease if the sticks are broken before dropping or if they break upon impact with the top of the fluid. The specific gravity is 1.11. The falling rate through fresh water is approximately 100 feet per minute. The sticks can free fall (through air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

Product can be packaged in cardboard boxes, tool boxes, ice chests, pails or drums.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or paper tube before using. Bag or tube can be used as a glove to avoid contact with hands.

FS-1257 Sticks

FS-1257 STICKS are water soluble sticks containing a combination of surfactants. Natural gas bubbling through the water-column and surfactants produce foam which can help remove water from watered up gas wells.

Product uses

FS-1257 STICKS are primarily used to remove water from gas wells and increase gas production. The foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

FS-1257 STICKS can be used to remove fluid from gas-condensate wells and flowing oil wells. For gas-condensate wells with more than 75% condensate, it is recommended to use OIL FOAM STICKS™ in conjunction with FS-1257 STICKS.

FS-1257 STICKS are used to increase the swabbing efficiency and life of swab cups. The slick coating along with the foaming action increases efficiency and life of the swab cups and allows the well to flow easier. The perforations are often cleaned as a result of the surfactants and swabbing action.

FS-1257 STICKS are used in water injection wells in combination with ACID STICKS® to help reduce injection pressures. Surfactants contained in FS-1257 STICKS can help remove oil coatings on scale. This helps the ACID STICKS® react with the exposed scale.

Product Advantages

FS-1257 STICKS are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment Determination & Procedure for Water Removal

The number of FS-1257 STICKS to be used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of FS-1257 STICKS to water above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 to 3.50 lbs. of stick per BBL of water.

Note

The above amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with FS-1257 STICKS may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of FS-1257 STICKS than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with FS-1257 STICKS to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 45 seconds until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted the top of fluid) flow well at about 25% of pretreatment rate for about 20 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product specifications

The stick will normally dissolve in 20 to 80 minutes depending on temperature, salt content, and relative water motion. FS-1257 STICKS are 100% soluble in water and insoluble in oil. The melting point of the sticks is 122ºF. The stick will dissolve in water in wells with BHT below 122º (just at a slower rate). Lab tests indicate the dissolving rate in 50,000 PPM moving brine water to be 72 minutes @ 100º, 25 minutes @ 120º, 8 minutes @ 140º, and 3 minutes @ 180º. The dissolving time will decrease if the sticks are broken before dropping or if they break upon impact with the top of the fluid. The specific gravity is 1.11. The falling rate through fresh water is approximately 100 feet per minute. The sticks can free fall (through air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or paper tube before using. Bag or tube can be used as a glove to avoid contact with hands.

FS-1251 Sticks

SELECT FS-1251 STICKS are water soluble sticks containing a combination of surfactants. Natural gas bubbling through the water-column and surfactants produces foam, which can help remove water from watered-up gas wells.

Product uses

SELECT FS-1251 STICKS are primarily used to remove water from gas wells and increase gas production. The foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

SELECT FS-1251 STICKS can be used to remove fluid from gas-condensate wells and flowing oil wells. For gas-condensate wells with more than 75% condensate, it is recommended to use Select OIL FOAM STICKS™ in conjunction with SELECT FS-1251 STICKS.

SELECT FS-1251 STICKS can be used to increase the swabbing efficiency and life of swab cups. The extremely slick coating along with the foaming action increases efficiency and life of the swab cups and allows the well to flow easier. The perforations are often cleaned as a result of the surfactants and swabbing action.

SELECT FS-1251 STICKS are used in water injection wells in combination with ACID STICKS® to help reduce injection pressures. Surfactants contained in SELECT FS-1251 STICKS can help remove oil coatings on scale. This helps the ACID STICKS® react with the exposed scale.

Product advantages

SELECT FS-1251 STICKS are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting and coiled tubing or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of FS-1251 STICKS to be used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of FS-1251 STICKS to water above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 to 3.50 lbs. of stick per barrel of water.

Note

This amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with FS-1251 STICKS may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of FS-1251 STICKS than it is to kick off a dead well. Gas bubbling through

water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with FS-1251 STICKS to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 45 seconds until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted the top of fluid) flow well at about 25% of pretreatment rate for about 20 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product specifications

The stick will normally dissolve in 10 to 40 minutes depending on temperature, salt content, and relative water motion. FS-1251 STICKS are 100% soluble in water and insoluble in oil. The melting point of the sticks is 119ºF. The stick will dissolve in water in wells with BHT below 119º (just at a slower rate). Lab tests indicate the dissolving rate in 50,000 PPM moving brine water to be 36 minutes @ 100º, 12 minutes @ 120º, 4 minutes @ 140º, and 1 minute @ 180º. The dissolving time will decrease if the sticks are broken before dropping or if they break upon impact with the top of the fluid. The specific gravity is 1.09. The falling rate through fresh water is approximately 100 feet per minute. The sticks can free fall (through air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or paper tube before using. Bag or tube can be used as a glove to avoid contact with hands.

FS-1233 Sticks

ELECT FS-1233 STICKS are water-soluble sticks containing a combination of surfactants and friction reducer. Natural gas bubbling through the water-column, surfactants and friction reducer produces foam which can help remove water from watered-up gas wells.

Product uses

SELECT FS-1233 STICKS are primarily used to remove water from gas wells and increase gas production. The foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

SELECT FS-1233 STICKS can be used to remove fluid from gas-condensate wells and flowing

oil wells. For gas-condensate wells with more than 75% condensate, it is recommended to use OIL FOAM STICKS™.

SELECT FS-1233 STICKS can be used to increase the swabbing efficiency and life of swab cups. SELECT FS-1233 STICKS contain a very slick friction reducer. The extremely slick coating along with the foaming action increases efficiency and life of the swab cups and allows the well to flow easier. The perforations are often cleaned as a result of the surfactants and swabbing action.

SELECT FS-1233 STICKS are used in water injection wells in combination with ACID STICKS® to help reduce injection pressures. Surfactants contained in SELECT FS-1233 STICKS can help remove oil coatings on scale. This helps the ACID STICKS® react with the exposed scale.

Product advantages

SELECT FS-1233 STICKS are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of SELECT FS-1233 STICKS to be used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of SELECT FS-1233 STICKS to water above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 to 3.50 LB of stick per BBL of water.

Note

This amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with SELECT FS-1233 STICKS may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of SELECT FS-1233 STICKS than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with SELECT FS-1233 STICKS to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 45 seconds or until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted the top of fluid) flow well at about 25% of pretreatment rate for about 20 minutes or until foam reaches surface then return

to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product specifications

The stick will normally dissolve in 20 to 80 minutes depending on temperature, salt content, and relative water motion. SELECT FS-1233 STICKS are 100% soluble in water and dispersible in oil. The melting point of the sticks is 120ºF. The stick will dissolve in water in wells with BHT below 120º (just at a slower rate). Lab tests indicate the dissolving rate in moving 50,000 PPM brine water to be 72 minutes @ 100º, 25 minutes @ 120º, 8 minutes @ 140º, and 3 minutes @ 180º. The dissolving time will decrease if the sticks are broken before dropping or if they break upon impact with the top of the fluid. Specific gravity is 1.10. Falling rate through fresh water is approximately 100 feet per minute. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided (see MSDS). Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or split cardboard tube before using. Bag or cardboard tube can be used as a glove to avoid contact with hands.

Blowout Sticks

BLOWOUT STICKS™ are water-soluble sticks containing a combination of surfactants. Natural gas bubbling through the water-column and surfactants produces foam which can help remove water from watered-up gas wells.

Product uses

BLOWOUT STICKS™ are primarily used to remove water from gas wells and increase gas production. The foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

BLOWOUT STICKS™ can be used to remove fluid from gas-condensate wells and flowing oil wells. For gas-condensate wells with more than 75% condensate, it is recommended to use OIL FOAM STICKS™ in conjunction with BLOWOUT STICKS™.

BLOWOUT STICKS™ are used to increase the swabbing efficiency and life of swab cups. The slick coating along with the foaming action increases efficiency and life of the swab cups and allows the well to flow easier. The perforations are often cleaned as a result of the surfactants and swabbing action.

BLOWOUT STICKS™ are used in water injection wells in combination with ACID STICKS® to help reduce injection pressures. Surfactants contained in BLOWOUT STICKS™ can help remove oil coating on scale. This helps the ACID STICKS® react with the exposed scale.

Product Advantages

BLOWOUT STICKS™ are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of BLOWOUT STICKS™ to be used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of BLOWOUT STICKS™ to water above the perforations. A treatment of ½ to 1 percent would require 1.75 to 3.50 lb of stick per BBL of water.

Note

The above amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with BLOWOUT STICKS™ may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of BLOWOUT STICKS™ than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with BLOWOUT STICKS™ to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 45 seconds or until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted the top of fluid) flow well at about 25% of pretreatment rate for about 20 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product specifications

The stick will normally dissolve in 20 to 80 minutes depending on temperature, salt content, and relative water motion. BLOWOUT STICKS™ are 100% soluble in water and insoluble in oil. The melting point of the sticks is 122ºF. The stick will dissolve in water in wells with BHT below 122º (just at a slower rate). Lab tests indicate the dissolving rate in moving 50,000 PPM brine water to be 72 minutes @ 100º, 25 minutes @ 120º, 8 minutes @ 140º, and 3 minutes @ 180º. The dissolving time will decrease if the sticks are broken before dropping or if they break upon

impact with the top of the fluid. Specific gravity is 1.11. Falling rate through fresh water is approximately 100 feet per minute. The sticks can free fall (through air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or paper tube before using. Bag or tube can be used as a glove to avoid contact with hands.

Slick Sticks

SLICK STICKS™ are water-soluble sticks containing a combination of surfactants and friction reducer. Natural gas bubbling through the water-column, surfactants, and friction reducer produces foam which can help remove water from watered-up gas wells.

Product uses

SLICK STICKS™ are primarily used to remove water from gas wells and increase gas production. The foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

SLICK STICKS™ can be used to remove fluid from gas-condensate wells and flowing oil wells. For gas-condensate wells with more than 75% condensate, it is recommended to use OIL FOAM STICKS™.

SLICK STICKS™ can be used to increase the swabbing efficiency and life of swab cups. SLICK STICKS™ contain a very slick friction reducer. The extremely slick coating along with the foaming action increases efficiency and life of the swab cups and allows the well to flow easier. The perforations are often cleaned as a result of the surfactants and swabbing action.

SLICK STICKS™ are used in water injection wells in combination with ACID STICKS® to help reduce injection pressures. Surfactants contained in SLICK STICKS™ can help remove oil coating on scale. This helps the ACID STICKS® react with the exposed scale.

Product advantages

SLICK STICKS™ are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

SLICK STICKS™ are available in different formulations Code A for below 50,000 PPM NaCl in water and Code B for above 50,000 PPM – with some condensate present.

Treatment determination & procedure for water removal

The number of SLICK STICKS™ to be used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of SLICK STICKS™ to water above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 to 3.50 lb of stick per BBL of water.

Note

This amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with SLICK STICKS™ may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of SLICK STICKS™ than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with SLICK STICKS™ to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 45 seconds until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted the top of fluid) flow well at about 25% of pretreatment rate for about 20 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product specifications

The stick will normally dissolve in 20 to 80 minutes depending on temperature, salt content, and relative water motion. SLICK STICKS™ are 100% soluble in water and dispersible in oil. The melting point of the sticks is 122ºF. The stick will dissolve in water in wells with BHT below 122º (just at a slower rate). Lab tests indicate the dissolving rate in 50,000 PPM moving brine water to be 72 minutes @ 100º, 25 minutes @ 120º, 8 minutes @ 140º, and 3 minutes @ 180º. The dissolving time will decrease if the sticks are broken before dropping or if they break upon impact with the top of the fluid. The specific gravity is 1.11. The falling rate through fresh water is approximately 100 feet per minute. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided (see MSDS). Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove sticks from plastic bag before using. Bag can be used as a glove to avoid contact.

Select SC-21 Sticks

SELECT SC-21 STICKS™ are water-soluble sticks containing a blend of surfactants. Natural gas bubbling through the water-column and surfactants produces foam which can help remove water from watered-up gas wells.

Product uses

SELECT SC-21 STICKS™ are primarily used to remove water from gas wells and increase gas production. The foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

SELECT SC-21 STICKS™ can be used to remove fluid from gas-condensate wells and flowing oil wells. For gas-condensate wells with more than 75% condensate, it is recommended to use OIL FOAM STICKS™ in conjunction with SELECT SC-21 STICKS™.

SELECT SC-21 STICKS™ are used to increase the swabbing efficiency and life of swab cups. The slick coating along with the foaming action increases efficiency and life of the swab cups and allows the well to flow easier. The perforations are often cleaned as a result of the surfactants and swabbing action.

SELECT SC-21 STICKS™ are used in water injection wells in combination with ACID STICKS® to help reduce injection pressures. Surfactants contained in SELECT SC-21 STICKS™ can help remove oil coatings on scale. This helps the ACID STICKS® react with the exposed scale.

Product advantages

SELECT SC-21 STICKS™ are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of SELECT SC-21 STICKS™ to be used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of SELECT SC-21 STICKS™ to water above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 to 3.50 LB of stick per BBL of water.

Note

The above amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with SELECT SC-21 STICKS™ may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of SELECT SC-21 STICKS™ than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with SELECT SC-21 STICKS™ to provide agitation energy.

The most common procedure

Shut-in well and drop sticks through a lubricator. Wait 45 seconds or until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted the top of fluid) flow well at about 25% of pretreatment rate for about 20 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product specifications

The stick will normally dissolve in 20 to 80 minutes depending on temperature, salt content, and relative water motion. SELECT SC-21 STICKS are 100% soluble in water and insoluble in oil. The melting point of the sticks is 122ºF. The stick will dissolve in water in wells with BHT below 122º (just at a slower rate). Lab tests indicate the dissolving rate in moving 50,000 PPM brine water to be 72 minutes @ 100º, 25 minutes @ 120º, 8 minutes @ 140º, and 3 minutes @ 180º. The dissolving time will decrease if the sticks are broken before dropping or if they break upon impact with the top of the fluid. Specific gravity is 1.11. Falling rate through fresh water is approximately 100 feet per minute. The sticks can free fall (through air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or paper tube before using. Bag or tube can be used as a glove to avoid contact with hands.

SUPER FOAM GEL STICKS

SUPER FOAM GEL STICKS are special sticks that contain 100% active surfactants, friction reducer and foam stabilizer in water soluble tubes. Natural gas bubbling through the water column and 100% active ingredients produces foam which can help remove water from watered-up gas wells.

Product uses

SUPER FOAM GEL STICKS are primarily used to remove water from gas wells and increase gas production. This foaming action decreases the hydrostatic back pressure which increases gas production that further enhances the foaming action until the well unloads.

SUPER FOAM GEL STICKS can be used to remove condensate and water from gas condensate wells and flowing oil wells. For wells with more than 75% condensate, it is recommended to use OIL FOAM STICKS.

Product advantages

SUPER FOAM GEL STICKS contain 100% active foamer in a water soluble tube that can produce up to four (4) times more foam than some other sticks on the market. The entire stick (tube, caps, and contents) are water-soluble. The sticks are shipped ready-to-use and will not dissolve while in cool dry storage.

SUPER FOAM GEL STICKS can develop stable foam in high temperature deep gas wells. Lab tests indicate that stable foam can be developed at 212ºF and above. For extremely high temperature wells the formulation can be altered.

SUPER FOAM GEL STICKS are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of SUPER FOAM GEL STICKS used is based on the volume of water above the perforations. Field test indicate that the best results were achieved by using a larger initial slug treatment of 1/8 to ¼ percent by weight of SUPER FOAM GEL STICKS to water above the perforations. A treatment of 1/8 to ¼ percent by weight would require .44 to .88 lb of stick per BBL of water.

Note

The above amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with SUPER FOAM GEL STICKS may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of SUPER FOAM GEL STICKS than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with SUPER FOAM GEL STICKS to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 30 minutes until sticks dissolve then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have dissolved) flow well at about 25% of pretreatment rate for about 30 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks.

Product specifications

The stick will normally dissolve in 30 to 90 minutes depending on temperature, salt content, and relative water motion. The melting point of the sticks is 125ºF. The stick will dissolve in water in wells with BHT below 125º (just at a slower rate). Lab tests indicate (tube & contents) will dissolve in 90 minutes @ 100º, 62 minutes @ 120º, 45 minutes @ 140º, and 30 minutes @ 180º. The specific gravity is 1.16. The falling rate through fresh water is approximately 100 feet per minute. The stick can free fall (through air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Read MSDS sheet before using. Always remove stick from plastic bag before using. Bag can be used as a glove to avoid contact.
All Products > Soap-Sticks

SUPER FOAM STICKS

SUPER FOAM STICKS are special foam sticks that contain 100% active surfactants, friction reducer and foam stabilizer in water-soluble tubes. Natural gas bubbling through the water column and 100% active ingredients produces foam which can help remove water from watered-up gas wells.

Product uses

SUPER FOAM STICKS™ are primarily used to remove water from gas wells and increase gas production. This foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

SUPER FOAM STICKS™ can be used to remove condensate and water from gas condensate wells and flowing oil wells. For wells with more than 75% condensate, it is recommended to use OIL FOAM STICKS™.

Product advantages

SUPER FOAM STICKS™ contain 100% active foamer in a water soluble tube that can produce up to four (4) times more foam than some other sticks on the market. The entire stick (tube, caps, and contents) are water-soluble. The sticks are shipped ready-to-use and will not dissolve while in cool dry storage.

SUPER FOAM STICKS™ can develop stable foam in high temperature deep gas wells. Lab tests indicate that stable foam can be developed at 212ºF and above. For extremely high temperature wells the formulation can be altered.

SUPER FOAM STICKS™ are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of SUPER FOAM STICKS™ used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of 1/8 to ¼ percent by weight of SUPER FOAM STICKS™ to water above the perforations. A treatment of 1/8 to ¼ percent by weight would require .44 to .88 lb of stick per BBL of water.

Note

The above amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with SUPER FOAM STICKS™ may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of SUPER FOAM STICKS™ than it is to kick off a dead well. Gas bubbling though water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with SUPER FOAM STICKS™ to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 30 minutes until sticks dissolve then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have dissolved) flow well at about 25% of pretreatment rate for about 30 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks.

Product specifications

The stick will normally dissolve in 30 to 90 minutes depending on temperature, salt content, and relative water motion. The melting point of the sticks is 125ºF. The stick will dissolve in water in wells with BHT below 125º (just at a slower rate). Lab tests indicate (tube & contents) will dissolve in 90 minutes @ 100º, 62 minutes @ 120º, 45 minutes @ 140º, and 30 minutes @ 180º. The specific gravity is 1.16. The falling rate through fresh water is approximately 100 feet per minute. The stick can free fall (though air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Read MSDS sheet before using. Always remove stick from plastic bag before using. Bag can be used as a glove to avoid contact.

LAREDO FOAM STICKS

LAREDO FOAM STICKS™ are special foam sticks that contain 100% active surfactants, friction reducer and foam stabilizer in water-soluble tubes. Natural gas bubbling through the water column and 100% active ingredients produces foam which can help remove water from watered up gas wells.

Product uses

LAREDO FOAM STICKS™ are primarily used to remove water from gas wells and increase gas production. This foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads. LAREDO FOAM STICKS™ can be used to remove condensate and water from gas condensate wells and flowing oil wells.

Product advantages

LAREDO FOAM STICKS™ contain 100% active foamer in a water soluble tube that can produce up to four (4) times more foam than some other sticks on the market. The entire stick (tube, caps, and contents) are water-soluble. The sticks are shipped ready to use and will not dissolve while in cool dry storage.

LAREDO FOAM STICKS™ can develop stable foam in high temperature deep gas wells. Lab tests indicate that stable foam can be developed at 212ºF and above. For extremely high temperature wells the formulation can be altered.

LAREDO FOAM STICKS™ are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of LAREDO FOAM STICKS™ used is based on the volume of water above the perforations. Field test indicate that the best results were achieved by using a larger initial slug treatment of 1/8 to ¼ percent by weight of LAREDO FOAM STICKS™ to water above the perforations. A treatment of 1/8 to ¼ percent by weight would require .44 to .88 lb of stick per BBL of water.

Note

This amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with LAREDO FOAM STICKS™ may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of LAREDO FOAM STICKS™ than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with LAREDO FOAM STICKS™ to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 30 minutes until sticks dissolve then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have dissolved) flow well at about 25% of pretreatment rate for 30 minutes or until foam reaches surface then return to normal production. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks.

Product specifications

The stick will normally dissolve in 30 to 90 minutes depending on temperature, salt content, and relative water motion. The melting point of the sticks is 145ºF. The stick will dissolve in water in wells with BHT below 145º (just at a slower rate). Lab tests indicate (tube & contents) will dissolve in 90 minutes @ 100º, 62 minutes @ 120º, 45 minutes @ 140º, and 30 minutes @ 180º. The specific gravity is 1.16. The falling rate through fresh water is approximately 100 feet per minute. The sticks can free fall (through air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Read MSDS sheet before using.

Texas Star (SI-16)

TEXAS STARS are water-soluble sticks containing a combination of surfactants and friction reducer. Natural gas bubbling through the water-column, surfactants, and friction reducer produces foam which can help remove water from watered-up gas wells.

Product uses

TEXAS STARS are primarily used to remove water from gas wells and increase gas production. The foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

TEXAS STARS can be used to remove fluid from gas-condensate wells and flowing oil wells. For gas-condensate wells with more than 75% condensate, it is recommended to use OIL FOAM STICKS™.

TEXAS STARS can be used to increase the swabbing efficiency and life of swab cups. TEXAS STARS contain a very slick friction reducer. The extremely slick coating along with the foaming action increases efficiency and life of the swab cups and allows the well to flow easier. The perforations are often cleaned as a result of the surfactants and swabbing action.

TEXAS STARS are used in water injection wells in combination with ACID STICKS® to help reduce injection pressures. Surfactants contained in TEXAS STARS can help remove oil coating on scale. This helps the ACID STICKS® to react with the exposed scale.

Product advantages

TEXAS STARS are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of TEXAS STARS to be used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of TEXAS STARS to water above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 to 3.50 lb of stick per BBL of water.

Note

This amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with TEXAS STAR may be necessary to prevent production decline due to the gradual water build-up.

It is much easier to maintain gas production with regular insertion of TEXAS STARS than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with TEXAS STARS to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 45 seconds until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted the top of fluid) flow well at about 25% of pretreatmentrate for about 20 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product specifications

The stick will normally dissolve in 20 to 80 minutes depending on temperature, salt content, and relative water motion. TEXAS STARS are 100% soluble in water and dispersible in oil. The melting point of the sticks is 122ºF. The stick will dissolve in water in wells with BHT below 122º (just at a slower rate). Lab tests indicate the dissolving rate in 50,000 PPM moving brine water to be 72 minutes @ 100º, 25 minutes @ 120º, 8 minutes @ 140º, and 3 minutes @ 180º. The dissolving time will decrease if the sticks are broken before dropping or if they break upon impact with the top of the fluid. The specific gravity is 1.11. The falling rate through fresh water is approximately 100 feet per minute. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided (see MSDS). Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove sticks from plastic bag before using. Bag can be used as a glove to avoid contact.

Oil Foam Sticks

Oil foam sticks are designed on the same principle as the soap stick, but used in wells that have a fluid column composed of 75% condensate or greater.

Fluro Stick

FLURO-STICKS are condensate-dispersible water-soluble sticks that contain a combination of surfactants to include a flurosurfactant that foams both the condensate/hydrocarbon and water column in gas-condensate wells.

Product uses

FLURO-STICKS are primarily used to increase gas production by removing condensate, hydrocarbons and water from gas-condensate wells. The foaming action decreases the

hydrostatic back-pressure which increases gas production which further enhances the foaming action until the well unloads. Some water must be present to enhance the FLURO-STICKS foaming action in wells with BHT less than 130ºF.

FLURO-STICKS are recommended only when over 75% of fluid column is composed of condensate/hydrocarbon. If the fluid column contains over 25% water, it is recommended to use SLICK STICKS only or a combination of both FLURO-STICKS and SLICK STICKS to be more effective in removing the fluid.

FLURO-STICKS can be used to increase the swabbing efficiency and life of swab cups. The slick coating and foaming action increases efficiency of the swab and extends the life of swab cups. The perforations are often cleaned as a result of the detergent and swabbing action. PRODUCT ADVANTAGES FLURO-STICKS are an economical way to remove condensate/hydrocarbons and water from gas-condensate wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for fluid removal

The number of FLURO-STICKS to be used is based on the volume of fluid above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of FLURO-STICKS to fluid above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 to 3.50 lb of stick per BBL of fluid.

The most common procedure

The most common procedure is to shut-in the well and drop sticks through a lubricator. Wait 45 seconds or until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted the top of fluid) flow well at about 25% of pretreatment rate for 30 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product specifications

The stick will normally dissolve in 30 to 80 minutes depending on temperature, salt content, and relative fluid motion. Melting point of the sticks is 130ºF. The stick will dissolve in water in wells with BHT below 130º (just at a slower rate). Lab tests indicates that the dissolving rate in moving diesel to be 80 minutes @ 100º, 24 minutes @ 120º, 7 minutes @ 140º, and 2 minutes @ 180º. The dissolving time will decrease if the sticks are broken before dropping or if they break upon impact with the top of the fluid. The specific gravity is 1.08. The falling velocity through fresh water is approximately 100 feet per minute. Gas moving up the tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided (see MSDS). Wash thoroughly with water. Sticks should be stored in a cool dry place. Read MSDS sheet before using. Always remove plastic bag before using. Bag can be used as a glove to avoid contact with hands.

SLICK WILLIE - OF

SLICK WILLIE™ - OF STICKS are special sticks that contain 100% active surfactants, friction reducer and foam stabilizer in water-soluble tubes. Natural gas bubbling through the water column and 100% active ingredients produces foam which can help remove water from watered-up gas wells.

Product uses

SLICK WILLIE™ - OF STICKS are primarily used to remove water and condensate from gas wells and increase gas production. The foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

SLICK WILLIE™ - OF STICKS can be used to remove condensate and water from gas-condensate wells and flowing oil wells. Part of the stick contains water-foam with the balance being useful as condensate and oil remover.

Product advantages

SLICK WILLIE™ - OF STICKS contain 100% active chemicals in a water soluble tube that can produce up to four (4) times more foam than some other sticks on the market. The entire stick (tube, caps, and contents) are water soluble. The sticks are shipped ready-to-use and will not dissolve while in cool dry storage.

SLICK WILLIE™ - OF STICKS can develop stable foam in high temperature deep gas wells. Lab tests indicate that stable foam can be developed at 212ºF and above. For extremely high temperature wells the formulation can be altered.

SLICK WILLIE™ - OF STICKS are an economical way to remove water and oil from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for fluid removal

The number of SLICK WILLIE™ - OF STICKS to be used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of 1/8 to ¼ percent by weight of SLICK WILLIE™ - OF STICKS to fluid

above the perforations. A treatment of 1/8 to ¼ percent by weight would require .44 to .88 LB of stick per BBL of water.

Note

The above amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with SLICK WILLIE™ - OF may be necessary to prevent production decline due to the gradual fluid build-up. It is much easier to maintain gas production with regular insertion of SLICK WILLIE™ - OF STICKS than it is to kick off a dead well. Gas bubbling though water is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with SLICK WILLIE™ - OF STICKS to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 30 minutes or until sticks dissolve then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have dissolved) flow well at about 25% of pretreatment rate for about 30 minutes or until foam reaches surface then return to normal production. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks.

Product specifications

The sticks will normally dissolve in 30 to 90 minutes depending on temperature, salt content, and relative water motion. The melting point of the sticks is 140ºF. The stick will dissolve in fluid in wells with BHT below 140º (just at a slower rate). Lab tests indicate (tube & contents) will dissolve in 90 minutes @ 100º, 62 minutes @ 120º, 25 minutes @ 140º, and 15 minutes @ 180º. The specific gravity is 1.16. The falling rate through fresh water is approximately 100 feet per minute. The sticks can free fall (through air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

Sticks are packaged in plastic chests, plastic tool boxes, cardboard cartons and drums.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or paper tube before using. Bag or tube can be used as a glove to avoid contact with hands.

Oil Foam Sticks

OIL FOAM STICKS™ (for gas-condensate wells) are condensate-dispersible water-soluble sticks that contain surfactants that foam both the condensate and water column in gas-condensate wells.

Product uses

OIL FOAM STICKS™ are primarily used to increase gas production by removing condensate and water from gas-condensate wells. The foaming action decreases the hydrostatic back-pressure which increases gas production which further enhances the foaming action until the well unloads. Some water must be present to enhance the OIL FOAM STICKS™ foaming action in wells with BHT less than 130ºF.

OIL FOAM STICKS™ are recommended only when over 75% of fluid column is composed of condensate. If the fluid column contains over 25% water, it is recommended to use SLICK STICKS™ only or a combination of both OIL FOAM STICKS™ and SLICK STICKS™ to be more effective in removing the fluid.

OIL FOAM STICKS™ can be used to increase the swabbing efficiency and life of swab cups. The slick coating and foaming action increases efficiency of the swab and extends the life of swab cups. The perforations are often cleaned as a result of the detergent and swabbing action.

Product advantages

OIL FOAM STICKS™ are an economical way to remove condensate and water from gas-condensate wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for fluid removal

The number of OIL FOAM STICKS™ to be used is based on the volume of fluid above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of OIL FOAM STICKS™ to fluid above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 to 3.50 lb of stick per BBL of fluid.

Note

This amount is recommended for an initial slug treatment. In many cases, the removal of the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with OIL FOAM STICKS™ may be necessary to prevent production decline due to the gradual fluid build-up. It is much easier to maintain gas production with regular insertion of OIL FOAM STICKS™ than it is to kick off a dead well. Gas bubbling through the fluid is necessary to create foam. If a well is totally dead, GAS STICKS™ may be used in conjunction with OIL FOAM STICKS™ to provide some agitation energy.

Some water must be present for GAS STICKS™ to produce gas.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 45 seconds or until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted the top of fluid) flow well at about 25% of pretreatment rate for 30 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product specifications

The stick will normally dissolve in 30 to 80 minutes depending on temperature, salt content, and relative fluid motion. Melting point of the sticks is 130ºF. The stick will dissolve in water in wells with BHT below 130º (just at a slower rate). Lab tests indicates that the dissolving rate in moving diesel to be 80 minutes @ 100º, 24 minutes @ 120º, 7 minutes @ 140º, and 2 minutes @ 180º. The dissolving time will decrease if the sticks are broken before dropping or if they break upon impact with the top of the fluid. The specific gravity is 1.08. The falling velocity through fresh water is approximately 100 feet per minute. Gas moving up the tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided (see MSDS). Wash thoroughly with water. Sticks should be stored in a cool dry place. Read MSDS sheet before using. Always remove plastic bag before using. Bag can be used as a glove to avoid contact with hands.

Acid products

SELECT ACID PRODUCTS are 100% active water-soluble tube sticks that release acid down-hole in producing and water injection wells to remove carbonate scale and rust deposits. ACID PRODUCTS are water soluble tubes filled with 100% active solid acid material.

ACID STICKS

ACID STICKS® are water-soluble sticks that release acid down-hole in water injection wells to remove carbonate scale and rust deposits. ACID STICKS® are a combination of acid, surfactant, dispersing agent, iron sequester, and inhibitor in solid form.

Product information

ACID STICKS® are primarily used in water injection wells to remove carbonate scale, rust deposits, and lower injection pressures. Injection pressure drops of several hundred PSI have been observed following ACID STICK® treatments. Some wells have gone on vacuum and taken water by gravity. Success has also been experienced in some oil wells, gas wells, and water supply wells.

ACID STICKS® are dropped directly into the well or introduced to the system through the water supply tank. Dropping the stick directly into a well is best because not as much dilution will occur. In a well with tubing obstructions or small valve opening, ACID STICKS® may be successfully used by first dissolving the sticks in fresh water and then pumping or pouring the solution into the well.

ACID STICKS® are very economical (as compared to conventional scale removal operations) and can eliminate or delay the need for HCl acid treatments. Continuous treatment with ACID STICKS® (especially after a conventional acid or clean-out job) can extend the time period between future scale removal operations. ACID STICKS® are less corrosive to steel pipe than conventional liquid HCl acid jobs because most of the acid generated by the stick is released down hole. Conventional liquid HCl acid reacts with the steel, rust, and scale inside the pipe all the way down the well. ACID STICKS® are corrosion inhibited and mildly corrosive to steel (like inhibited amidosulfonic acids).

ACID STICKS® are safe to handle and easy to use by less experienced field personnel; however, like all acids, contact with eyes or skin should be avoided. ACID STICKS® are safe to use in cement lined tubing and plastic lined pipe. Continued treatments over long periods of time through a by-pass feeder into cement lined pipe should be avoided.

Treatment determination & procedure

The number of ACID STICKS® to be used is based on the number of feet of perforated interval or open hole and severity of scale build-up. Field tests indicate the best results were achieved by using a large initial slug treatment (1.8 to 5.4 lbs of stick per foot of interval) followed by smaller periodic treatments (about half the initial slug amount).

Note

A REACTIVE EQUIVALENCY of ACID STICKS® vs. HCl ACID RATIO was determined by field tests. These tests indicated that about 10 Senior Acid Sticks® dropped in an injection well resulted in an equivalent pressure drop as did using 120 gallons of 15% HCl acid. Liquid HCl acid loses strength by reacting on the steel, scale, and rust inside of the pipe all the way down the well while the sticks release most of their acid down-hole.

The most common procedure

Shut-in well and drop sticks through lubricator and return well to injection. This procedure is best for open-hole, no rat-hole, low rate wells, or wells deeper than 3,300 feet. FOR SHALLOW PERFORATED WELLS WITH RAT HOLE drop sticks and leave well shut-in about 15 minutes or until sticks fall to the perforations (whichever occurs first) then return well to injection. The time in minutes for the sticks to fall to the perforations in a shut-in well is equal to the depth of perforations divided by 110. (Time, min = Depth, ft/110)

Product specifications

The stick will normally dissolve in 30 to 90 minutes (in moving water or when falling through water) depending on temperature, salt content, and relative water motion. The stick will melt at 123ºF. The stick will dissolve in water in wells with BHT below 123º (just at a slower rate). Lab tests indicate the dissolving rate in moving 50,000 PPM brine water to be 1 hour & 45 minutes @ 100º, 38 minutes @ 120º, 7 minutes @ 140º, and 2 minutes @ 180º. If slowing the dissolving rate is desired coat ACID STICKS® with oil or grease. The specific gravity is 1.23. The falling velocity through fresh water is approximately 110 feet per minute.

Caution

Avoid contact with eyes or skin. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag. Bag can be used as a glove.

Acid Caps

SELECT ACID CAPS are 100% active water-soluble tube sticks that release acid down-hole in producing and water injection wells to remove carbonate scale and rust deposits. ACID CAPS are water soluble tubes filled with 100% active solid acid material.

Product uses & advantages

SELECT ACID CAPS are primarily used in water injection wells to remove carbonate scale and rust deposits and lower injection pressures. Injection pressure drops of several hundred PSI have been observed following ACID CAP treatments. Some wells have gone on vacuum and taken water by gravity. Success has also been experienced in some producing oil wells, gas wells and water supply wells.

SELECT ACID CAPS, after removing the plastic wrapper, are dropped directly into the well or introduced to the system through the water supply tank. Dropping the stick directly into a well is best because not as much dilution will occur. In a well with tubing obstructions or small valve openings, ACID CAPS may be successfully used by first dissolving the sticks in fresh water and then pumping or pouring the solution into the well.

ACID CAPS are very economical (as compared to conventional scale removal operations) and can eliminate or delay the need for HCl acid treatments. Continuous treatment with ACID CAPS (especially after a conventional acid or clean-out job) can extend the time period between future scale removal operations. ACID CAPS are less corrosive to steel pipe than conventional liquid

HCl acid jobs, because most of the acid generated by the stick is released down-hole. Conventional liquid HCl acid reacts with the steel, rust and scale inside the pipe all the way down the well.

ACID CAPS are safe to handle and easy to use by less experienced field personnel; however, like all acids, contact with eyes or skin should be avoided. The plastic protective wrapper when removed before dropping stick can be used as a protective glove while handling the stick. ACID CAPS are safe to use in cement lined tubing and plastic line pipe. Continued treatments over long periods of time through a by-pass feeder into cement lined pipe should be avoided.

Treatment determination & procedure

The number of SELECT ACID CAPS to be used is based on the number of feet of perforated interval or open hole and severity of scale build-up. Field tests indicate the best results were achieved by using large initial slug treatment (1.8 to 5.4 lbs of stick per foot of interval) followed by smaller periodic treatments (about half of the initial slug amount).

Note

A REACTIVE EQUIVALENCY of ACID CAPS vs. HCL ACID RATIO was determined by field tests. These tests indicated that about 10 ACID CAPS (1 ¼" X 15") dropped in an injection well, resulted in an equivalent pressure drop, as did using 120 gallons of 15% HCl acid. Liquid HCl acid loses strength by reacting on the steel, scale and rust inside the pipe all the way down the well while the sticks release most of their acid down-hole.

The most common procedure

Shut-in the well, first remove the plastic wrapper and then drop sticks through a lubricator and return well to injection. This procedure is best for open-hole, no rat-hole, low rate wells, or wells deeper than 3,300 feet. FOR SHALLOW PERFORATED WELLS WITH RAT-HOLE drop sticks and leave well shut-in about 15 minutes or until sticks fall to the perforations (whichever occurs first) then return well to injection. The time in minutes for the sticks to fall to the perforations in a shut-in well is equal to the depth of perforations divided by 110. (Time,min = Depth,ft / 110).

Product specifications

The stick will normally dissolve in 20 to 80 minutes (in moving water or when falling through water) depending on temperature, salt content and relative water motion. ACID CAPS are 100% soluble in water. The melting point of the stick is 145ºF. The stick will dissolve in water in wells with BHT below 145º (just at a slower rate). Lab tests indicate the dissolving rate in 50,000 PPM moving brine water to be 105 minutes @ 100º, 38 minutes @ 120º, 7 minutes @ 140º, and 2 minutes @ 180º. If slowing the dissolving rate is desired, coat ACID CAPS with oil or grease. The specific gravity is 1.23. The falling rate through fresh water is approximately 110 feet per minute. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided (see MSDS). Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag before using. Bag can be used as a glove to avoid contact.

S&B Pellets

S & B pellets are water-soluble pellets designed to release acid down-hole in water injection and producing wells to remove carbonate scale and rust deposits. S & B pellets are a combination of acids, surfactant, dispersing agent, iron sequester and inhibitor in a solid pellet form

Product uses

S & B pellets are primarily recommended for use in water injection wells and producing wells to remove carbonate scale, rust deposits and lower injection pressure on injection wells. Injection pressure drops of several hundred PSI have been observed following S & B treatments. Some wells have gone on vaccum and taken water by gravity. Success also has been experienced in some oil and gas producing wells and water supply wells by increasing flow rates.

S & B pellets can be applied directly into the well or introduced to the water system through the water supply tank. In producing pumping wells the S & B pellets can be introduced through a slug pot connected to the casing and flushed down the annulus by adding produced fluids into the pot to wash the pellets down hole, provided there is no isolation packer down hole. Dropping the pellets directly into the well is best because not as much dilution of the material will occur. In wells with tubing obstructions or small valve openings, S & B may be successfully used by first dissolving the pellets in fresh water and then pumping or pouring the solution into the well.

Product advantages

S & B pellets are very economical (as compared to conventional scale removal operations) and can eliminate or delay the need for HCL acid treatments. Continuous treatment with S & B pellets (especially after a conventional acid or clean-out job) can extend the time period between future scale removal operations. S & B pellets are less corrosive to steel pipe than conventional liquid HCL acid jobs because most of the acid generated by the pellets are released down hole. Conventional liquid HCL acid reacts with the steel, rust, and scale inside the pipe all the way down the well. S & B pellets are corrosion inhibited and mildly corrosive to steel (like inhibited amidosulfonic acids).

S & B pellets are safe to handle and easy to use by less experienced field personnel, however like all acids, contact with eyes or skin should be avoided and MSDS Sheets should be reviewed for additional safe handling measures before handling any such material. S & B pellets for short periods of time are safe to use in cement lined tubing and plastic lined tubing. Continued treatments over long periods of time through a by-pass feeder into cement lined pipe should be avoided.

Treatment determination & procedure for production operations

S & B pellets dissolve slowly and releases the chemical into the system. The amount of pellets required is based on the volume of water to be treated, number of feet of perforated interval or open hole and severity of scale build up down hole and on the metal surfaces. Field tests indicate that the best results were achieved by using a larger initial slug treatment (1.8 to 5.4 lbs of pellets per foot of interval) followed by smaller periodic treatments of (.75 to 2.5 lbs. of pellets per foot of interval). A small application scoop is provided with each container of product sold.

It is often best to slug the system with the initial slug treatment and then periodically add the reduced treatment rate to maintain control of the problem.

Note

A REACTIVE EQUIVALENCY of S & B pellets vs. HCL ACID RATIO was determined by field tests. These tests indicated the approximately 15 pounds of S & B pellets dropped in an injection well resulted in an equivalent pressure drop as did using 120 gallons of 15% HCL Acid. Liquid HCL acid looses strength by reacting on the steel, scale and rust inside of the pipe all the way down the well while the pellets release most of their acid down hole in the produced fluid and where the problem areas are most commonly encountered.

Product specifications

S & B pellets are a white to off-white pellet with a specific gravity of 1.20 - 1.25. This pellet will therefore fall quite readily in Heavy Brine.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Pellets should be stored in a cool dry place. Always remove pellets from the container with the scoop provided while wearing rubber gloves to avoid skin contact. Goggles are advised.

Drilling products

Drill Bit Stick

DRILL BIT STICKS are condensate-dispersible water-soluble sticks containing a combination of surfactants and friction reducer. DRILL BIT STICKS will perform in the presence of salt and freshwater systems.

Product uses

DRILL BIT STICKS are primarily recommended for use to increase the drilling efficiency and life of the drill bits. The slick coating and foaming action increases the efficiency of the drilling process by preventing the clays from sticking and balling up on the drill bit while drilling operations are going on. This same slick coating and foaming action will also help prevent the jets on the drill bit from plugging, therefore optimizing mud and cutting returns to the surface and improving drill bit penetration into the ground formations.

DRILL BIT STICKS can also be used to increase the swabbing efficiency and life of the swab cups. The slick coating and foaming action increases efficiency of the swab and extends the life of swab cups. The perforations are often cleaned as a result of the detergent and swabbing action.

DRILL BIT STICKS can be used to remove fluid from gas-condensate wells and flowing oil wells, however Select Industries has a broad range of sticks specifically designed for this procedure. For gas-condensate wells with more than 75% condensate, it is recommended to use Select Industries OIL FOAM STICKS™.

Product advantages

DRILL BIT STICKS are an economical way of improving the efficiency of drilling operations by keeping the drill bit clean of debris and improving mud and drill cutting returns to the surface. Drill bit penetration into the ground formations will also increase due to bit and jets remaining clean of debris.

Treatment determination & procedure for drilling operations

The number of DRILL BIT STICKS to be used varies from one drilling operations to the other. The weight of mud, drilling depth and water weight can also affect the number of sticks to be dropped.

Note

This amount recommended is based on past field drilling tests and operating under normal drilling operations and procedures. To determine the optimum amount of sticks required for periodic treatments you may choose to gradually increase or decrease the number of sticks until the most economical treatment point is reached.

The most common procedure

Drop the specified number of sticks to be dropped from the chart each time an additional joint of drill stem is added to the drill string in the drilling operation. As the fluid moves down the hole the surfactants and friction reducer will dissolve and penetrate the drilling fluids and slick up the metal surfaces. It is important to add the desired volume of sticks each time a new joint of drill stem is added to the string to maintain the slick film on the metal surfaces.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or cardboard tube before using. Bag or tube can be used as a glove to avoid contact with hands.

Sapp Sticks

SAPP Sticks (sodium acid pyrophosphate) are condensate-dispersible, water soluble sticks containing a combination of surfactants, blended with a sodium acid pyrophosphate. SAPP Sticks will perform in the presence of salt, or in freshwater systems.

Uses and advantages

SAPP Sticks are primarily designed as a mud thinner/dispersant. However, other advantages that have been realized from the use of SAPP Sticks include;

- Decreased wear on shaker screen due to thinner mud
- Friction Reducer
- Helps prevent the formation of “mud rings”
- Helps prevent bit balling
- Calcium Inhibitor
- Ph reducer

Treatment procedure

The number of SAPP Sticks to be used varies from one drilling operation to the other. The weight of mud, drilling depth and water weight can affect the number of sticks to be dropped. Field test indicates the best results are achieved under normal drilling operations when 1 to 2 (11/4x15) sticks were dropped to each joint of drill stem added.

The amount recommended is based on past field test and operating under normal drilling operations and procedures. To determine the optimum amount of sticks required for periodic treatments, you may choose to gradually increase or decrease the number of sticks until the most economical treatment point is reached.

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or cardboard tube before using. Bag or tube can be used as a glove to avoid contact with hands.

Gas producing / agitation

Gas Caps

GAS STICKS are water-soluble solid sticks designed to generate gas** and provide agitation energy to the foaming agent in a totally dead watered-up gas wells. The GAS STICK is a water soluble tube containing a surfactant foamer and a gas producing agent.

Product uses and advantages

GAS STICKS are primarily used to produce gas to help de-watering of gas wells, kicking off dead wells, and other areas involving foam and agitation. Although a small amount of foam will be produced by the GAS STICKS, it is recommended to pre-treat with SLICK STICKS or SUPER FOAM STICKS to provide more foam. The creation of foam reduces the hydrostatic back pressure on the formation. Then the natural gas can break through from the formation and kick-off the well.

GAS STICKS are unique since the sticks produce gas and some foam as the stick dissolves. The stick does not depend upon natural gas production to agitate the foaming agent to produce foam. Some water is necessary for the GAS STICKS to produce gas.

GAS STICKS are very economical (as compared to conventional swabbing costs). GAS STICKS should be used as a last resort before having to call out a swabbing unit to swab a dead well. If the well is producing a small volume of natural gas, it is recommended to use SLICK STICKS or SUPER FOAM STICKS to foam the water and kick-off the well.

Treatment determination

The number of sticks is based on the volume of water above the perforations to be agitated. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of GAS STICKS™ to the fluid above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 lb to 3.50 lb of stick per BBL of water to be agitated. Often agitating the top one-half portion of the water column may create enough gas and foam to kick-off the well. For best results use SLICK STICKS or SUPER FOAM STICKS with GAS STICKS.

Product specifications

The stick will dissolve in about 5 to 15 minutes (in moving water or when falling through water) depending on temperature, salt content, and relative water motion. GAS STICKS are 100% soluble in water and insoluble in oil. The soluble tube will melt at 145ºF. The stick will dissolve in water in wells with BHT below 130º (just at a slower rate). The specific gravity is 1.35. The falling velocity through fresh water is approximately 120 feet per minute.

Caution

GAS STICKS have a limited shelf life of 2 to 3 months and should be ordered for immediate use only. Sticks should be stored in a cool, dry and ventilated area. As in all industrial chemical, contact with eyes or skin should be avoided. Wash thoroughly with water. Always remove stick from plastic bag before using. Bag can be used as a glove to avoid contact with hands.

Health and safety

**Gas produced is carbon dioxide which is not flammable. Should be used in Gas wells only. DO NOT put into water in a closed area. Keep good ventilation where sticks are stored. See MSDS sheet. Quantity of gas produced per stick is quite small. Gas Sticks are recommended only when a gas well is totally dead.

Fizz Sticks

SELECT FIZZ FOAM STICKS are water-soluble sticks containing a combination of surfactants and additional additives to self activate and speed up the foam stick dissolving rate and activation of the foam process down hole in the existing produced fluids. The self activating additive and surfactants react immediately upon contact with water and creates an effervescing effect to help establish the foam column required to help remove the fluids from down hole in most cases. The FIZZ FOAM STCK has been found to be effective in speeding up the foaming process in wells with bottom hole temperature below 90 degrees Fahrenheit. In addition to the effervescing effect of the FIZZ FOAM STICK, natural gas bubbling through the water-column and surfactants produces foam, which can help remove water from watered-up gas wells.

Product uses

SELECT FIZZ FOAM STICKS are primarily used to remove water from gas wells and increase gas production. The foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

SELECT FIZZ FOAM STICKS can be used to remove fluid from gas-condensate wells and flowing oil wells. For gas-condensate wells with more than 75 percent condensate, it is recommended to use SELECT OIL FOAM STICKS in conjunction with SELECT FIZZ FOAM STICKS.

SELECT FIZZ FOAM STICKS can be used to increase the swabbing efficiency and life of swab cups. The extremely slick coating along with the foaming action increases efficiency and life of the swab cups and allows the well to flow easier. The perforations are often cleaned as a result of the surfactants and swabbing action.

Product advantage

SELECT FIZZ FOAM STICKS are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting and coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of SELECT FIZZ FOAM STICKS to be used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of ½ to 1 percent by weight of SELECT FIZZ FOAM STICKS to water above the perforations. A treatment of ½ to 1 percent by weight would require 1.75 to 3.50 pounds of stick per barrel of water.

Note

This amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment rate until the most economical point is reached. Periodic treatments with SELECT FIZZ FOAM STICKS may be necessary to prevent production decline due to gradual water build-up. It is much easier to maintain gas production with regular insertion of SELECT FIZZ FOAM STICKS than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS may be used in conjunction with SELECT FIZZ FOAM STICKS to provide additional agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 45 seconds or until sticks contact top of fluid then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have contacted top of fluid) flow well about 25 percent of pretreatment rate for about 20 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks if possible.

Product specifications

The stick will normally dissolve in 20 to 80 minutes depending on temperature, salt content and relative water motion. SELECT FIZZ FOAM STICKS are virtually soluble in water and insoluble in oil. The melting point of the stick is 122 degrees Fahrenheit. The stick will dissolve in water in wells with BHT below 122 degrees (just at a slower rate). Lab tests indicate the dissolving rate in 50,000 PPM moving brine water to be 35 minutes @ 100 degrees, 15 minutes @ 120 degrees, 5 minutes @ 140 degrees and 1 minute @ 180 degrees. The dissolving time will decrease if the sticks are broken before dropping or if they break upon impact with the top of the fluid. The specific gravity is 1.1. The falling rate through fresh water is approximately 100 feet

per minute. The stick can free fall (through air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided (see MSDS). Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or split cardboard tube before using. Bag or cardboard tube can be used as a glove to avoid contact.

Well Rescue Pack

The alarm number for your dead gas well.

Product uses

The Well Rescue Pack was specifically designed as a last resort for your watered up gas well. Dead gas wells lack the agitation required to benefit from conventional soap sticks or liquid foamer. Generally, once a well is dead, unless you are able to shut it in for long periods and build up enough bottomhole pressure to unload the fluid, your options are limited to expensive mechanical methods (swab units, gas lifts, pumps, etc.)

Product description

The Well Rescue Pack is a kit assembled with cost savings in mind. Each kit will include thirteen (13) 100% active foamer sticks as well as thirteen (13) high performance gas producing sticks. When used as directed, the foamer sticks are dispersed into the downhole fluid and the gas producing sticks create the agitation to foam the fluid.

Treatment recommendations

The Well Rescue Pack was designed with a “one well, one pack” application in mind. In most cases, the typical treatment would be to drop the thirteen (13) 100% active foamer sticks into the well. The foamer sticks will need time to dissolve and disperse into the fluid column. Generally in no agitation, 70 degree fluid, 3 hours will be needed to achieve this. In deeper, hotter wells, less time will be required. After the required time, the thirteen (13) high performance gas producing sticks are dropped into the well. After the sticks have been given time to reach fluid, open the master valve of the well 25%. As fluid starts to unload from the well, slowly continue to open the master valve. Note: Even in cases where the Well Rescue Pack fails to unload the well, benefits will be seen from the foamer downhole when mechanical operations are used to remove fluid from the gas well.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag or paper tube before using. Bag or tube can be used as a glove to avoid contact with hands.

Inhibitors

Help prevent build-ups and deposits

Corrosion Inhibitor Sticks

Corrosion Inhibitor sticks are available in both oil soluble and water soluble. They are primarily used to control common corrosion problems found in producing oil and gas well systems.

Corrosion Inhibitor Pellets

SELECT CIP-25 PELLETS are water-soluble pellets designed to release corrosion inhibitor and control corrosion from various sources. SELECT CIP-25 PELLETS exhibit surface activity which aids in solids removal and control while helping the breeding grounds for micro-organisms. SELECT CIP-25 PELLETS contain Ammonium Quaternary Salt in pellet form.

Product uses

SELECT CIP-25 PELLETS are primarily recommended for use to control corrosion and aid in solids removal while helping breeding grounds for micro-organisms in water injection systems (tanks, wells, and flow lines).

SELECT CIP-25 PELLETS can be used to treat certain hard to reach areas in water injection systems. Dead areas such as rat-hole, annulus space above the packer, and the bottom of the water supply tanks may be reached and more easily treated with SELECT CIP-25 PELLETS.

SELECT CIP-25 PELLETS can be used to control corrosion in oil wells, gas wells, and cooling towers.

Product advantages

SELECT CIP-25 PELLETS are very economical (as compared to conventional corrosion control operations). The use of corrosion pellets saves investment in chemical pumps, drums of liquid chemical, hazardous liquid chemical spills and maintenance of equipment.

Treatment determination & procedure for production operations

SELECT CIP-25 PELLETS dissolve slowly and releases the chemical into the system. The amount required is based on the volume of water to be treated and severity of corrosion attack to the metal surfaces. The best results are achieved by using a larger initial slug treatment (30 to 60 PPM daily) based on the weight of total water volumes produced until the corrosion problem is under control or desired amine residual achieved, then reduce to smaller periodic treatments (15 to 30 PPM daily) thereafter. EXAMPLE: An initial slug treatment of 60 PPM would require 2.10 lbs. of Corrosion Inhibitor Pellets per 100 BBL (4,200 gal.) of water to be treated. A small application scoop is provided with each container of product sold.

It is often best to slug the system with product and then add regularly to maintain control of the problem.

Product specifications

SELECT CIP-25 PELLETS are a white to off-white pellet with a specific gravity of 1.13-1.17. This pellet will therefore fall quite readily in Heavy Brine.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Pellets should be stored in a cool dry place. Always remove pellets from the container with the scoop provided while wearing rubber gloves to avoid skin contact. Goggles are advised.

Corrosion Inhibitor Sticks - Type C

CORROSION INHIBITOR STICKS are water soluble. Amine Salts and Surfactants in water-soluble paper tubes. This stick is especially effective in preventing Hydrogen Sulfide corrosion caused by sulfide reducing bacteria. The result of effective treatment will be reduced corrosion rates, a reduction in iron counts and iron sulfide deposits.

Product uses and advantages

CORROSION INHIBITOR STICKS are used to control corrosion in gas wells, injection systems and other systems where liquid products are difficult to apply. This product requires no special pump or equipment since it will drop through gas or fluids to reach the corrosive area. Corrosion control is excellent at elevated temperatures (275 degrees Fahrenheit plus) found in deep gas wells.

Treatment determination & procedure

The number of CORROSION INHIBITOR STICKS required is based on the severity of the problem being encountered and volume of water to be treated. The best results are achieved by using an initial slug treatment of 1 stick per 10 barrels of water to be treated. The period of time between treatments will be dictated by the severity of the problem. EXAMPLE: An initial treatment of 24 barrels (1,000 gallons) of water would be 2 sticks.

Note

To successfully control corrosion problems, the inhibitor must have adequate contact time. A minimum of 2 hours shut-in is recommended for gas wells. This will allow the stick to clean the system and lay down a good inhibitor film.

Product specifications

The stick will dissolve in 12 to 24 minutes in moving water or falling through the water (the melting time will vary due to salinity, temperature or relative motion of the water). The stick will melt at 132 degrees Fahrenheit. The falling velocity through fresh water is approximately 100 feet per minute.

Caution

Store in dry cool place. Avoid contact with eyes, skin or clothing. Avoid breathing vapors in closed spaces.

Corrosion Inhibitor Sticks - Type B

CORROSION INHIBITOR STICKS™ are water-soluble designed to release corrosion inhibitor and control corrosion from various sources. Type B CORROSION INHIBITOR STICKS™ contain Amine Salt in stick form.

Product uses

CORROSION INHIBITOR STICKS™ are primarily used to control corrosion in water injection systems (tanks, wells, and lines) and down hole applications.

CORROSION INHIBITOR STICKS™ can be used to treat certain hard to reach areas in water injection systems. Dead Areas such as in the rat-hole, annulus space above the packer, and the bottom of the water supply tanks may be reached and more easily treated with CORROSION INHIBITOR STICKS™.

CORROSION INHIBITOR STICKS™ can be used to control corrosion in oil wells, gas wells and cooling towers.

Product advantages

CORROSION INHIBITOR STICKS™ are very economical (as compared to conventional corrosion control operations) and saves investment in pumps, drums of chemical, and maintenance.

Treatment determination & procedure

The number of CORROSION INHIBITOR STICKS™ required is based on the volume of water to be treated. The best results are achieved by using a larger initial slug treatment (400 PPM daily) until problem is under control then reduce to smaller periodic treatments (200 PPM daily)

thereafter. EXAMPLE: An initial slug treatment of 400 PPM would require 3.2 lbs of Corrosion Inhibitor Sticks™ per 24 BBL (1,000 gal.) of water to be treated.

Note

To successfully control any corrosion problem, the inhibitor insertion into the fluid stream must be constant. For best results in intermittent treatments increase amount of sticks according to the problem.

The most common procedure

For water injection systems is to drop the sticks into the water supply tank as more of the system will be treated. For producing wells, it is recommended to shut-in well and drop sticks through lubricator. Leave well shut for about 15 minutes or until sticks fall to the bottom then return well to production. The time in minutes for the sticks to fall to the bottom (assuming well is shut-in with fluid at surface) is equal to the depth divided by 100. (Time,min. = Depth,ft / 100).

Product specifications

The stick will dissolve in 12 to 24 minutes (in moving water or when falling through water) depending on temperature, salt content, and relative water motion. The stick will melt at 132ºF. The stick will dissolve in water in wells with BHT below 132º (just at a slower rate). If slowing the dissolving rate is desired (for wells above 132º), coat CORROSION INHIBITOR STICK™ with oil or grease. The specific gravity is 1.15. The falling velocity through fresh water is approximately 100 feet per minute.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Read and refer to MSDS sheet before using. Always remove stick from plastic bag before using. Bag can be used as a glove to avoid contact with hands. Corrosion Inhibitor Sticks™ (Type B) are for export industrial use (outside the USA) and are not to be used in potable water wells.

Corrosion Inhibitor Sticks - Type A

CORROSION INHIBITOR STICKS™ Type A are water dispersible and oil-soluble sticks that contain a blend of Imidazolines which have excellent filming characteristics and low emulsion tendencies. This unique blend gives effective corrosion control for most oil field corrosion problems.

Product uses

CORROSION INHIBITOR STICKS™ can primarily be used to control common corrosion problems found in producing oil and gas well systems.

CORROSION INHIBITOR STICKS™ can be used to treat hard to reach areas. Dead areas such as the annulus space above the packer, rat-holes, or the bottom of water supply tanks may be easily treated with CORROSION INHIBITOR STICKS™.

Product advantages

CORROSION INHIBITOR STICKS™ can provide corrosion control throughout the entire production system. Regular usage of CORROSION INHIBITOR STICKS™ will help control corrosion problems at the point where they begin…down hole.

CORROSION INHIBITOR STICKS™ are available in two different formulations (oil-soluble and water-dispersible) or (water soluble and oil-dispersible). The oil-soluble type is soluble in oil, condensate and wet gas and can slowly disperse inhibitor into the water phase. The water-soluble type is soluble in water and can slowly disperse inhibitor into the oil phase.

CORROSION INHIBITOR STICKS™ can effectively inhibit corrosion in wells that produce both water and distillate or oil phases. In this case, it may be desirable to treat the well with both types of sticks by first dropping water-soluble sticks and allowing them to fall through the oil and into the water (dissolving and releasing inhibitor in the water column). Then drop the oil-soluble sticks which will “FLOAT” at the oil-water contact (slowly dissolving and releasing inhibitor in the oil column).

CORROSION INHIBITOR STICKS™ are economical (as compared to convention corrosion control operations) and saves investment in pumps, drums of chemical, and equipment maintenance.

Treatment determination

The number of CORROSION INHIBITOR STICKS™ required is based on the volume of total fluid produced (oil or condensate plus water). Field experience indicated that for most corrosive environments the best results are achieved by using a larger initial slug treatment (80 PPM daily) until the problem is under control then reduce to smaller periodic treatments (40 PPM daily) thereafter. EXAMPLE: An initial slug treatment of 80 PPM would require 0.64 lbs of CORROSION INHIBITOR STICK™ per 24 BBL (1,000 gallons) of total fluid produced. CORROSION INHIBITOR STICKS™ may be used in wells with bottom-hole temperature (BHT) up to 375ºF.

Note

To successfully control any corrosion problem, the inhibitor insertion into the fluid stream must be constant. For intermittent treatment or for extreme corrosive environments increase the number of sticks accordingly.

The most common procedure

For producing wells is to shut-in well and drop sticks through lubricator. Leave well shut until sticks fall to the bottom. The time in minutes for the sticks to fall to the bottom (assuming well is shut-in with fluid at surface) is equal to the depth divided by 100. (Time,min. = Depth,ft / 100). FOR WATER INJECTION SYSTEMS drop the sticks into the water supply tank to inhibit more of the system.

Product specifications (oil and water soluble types)

OIL-SOLUBLE: The stick will dissolve in 20 to 120 minutes (in moving diesel) depending on temperature, salt content, and relative fluid motion. The stick will melt at 135ºF. The specific gravity is 0.95.

WATER-SOLUBLE: The stick will dissolve in 12 to 24 hours (in 50,000 PPM moving brine water) depending on temperature, salt content, and relative fluid motion. The stick will melt at 125ºF. The specific gravity is 1.10.

Caution

As in all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag before using. Bag can be used as a glove to avoid contact.

PARAFFIN INHIBITOR STICKS

PARAFFIN INHIBITOR STICKS™ are oil-soluble sticks that release paraffin inhibitor to help reduce paraffin deposition from crude oil in production systems. PARAFFIN INHIBITOR STICKS™ contain a combination of micro-crystalline wax and a special crystal modifier. These ingredients contribute to an effective inhibiting process on certain ranges of molecular weight paraffins.

Product uses

PARAFFIN INHIBITOR STICKS™ are primarily used to prevent paraffin deposition in crude oil production systems. PARAFFIN INHIBITOR STICKS™ are not designed to remove existing paraffin deposits but can soften these deposits and often make conventional paraffin cutting operations easier and faster.

PARAFFIN INHIBITOR STICKS™ inhibit paraffin deposition by the crystal modification method. This method keeps paraffin particles from sticking together. PARAFFIN INHIBITOR STICKS™

are effective on certain ranges of molecular weight paraffins. Testing the sticks for effectiveness can be done by simply trying the sticks in the field or by testing the crude oil in the laboratory. To be effective, the inhibitor must be in solution in the oil before paraffin precipitation starts to occur.

Product advantages

PARAFFIN INHIBITOR STICKS™ are very economical (as compared to conventional paraffin cutting and removal operations) and can eliminate or delay the need for conventional paraffin removal operations. Continuous treatment with PARAFFIN INHIBITOR STICKS™ (especially after a conventional paraffin removal job) can extend the time period between future operations.

PARAFFIN INHIBITOR STICKS™ are safe to handle and easy to use by less experienced field personnel and are compatible with normal oil field corrosion inhibitors and production chemicals.

PARAFFIN INHIBITOR STICKS™ can be dropped directly into a producing well or inserted into an oil flow line (using a T-Connection Pipe) or dropped into the oil storage tanks. Dropping the sticks directly into the well is more desirable as more of the production system can be protected.

Treatment determination

The number of PARAFFIN INHIBITOR STICKS™ is based on the volume of crude oil to be treated. Laboratory tests indicate that periodic treatments of 50 PPM can help control paraffin deposition. A treatment of 50 PPM would require 0.37 lbs of PARAFFIN INHIBITOR STICK™ per 24 BBL'S (1,000 gallons) of crude oil produced.

STICK RATIO (Initial Slug Treatment)1 Stick per 82 BBL'S of total fluid1 Stick per 56 BBL'S of total fluid1 Stick per 41 BBL'S of total fluid1 Stick per 27 BBL'S of total fluid1 Stick per 10 BBL'S of total fluid

Note

Superior results are obtained by using PARAFFIN INHIBITOR STICKS™ regularly and immediately after a well is cleaned. To successfully control any paraffin problem, the inhibitor insertion into the fluid stream much be constant and be present in fluid before paraffin deposition starts to occur. For best results in intermittent treatment increase the number of sticks accordingly. Stick will float and dissolve at oil and water contact point in well.

Product specifications

The stick will dissolve slowly in 1 to 4 hours and release inhibitor gradually into the production system depending on temperature, crude oil solubility, and relative fluid motion. The stick will melt at 140ºF. The stick will dissolve in oil in wells with BHT less than 140º (just at a slower rate). The specific gravity is 0.83. The falling velocity through oil is approximately 100 feet per minute.

Caution

As in all industrial chemical, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Refer to MSDS sheet before using. Always remove stick from plastic bag before using. Bag can be used as a glove to avoid contact with hands.

SALT STICKS

In many Gas wells the water that enters the well bore contains various amounts of salts (sodium chloride and other salts) dissolved in the water. Often, the fluid moves up the casing or tubing, these dissolved salts will precipitate out and reduce the opening in the pipe and in some instances totally plug the pipe.

Product information

There are various treatments for this condition such as dumping fresh water into the wells or going in with tools to clear this problem.

The SELECT SALT STICK helps keep the salt in solution by salt cheleating action and helps prevent this build up from occurring or greatly reduce the situation.

In order to be effective the SELECT SALT STICK should be used regularly two or three times per week. In most wells 1-2 sticks per treatment should be sufficient. Treatment amounts can be increased for large water volume situations.

If SELECT SALT STICKS are used in conjunction with SOAP STICKS – we suggest using the SELECT SALT STICK on days or times when not using SOAP STICKS to get the maximum benefit from the SELECT SALT STICKS.

The sticks will normally dissolve in 20 to 80 minutes depending on temperature, salt content, and relative water motion. Sticks are 100% soluble in water. Stick melting point is around 120ºF.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided (See MSDS). Wash hands thoroughly with water. Sticks should be stored in a cool dry place. Slide stick from tube or bag before using. Wear gloves when handling.

Scale Inhibitor Sticks

Scale Inhibitor sticks will prevent carbonate types of scale from depositing in casing, tubing and flow lines.

Gyp Crystals

GYP CRYSTALS are a solid polyphosphate scale inhibitor used for the prevention of alkaline earth metal scale deposits. GYP CRYSTALS exhibit the “threshold effect” in aqueous solutions to prevent the formation of scale deposits.

Typical properties

Bulk Density, lb/cu. ft.	87
Ratio NA20 to P205	1.1 to 1.0
Grade, Walnut Size	3/8” to ¾”
pH (1% solution)	6.8
Solubility in fresh water or brine water	Soluble in all concentrations
Solubility in brackish or brine water	Solubility decreases with increased salinity

Chemical description

GYP CRYSTALS are an inorganic glassy polyphosphate that is soluble in fresh, brackish, or brine water. GYP CRYSTALS exhibit the “threshold effect”; i.e., small concentrations of chemical prevent scale deposition by holding a much larger quantity of multivalent cations in solution.

Limitations

The reversion rate of GYP CRYSTALS to orthophosphate increases with increasing temperature, higher phosphate concentration and lower pH. The effectiveness of any inorganic phosphate as a scale inhibitor is lost when it reverts to orthophosphate.

Mechanical bridging of the GYP CRYSTALS may occur in wells having small annuli. This will prevent the material from reaching the fluid level. Also, some wells have a rat hole at the bottom which is by-passed by produced fluid flowing from the formation to the tubing. Where these possibilities exist, poly (meta) phosphate counts should be made on the produced water to determine if the phosphate is going into solution.

The solubility of GYP CRYSTALS is controlled by its particle size, water temperature and other ions in solution. GYP CRYSTALS are highly soluble in fresh water; thus, the entire treatment may be solubilized too rapidly to afford long term protection. GYP CRYSTALS are not recommended for wells having bottom-hole temperatures above 150ºF.

Recommended uses

GYP CRYSTALS are recommended for the following:

- Inhibition of alkaline earth metal scale deposits such as calcium carbonate, calcium sulfate, barium sulfate, etc.
- Removal of scale deposits. Scale that has already formed may become soft and disintegrate into the produced fluid after a period of time.

Treating applications

GYP CRYSTALS should be used where solid scale inhibitors are applicable. Some of these applications are:

- Pumping oil wells making water (open annulus)
- Water injection systems
- Water disposal systems

Suggested treatment method and rates

The severity of the scale problem and treating economics will dictate the rate of treatment. Initial GYP CRYSTALS treating recommendations should be based on a thorough study of the system and complete water analysis should establish:

(a) the type of scale most likely to form
(b) the severity of the scale problem
(c) the temperature at which the scale will most likely form
(d) the point at which the chemical should be applied in order to obtain the best results.
Poly (meta) phosphate counts should be used to determine the need for periodic maintenance treatments.

The treating method will depend upon the type of system. Some suggested treating methods follow:

- Batch treatments (usually 50 lbs.) down the annulus of a pumping oil well followed by periodic maintenance treatments.
- Through a ball feeder having a screen at the bottom of the feeder.
- By diverting a side stream of the water over a bed of GYP CRYSTALS and washing the chemical down the annulus.
- By other methods as may be practical for specific application.

Scale Inhibitor Pellets

SELECT SIP-100 exhibits what is known as the “threshold effect”. This happens when very small amounts of a scale inhibitor (SIP-100) can help keep large quantities of scalants in solution. The phosphonates in SELECT SIP-100 are very effective threshold scale inhibitors. Data shows that one molecule of phosphonate can inhibit 5,000 to 10,000 molecules of scalant. This appears to be done under present theory by the absorption of the threshold agent (SIP-100) on the “growth sites” of the scalant crystal; thereby the growth pattern is altered so that crystals are formed more slowly and are not as likely to clump together to form scaling problems on equipment. They can be considered as distorted.

Product information

SELECT SIP-100 functions in three (3) ways:

- Scale Inhibitor
- Sequestration
- Scale Removal

Scale inhibitor

The effectiveness of SELECT SIP-100 varies depending upon conditions such as water saturation, temperature, pH, super-saturation and type of scalant. The phosphonates have been found to be very effective in a wide variety of scale precipitating systems including calcium carbonate, calcium sulfate, calcium phosphate, strontium sulfate, barium sulfate, ferric hydroxide, aluminum hydroxide, copper hydroxide and others.

Sequestration of scale

Chelation or sequestration is a process of using a chemical agent to form a stable, water soluble complex with a metal ion. Sequestering is a good method of capturing and holding very low levels of unwanted metals in solution.

Efficiency of sequestration is dependent upon variables such as pH, choice of agents, etc. The best comparison is under actual use of field conditions.

Scale removal

Phosphonates remove metal oxides and scale by forming water soluble complexes with the metals. A major advantage of these products is the speed of removal of metal oxides and scale and they help reduce further corrosion of the metal surfaces by passivation; therefore, SELECT SIP-100 is useful in oil and gas systems, boilers, cooling towers, evaporators and other water systems.

Product usage

SELECT SIP-100 dissolves slowly and releases the chemicals into the system. The amount used depends on the nature of each system. Dissolving time is not determined because of the variation in all of the fluid conditions. A loading amount is suggested with small additional amounts weekly or as needed.

Use SELECT SIP-100 at a ratio of 2-3 PPM of SELECT SIP-100 to the weight of water coming into the system or the total weight of water circulating in the system. Always make allowances for the extra water being added to the system. A special scoop is provided with each container of product sold.

It is often best to slug the system with product and then add regularly to maintain control of the problem.

Product specifications

SELECT SIP-100 is a white to off-white pellet with a specific gravity of 1.5-1.65. This pellet will therefore fall quite readily in Heavy Brine.

SCALE INHIBITOR STICK WST

SCALE INHIBITOR STICKS™ contain chemicals that help prevent carbonate types of scale from depositing down holes in oil and gas wells, casing, tubing, and flow lines. It is also very useful to include ACID STICKS® in this type of treatment since the ACID STICK® will remove carbonate types of scale after being deposited and also neutralizing scale that is in the solution.

Product information

The SCALE INHIBITOR STICK™ (type WST) is a water soluble tube with salt caps and filled with scale inhibitor and dispersing agent. This product does not begin to degrade until the temperature reaches 140ºF unless it is falling in water. In water it will dissolve faster; however, the scale inhibitor inside the tube dissolves very slowly.

Treatment

Using the SCALE INHIBITOR STICK™ varies with the volume of water being produced and should be adjusted for high volume wells. In many cases one (1) or two (2) sticks every other day may be sufficient. Occasional use of ACID STICKS® will also be helpful.

For sufficient use, sticks should be placed as close as possible to source of scaling water.

SCALE INHIBITOR STICKS™ are non-toxic, but should be handled and treated like any chemical product. Avoid contact with eyes and skin. Dispose of stick in prescribed manner according to local and federal regulations.

Liquid Products

Produces high, stable foams in all brine and a wide range of pH's.

SI-403 HEAVY DUTY FOAMING AGENT

SI-403 is a blend of surfactants that produces high, stable foams in all brine and a wide range of pH’s. In addition to brine contamination SI-403 will tolerate up to 10% oil, a moderate amount of amine-based corrosion inhibitors, and 50% clay solids and still perform as an effective foaming agent. SI-403 is highly biodegradable.

Typical properties

Specific Gravity	1.02
Pounds per Gallon	8.5

Viscosity, ºF	30 cps
Flash Point, ºF	186
Pour Point, ºF	0

Recommended uses

- Foaming agent for air-mist type drilling.
- Wetting agent for concentrated caustic solutions.
- Wetting agent for concentrated hydrochloric acid solutions.

Select Well Cleaner

Help with pressure build up, loss of vacuum, decrease injection rates and more.

Injection and disposal well problems

- Pressure buildup, loss of vacuum
- Decreasing injection rates due to oil-wet solids.

Diagnosis

Injection or disposal waters with dissolved solids, silt, iron sulfide and hydrocarbons in them will tend to form a thin “cake” downhole. This material acts much the same as a fluid loss additive and causes injection pressures to increase. Plugging may eventually result.

Treatment

If possible, backflow well until water cleans up. Spearhead one (1) drum of SELECT WELL CLEANER (mixed with four (4) barrels of water) on formation face or perforations. Soak up to 24 hours. Resume injection.

Use of SELECT WELL CLEANER continuously or batch treat the injection or disposal system. This prevents buildup of oil-wet solids downhole.

Producing wells and strippers paraffin cleanup problems

Declining production or loss of production may be due to paraffin.

Diagnosis

Production has declined due to clogging of perforations and well bore or restrictions in tubing due to buildup of paraffin. Solids and water combine in paraffin causing plugging and reduced paraffin solubility.

Treatment

Mix one/half to one (1/2 – 1) drum of SELECT WELL CLEANER with 10-24 barrels of water. Pump down annulus. Continue to produce well.

Where possible use fresh water. Avoid displacing fluid into formation by using only enough to cover perforations.

SELECT WELL CLEANER enhances breakup of paraffin, helps water to coalesce and drop out and helps loosen paraffin (a slicking effect) for easier removal.

Tank bottom clean-up problems

High tank bottoms, due to

- Iron Sulfide
- Paraffin
- Dirty Oil
- Emulsion

Diagnosis

Iron sulfide can cause emulsions and solid buildup in stock tanks. Presence of paraffin will compound bad oil problems by stabilizing emulsions and coating solid particles.

Treatment

Add one to three (1-3) gallons SELECT WELL CLEANER (preferably mixed with an equal amount of fresh or salt water) to the tank. Roll tank for on/half (1/2) to three (3) hours and allow to settle. Iron sulfide and basic sediment will then be preferentially water wet and may be drawn off, leaving clean, sediment-free oil.

Pellet products

Scale Inhibitor Pellets - SIP 100

SELECT SIP-100 exhibits what is known as the “threshold effect”. This happens when very small amounts of a scale inhibitor (SIP-100) can help keep large quantities of scalants in solution. The phosphonates in SELECT SIP-100 are very effective threshold scale inhibitors. Data shows that one molecule of phosphonate can inhibit 5,000 to 10,000 molecules of scalant. This appears to be done under present theory by the absorption of the threshold agent (SIP-100) on the “growth sites” of the scalant crystal; thereby the growth pattern is altered so that crystals are formed more slowly and are not as likely to clump together to form scaling problems on equipment. They can be considered as distorted.

Product information

SELECT SIP-100 functions in three (3) ways:

- Scale Inhibitor
- Sequestration
- Scale Removal

Scale inhibitor

The effectiveness of SELECT SIP-100 varies depending upon conditions such as water saturation, temperature, pH, super-saturation and type of scalant. The phosphonates have been found to be very effective in a wide variety of scale precipitating systems including calcium carbonate, calcium sulfate, calcium phosphate, strontium sulfate, barium sulfate, ferric hydroxide, aluminum hydroxide, copper hydroxide and others.

Sequestration of scale

Chelation or sequestration is a process of using a chemical agent to form a stable, water soluble complex with a metal ion. Sequestering is a good method of capturing and holding very low levels of unwanted metals in solution.

Efficiency of sequestration is dependent upon variables such as pH, choice of agents, etc. The best comparison is under actual use of field conditions.

Scale removal

Phosphonates remove metal oxides and scale by forming water soluble complexes with the metals. A major advantage of these products is the speed of removal of metal oxides and scale and they help reduce further corrosion of the metal surfaces by passivation; therefore, SELECT SIP-100 is useful in oil and gas systems, boilers, cooling towers, evaporators and other water systems.

Product usage

SELECT SIP-100 dissolves slowly and releases the chemicals into the system. The amount used depends on the nature of each system. Dissolving time is not determined because of the variation in all of the fluid conditions. A loading amount is suggested with small additional amounts weekly or as needed.

Use SELECT SIP-100 at a ratio of 2-3 PPM of SELECT SIP-100 to the weight of water coming into the system or the total weight of water circulating in the system. Always make allowances for the extra water being added to the system. A special scoop is provided with each container of product sold.

It is often best to slug the system with product and then add regularly to maintain control of the problem.

Product specification

SELECT SIP-100 is a white to off-white pellet with a specific gravity of 1.5-1.65. This pellet will therefore fall quite readily in Heavy Brine.

Corrosion Inhibitor Pellets - SIP 25

SELECT CIP-25 PELLETS are water-soluble pellets designed to release corrosion inhibitor and control corrosion from various sources. SELECT CIP-25 PELLETS exhibit surface activity which aids in solids removal and control while helping the breeding grounds for micro-organisms. SELECT CIP-25 PELLETS contain Ammonium Quaternary Salt in pellet form.

Product uses

SELECT CIP-25 PELLETS are primarily recommended for use to control corrosion and aid in solids removal while helping breeding grounds for micro-organisms in water injection systems (tanks, wells, and flow lines).

SELECT CIP-25 PELLETS can be used to treat certain hard to reach areas in water injection systems. Dead areas such as rat-hole, annulus space above the packer, and the bottom of the water supply tanks may be reached and more easily treated with SELECT CIP-25 PELLETS.

SELECT CIP-25 PELLETS can be used to control corrosion in oil wells, gas wells, and cooling towers.

Product advantages

SELECT CIP-25 PELLETS are very economical (as compared to conventional corrosion control operations). The use of corrosion pellets saves investment in chemical pumps, drums of liquid chemical, hazardous liquid chemical spills and maintenance of equipment.

Treatment determination & procedure for production operations

SELECT CIP-25 PELLETS dissolve slowly and releases the chemical into the system. The amount required is based on the volume of water to be treated and severity of corrosion attack to the metal surfaces. The best results are achieved by using a larger initial slug treatment (30 to 60 PPM daily) based on the weight of total water volumes produced until the corrosion problem is under control or desired amine residual achieved, then reduce to smaller periodic treatments (15 to 30 PPM daily) thereafter. EXAMPLE: An initial slug treatment of 60 PPM would require 2.10 lbs. of Corrosion Inhibitor Pellets per 100 BBL (4,200 gal.) of water to be treated. A small application scoop is provided with each container of product sold.

It is often best to slug the system with product and then add regularly to maintain control of the problem.

Product specifications

SELECT CIP-25 PELLETS are a white to off-white pellet with a specific gravity of 1.13-1.17. This pellet will therefore fall quite readily in Heavy Brine.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Pellets should be stored in a cool dry place. Always remove pellets from the container with the scoop provided while wearing rubber gloves to avoid skin contact. Goggles are advised.

SIP/Salt Pellets

In many gas wells the water that enters the well bore contains various amounts of salts (sodium chloride and other salts) dissolved in the water. Often, the fluid moves up the casing or tubing, these dissolved salts will precipitate out and reduce the opening in the pipe and in some instances totally plug the pipe.

Product information

There are various treatments for this condition such as dumping fresh water into the wells or going in with tools to clear this problem.

The SIP/SALT PELLETS helps keep the salt in solution by salt cheleating action and helps prevent this build up from occurring or greatly reduces the situation.

In order to be effective the SIP/SALT PELLETS should be used regularly two or three times per week. In most wells 1-2lbs per treatment should be sufficient. Treatment amounts can be increased for large water volume situations.

If SIP/SALT PELLETS are used in conjunction with SOAP STICKS – we suggest using the SIP/SALT PELLETS on days or times when not using SOAP STICKS to get the maximum benefit from the SIP/SALT PELLETS

The pellets dissolve time will depend on temperature, salt content, and relative water motion. Pellets are 100% soluble in water.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided (See MSDS). Wash hands thoroughly with water. Pellets should be stored in a cool dry place. Use provided measuring cup to apply pellets. Wear gloves when handling.

S&B Pellets

S & B pellets are water-soluble pellets designed to release acid down-hole in water injection and producing wells to remove carbonate scale and rust deposits. S & B pellets are a combination of acids, surfactant, dispersing agent, iron sequester and inhibitor in a solid pellet form

Product uses

S & B pellets are primarily recommended for use in water injection wells and producing wells to remove carbonate scale, rust deposits and lower injection pressure on injection wells. Injection pressure drops of several hundred PSI have been observed following S & B treatments. Some wells have gone on vaccum and taken water by gravity. Success also has been experienced in some oil and gas producing wells and water supply wells by increasing flow rates.

S & B pellets can be applied directly into the well or introduced to the water system through the water supply tank. In producing pumping wells the S & B pellets can be introduced through a slug pot connected to the casing and flushed down the annulus by adding produced fluids into the pot to wash the pellets down hole, provided there is no isolation packer down hole. Dropping the pellets directly into the well is best because not as much dilution of the material will occur. In wells with tubing obstructions or small valve openings, S & B may be successfully used by first dissolving the pellets in fresh water and then pumping or pouring the solution into the well.

Product advantages

S & B pellets are very economical (as compared to conventional scale removal operations) and can eliminate or delay the need for HCL acid treatments. Continuous treatment with S & B pellets (especially after a conventional acid or clean-out job) can extend the time period between future scale removal operations. S & B pellets are less corrosive to steel pipe than conventional liquid HCL acid jobs because most of the acid generated by the pellets are released down hole. Conventional liquid HCL acid reacts with the steel, rust, and scale inside the pipe all the way down the well. S & B pellets are corrosion inhibited and mildly corrosive to steel (like inhibited amidosulfonic acids).

S & B pellets are safe to handle and easy to use by less experienced field personnel, however like all acids, contact with eyes or skin should be avoided and MSDS Sheets should be reviewed for additional safe handling measures before handling any such material. S & B pellets for short periods of time are safe to use in cement lined tubing and plastic lined tubing. Continued treatments over long periods of time through a by-pass feeder into cement lined pipe should be avoided.

Treatment determination & procedure for production operations

S & B pellets dissolve slowly and releases the chemical into the system. The amount of pellets required is based on the volume of water to be treated, number of feet of perforated interval or open hole and severity of scale build up down hole and on the metal surfaces. Field tests

indicate that the best results were achieved by using a larger initial slug treatment (1.8 to 5.4 lbs of pellets per foot of interval) followed by smaller periodic treatments of (.75 to 2.5 lbs. of pellets per foot of interval). A small application scoop is provided with each container of product sold.

It is often best to slug the system with the initial slug treatment and then periodically add the reduced treatment rate to maintain control of the problem.

Note

A REACTIVE EQUIVALENCY of S & B pellets vs. HCL ACID RATIO was determined by field tests. These tests indicated the approximately 15 pounds of S & B pellets dropped in an injection well resulted in an equivalent pressure drop as did using 120 gallons of 15% HCL Acid. Liquid HCL acid looses strength by reacting on the steel, scale and rust inside of the pipe all the way down the well while the pellets release most of their acid down hole in the produced fluid and where the problem areas are most commonly encountered.

Product specifications

S & B pellets are a white to off-white pellet with a specific gravity of 1.20 - 1.25. This pellet will therefore fall quite readily in Heavy Brine.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Pellets should be stored in a cool dry place. Always remove pellets from the container with the scoop provided while wearing rubber gloves to avoid skin contact. Goggles are advised.

Specialty products

Select Antifreeze Inhibitor Sticks

SELECT ANTIFREEZE INHIBITOR STICKS are special water-soluble sticks containing a combination of stabilizers and glycol-based antifreeze. Natural gas bubbling through the fresh water-column, glycol-based antifreeze and stabilizers produces an aqueous product, which can help reduce the freeze point of the produced water in the production string, flow lines and surface equipment.

Product information

The SELECT ANTIFREEZE INHIBITOR STICKS also contain minimal corrosion and scale inhibitors to protect steel in industrial coolant and heat transfer systems. This product should not be considered as an alternative treatment method for corrosion and/or scale in oil and gas producing systems. SELECT CORROSION INHIBITOR or SELECT ANTIFREEZE INHIBITOR STICKS should and can be used in conjunction with the SELECT ANTIFREEZE INHIBITOR

STICK. The SELECT ANTIFREEZE INHIBITOR STICK can be very effective in reducing ice blockage in gas pipelines where there are orifice plates, chokes and velocity changes by reducing the freeze point of the water within the system.

In order to be effective the SELECT ANTIFREEZE INHIBITOR STICK should be used regularly two or three times per week. In most gas producing wells 1-2 sticks per treatment should be sufficient. Treatment can be increased for larger water volume situations.

If SELECT ANTIFREEZE INHIBITOR STICKS are used in conjunction with SOAP STICKS- we suggest using the SELECT ANTIFREEZE INHIBITOR STICK on days or times when not using SOAP STICKS to get the maximum benefit from the SELECT ANTIFREEZE INHIBITOR STICK.

The stick will normally dissolve in 20 to 80 minutes depending on temperature and relative water/gas motion. Sticks are 100% soluble in water. Stick melting point is around 128 degrees Fahrenheit.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided (see MSDS). Wash thoroughly with water. Sticks should be stored in a cool dry place.

Always remove stick from plastic bag or split cardboard tube before using. Bag or cardboard tubes can be used as a glove to avoid contact.

H2S Scavenger Sticks

An organic sulfide scavenger designed to help down-hole with hydrogen sulfide that is entering the well from the bottom perforated area and creating problems for the well system.

Hydrogen Sulfide Stick Shs-50

The Select SHS-50 STICK is an organic sulfide scavenger designed to help down-hole with hydrogen sulfide that is entering the well from the bottom perforated area and creating problems for the well system.

Product information

The SHS-50 H2S SCAVENGER STICK consists of a water soluble hard stick containing the organic hydrogen sulfide scavenger. The stick dissolves easily in water and has a melting point of about 145ºF. The SHS-50 STICK scavenges through the water phase in the well production; therefore, some water needs to be present in the well production for the stick to effectively scavenge hydrogen sulfide.

Product uses

Multiply: H2S PPM x MMCF x .0243 x 95.90 = lbs. of stick required

Example treatment

2 PPM H2S x 40,000 cu. ft. gas per day (.04 of 1 mm)

2 PPM H2S x .04 x .0243 x 95.9 = 1.89 lbs.

The efficiency of the SHS-50 STICK depends on many factors such as pressure, temperature, mass transfer, contact time and the quantity of water present in the production. The SHS-50 STICK rapidly complexes with hydrogen sulfide to produce a water soluble and dispersible by-product that helps minimize solids deposition on system equipment. Used and spent SHS-50 is considered to be non-hazardous and can be injected into disposal wells. SHS-50 STICKS contain an organic formaldehyde free hydrogen sulfide scavenger concentrate.

Hydrogen Sulfide Stick Shs-35

The Select SHS-35 STICK is an organic sulfide scavenger designed to help down-hole with hydrogen sulfide that is entering the well from the bottom perforated area and creating problems for the well system.

Product information

The SHS-35 H2S SCAVENGER STICK consists of a water soluble hard stick containing the organic hydrogen sulfide scavenger. The stick dissolves easily in water and has a melting point of about 120ºF. The SHS-35 STICK scavenges through the water phase in the well production; therefore, some water needs to be present in the well production for the stick to effectively scavenge hydrogen sulfide.

Product uses

Multiply: H2S PPM x MMCF x .0243 x 125 = lbs. of stick required

Example treatment

2 PPM H2S x .04 (40,000 CU. ft/day) x .0243 x 125 = 2.43 lbs. of sticks required

The efficiency of the SHS-35 STICK depends on many factors such as pressure, temperature, mass transfer, contact time and the quantity of water present in the production. The SHS-35 STICK rapidly complexes with hydrogen sulfide to produce a water soluble and dispersible by-product that helps minimize solids deposition on system equipment. Used and spent SHS-35 is considered to be non-hazardous and can be injected into disposal wells. SHS-35 STICKS contain an organic formaldehyde free hydrogen sulfide scavenger concentrate.

COR-SCAV Stick

COR-SCAV STICKS consist of a blend of a catalyzed Sodium Sulfite type oxygen scavenger and Ammonium Quaternary Salt for corrosion inhibition, contained in a fast dissolving water soluble paper tube and dissolvable salt plug.

Product uses

COR-SCAV STICKS are primarily used in oil and gas production operations where wells have been depleted of their production and are to be plugged and abandoned. In many cases these wells have untreated water pumped down the annulus as a purging agent. This water over long periods can cause degradation of the metal surfaces down hole, therefore causing loss and or leakage of fluids. The high concentration of both products in stick form when added down hole to the fluids will form a strong organic film on the metal surfaces and absorb the free oxygen in the fluids to prevent corrosion attack to the metal surfaces. The combination of products and its surface activity will also eliminate the environment for anaerobic bacteria growth.

COR-SCAV STICKS can be used to treat certain hard to reach areas in water injection systems. Dead areas such as rat-hole, annulus space above the packer, water hauling truck tanks and the bottom of water supply tanks may be reached and more easily treated

Product advantages

COR-SCAV STICKS are very economical and a cost effective way to treat and protect metal surfaces down hole in abandoned wells. The use of COR-SCAV STICKS saves investment in chemical pumps, drums of liquid chemical, hazardous liquid chemical spills and maintenance of equipment.

Treatment determination & procedure

The number of COR-SCAV STICKS to be used varies from one well operation to the other. The volume and water weight can also affect the number of sticks to be dropped. Lab and field tests indicated that the best results were achieved when a treatment rate of 400 PPM based on the weight of the total volume of water to be treated was initiated. EXAMPLE: An initial slug treatment of 400 PPM would require 3.2 lbs of COR-SCAV STICKS per 24 BBL (1,000 gal.) of water to be treated.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Always remove stick from plastic bag before using. Bag can be used as a glove to avoid contact with hands. Refer to the MSDS Sheet for any additional required and recommended information.

OXYGEN SCAVENGER STICK – TYPE WSP

SELECT OXYGEN SCAVENGER STICK (Type WSP) is a catalyzed sodium sulfite type oxygen scavenger that is compatible with high hardness brines. SELECT OXYGEN SCAVENGER STICK (Type WSP) helps control corrosion caused by the presence of oxygen by absorbing and scavenging the oxygen out of the fluid sources contaminated.

Product uses

SELECT OXYGEN SCAVENGER STICK (Type WSP) are primarily recommended for use to control oxygen induced corrosion by scavenging the oxygen out of the fluid and aid in solids removal while reducing breeding grounds for micro-organisms in water injection systems (water hauling truck tanks, storage tanks, wells, and flow lines).

SELECT OXYGEN SCAVENGER STICK (Type WSP) is a water soluble paper tube with salt caps and filled with a fine granular crystal oxygen scavenger and dispersing agent. Dead areas such as rat-hole, annulus space above the packer, water hauling truck tanks and the bottom of the water supply tanks may be reached and more easily treated with SELECT OXYGEN SCAVENGER STICK (Type WSP). SELECT OXYGEN SCAVENGER STICK (Type WSP) can be used for the removal of oxygen from waters used for heating, cooling, as well as drilling and water flood.

Product advantages

SELECT OXYGEN SCAVENGER STICK (Type WSP) is very economical (as compared to conventional oxygen scavenging control operations). The use of SELECT OXYGEN SCAVENGER STICK (Type WSP) saves investment of chemical pumps, drums of liquid chemical, hazardous liquid chemical spills and maintenance of equipment.

HA-FWF

HA-FWF Sticks are special foam sticks that contain 100% active surfactants, friction reducer and foam stabilizer in water-soluble tubes. Natural gas bubbling through the water column and 100% active ingredients produces foam which can help remove water from watered-up gas wells.

Product uses

HA-FWF Sticks were designed to be used in shallow gas wells with low bottomhole temperatures. They are fast acting sticks and will dissolve in cold fluids where other sticks require more time to dissolve. HA-FWF Sticks are primarily used to remove water from gas wells and increase gas production. This foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads.

HA-FWF Sticks can be used to remove condensate and water from gas condensate wells and flowing oil wells. For wells with more than 75% condensate, it is recommended to use OIL FOAM STICKS.

Product advantages

HA-FWF Sticks contain 100% active powdered foamer in a water soluble tube that can produce up to four (4) times more foam than some other sticks on the market. The entire stick (tube, caps, and contents) are water-soluble. The sticks are shipped ready-to-use and will not dissolve while in cool dry storage.

HA-FWF Sticks are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

Treatment determination & procedure for water removal

The number of HA-FWF Sticks used is based on the volume of water above the perforations. Field tests indicate that the best results were achieved by using a larger initial slug treatment of 1/8 to ¼ percent by weight of HA-FWF Sticks to water above the perforations. A treatment of 1/8 to ¼ percent by weight would require .44 to .88 lb of stick per BBL of water.

Note

The above amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with HA-FWF Sticks may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of HA-FWF Sticks than it is to kick off a dead well. Gas bubbling though water is necessary to create foam. If a well is totally dead, GAS STICKS may be used in conjunction with HA-FWF Sticks to provide agitation energy.

The most common procedure

Shut-in the well and drop sticks through a lubricator. Wait 30 minutes until sticks dissolve then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have dissolved) flow well at about 25% of pretreatment rate for about 30 minutes or until foam reaches surface then return to normal rate. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks.

Product specifications

HA-FWF Sticks are a powdered foamer in a water soluble tube so the foamer is released as soon as the tube starts to dissolve. This gives a quick foaming action in shallow gas wells with

cold fluid. Also, since the foamer is in a powdered form, no hardners are required leaving more active content in each stick.

Caution

As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Read MSDS sheet before using. Always remove stick from plastic bag before using. Bag can be used as a glove to avoid contact.

Inhibited Oil & Water Soluble Scraper Pigs

SELECT INHIBITED SOLUBLE PIGSTM are solid sphere shaped balls or cylinder shaped plugs. OIL-SOLUBLE type pigs (for oil systems) contain micro-crystalline wax, paraffin inhibitor and pour point depressant. WATER-SOLUBLE type pigs (for water systems) contain a water-soluble surfactant and corrosion inhibitor.

Product advantages

SELECT INHIBITED SOLUBLE PIGSTM are used to clean out paraffin deposits and other unwanted accumulations inside of pipes.

SELECT INHIBITED SOLUBLE PIGSTM (oil-soluble type) contain paraffin inhibitor and pour point depressant. The residual traces of inhibitor help prevent re-deposition of paraffin for a short period of time. The pour point depressant helps the oil that contacts the pig flow easier at lower temperatures.

SELECT INHIBITED SOLUBLE PIGSTM can be used in any length lines. The ball type pigs can go around 90o turns that may stick rubber or plastic pigs and are very inexpensive as compared to rubber or plastic pigs or hot-oil treatments. Pigs do not interfere with other production and pipeline chemicals.

Product specifications

The dissolving rate of pigs is a function of fluid temperature, relative fluid movement, friction, and absorb ability of the crude. These conditions vary greatly with each system. The melting point for our standard pig is about 145oF. Special-order melt point pigs range from 125o to 180o. All pigs will dissolve in fluids with temperatures below their melting point (just at a slower rate). Some fluid movement past the pig is necessary to dissolve the pigs if the fluid temperature is below the pig’s melting point.

Treatment determination & procedure

The number of pigs to be used is based on the amount of accumulation, length of pipe, temperature of fluid and other factors. Field experience indicate and that in short lines (500 feet or less) usually require 1 to 5 pigs and longer lines (500 feet or more) usually require 5 to 10 or more pigs. Regular periodic pigging is recommended to keep lines clean and prevent paraffin from becoming too hard or thick to remove.

The most common procedure

Insert pigs (one at a time) through a pig launcher then pump through system and continue running pigs (one at a time) into the line until:

- no additional decrease in flowing pressure or
- no additional increase in flowing rate or
- no additional accumulation is removed downstream.

If desired, the amount of fluid pushing the pig can be measured to determine the pig location. Do not use more than one pig at a time. ALWAYS record the volume of the fluid behind the pig as “insurance” so that the pig location can be calculated should it become stuck. Applying heat to the pipe can melt the pig. ALWAYS have the capability to pump from the opposite end of the lines to free an obstruction.

THE MOST COMMON SIZE PIGS ARE LISTED BELOW. Call for quotations, if a special BALL is desired. PLUGS can be made to any specification desired.

WHEN ORDERING PIGS SPECIFY: (1) Quantity (2) Pipe Inside Diameter and schedule (3) Oil-soluble or water-soluble (4) Balls or Plugs EXAMLPLE: 6 cases, 2” schedule 40 (ID 2.067”), oil-soluble balls.

Important

Pigs should be grooved on edges if there is a possibility that the pig could become stuck. This would allow some fluid movement past the pig on the edges.

Pigs can also be drilled in the center from each end; but leave an area in the center that is not drilled. This allows circulation to be established by raising pressure and breaking un-drilled portion of pig (center of the pig).