## Production Chemical Product Portfolio



| PRODUCT NAME                               | REFERENCE                 | DESCRIPTION   | SWD      | COMPLETION | PRODUCTION | WORKOVER |
|--|---------------------------|---|----------|------------|------------|----------|
| ACID                                       |                           |   |          |            |            |          |
| StimSafe®                                  | HCL Acid<br>Replacement   | Environmentally friendly, non-toxic 100% biodegradable acid replacement used to dissolve acid soluble materials downhole and in surface equipment.  | ~        | ~          | V          | ~        |
| StimSafe® 50 Acid<br>Replacement<br>System | 15% HCL<br>Replacement    | Environmentally friendly alternative acid treatment system to effectively attack scale and mineral build-up.  | ~        | V          | V          | V        |
| BIOCIDE                                    |                           |   |          |            |            |          |
| AQUCAR™ 714                                | 14:2.5 Glut/Quat<br>Blend | Water treatment biocides used as a fast-acting anti-microbial agent. Ideal to for aerobes, bacteria, SRB, and APB, algae, and yeasts. Completely miscible with water and easily dispersed.  | V        | ~          | V          | V        |
| AQUCAR GA 25                               | 25%<br>Glutaraldehyde     | Fast-acting water treatment biocides which are highly effective against aerobes, SRBs, APBs. Consumed by  | <b>v</b> | ~          | <b>v</b>   | <b>~</b> |
| AQUCAR GA 50                               | 50%<br>Glutaraldehyde     | FeS; Reduced efficacy at high temperatures.   | ~        | ~          | V          | ~        |
| AQUCAR™ DB 20                              | 20% DBNPA                 | Water treatment microbiocide that provide fast-acting broad spectrum control of bacteria, fungi, yeast, and algae. Rapid decomposition. Boiling Point: > 70°C.  | ~        | ~          | V          | •        |
| AQUCAR™DB 100                              | 100% DBNPA                | Fast-acting, non-oxidizing biocide. This product has outstanding environmental properties because it is non-persistent and degrades to naturally-occurring products. DBNPA offers efficient, cost-effective microbiological control at low use concentrations. It provides broad-spectrum control of bacteria, fungi, yeast, and algae. Rapid decomposition. Boiling Point: > 70°C. | V        | V          | V          | V        |
| AQUCAR™ PS 20                              | 20% THPS                  | Broad-spectrum biocide developed to inhibit the growth of algae, bacteria, yeasts, and fungi. Effective in both acid and alkaline environments. It is especially effective against sulfate-reducing bacteria (SRB) which are particularly troublesome in enhanced oil recovery operations. Completely miscible with water and easily dispersed.                                     | V        | V          | V          | V        |
| AQUCAR™ THPS<br>75                         | 75% THPS                  | Microbiocide that is a 76.5% aqueous solution of tetrakis (hydroxymethyl) phosphonium sulfate. This product is a broad-spectrum biocide developed to inhibit the growth of algae, bacteria, yeasts, and fungi in process waters used in various applications.   | ~        | ~          | V          | ~        |
| AMA 324                                    | 24% Dazomet               | Caustic-based, broad-spectrum biocide that releases thiocynates and carbamates for slow kills, begins to degrade at high-temp, toxic by-product of decomposition. Loading 0.5 gpt.  | ~        | ~          | V          | <b>v</b> |
| Maquat 750-M                               | Quat Blend                | Water treatment microbiocide aids in the control of bacterial, fungal, and algal slimes.  | ~        | V          | ~          | V        |

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|--|--|--|--------------------------|------------|--------------------------------------|----------|--|
| B 1203   |  | Water/ethanol based solution specifically designed and optimized for control of sulfate-reducing bacteria (SRB) that contribute to souring, the production of sulfide, and abiotic corrosion in oil field and cooling water systems, gas production and transmission pipelines and systems. Fast-acting anti-microbial agent ideal for aerobes, SRB, and APB. Completely miscible with water and easily dispersed.   | V                        | V          | V                                    | V        |  |
| Maquat 25:12   | Glutaraldehyde<br>and Quaternary   | Synergistic blend of glutaraldehyde and quaternary ammonium chlorides (QAC's) in a water/ethanol solution. This product is specifically designed and optimized for control of sulfate-reducing bacteria (SRB) that contribute to souring, production of sulfide, and abiotic corrosion in oil field, cooling water systems, gas production, and transmission pipelines, and systems. The combination has been shown to be more effective in controlling sulfate-reducing bacteria than the individual components alone allows for an overall reduction in biocide use, reducing environmental impact while achieving increased production throughput with overall biocide use cost reduction.  | V                        | V          | V                                    | V        |  |
| PeraClean™ 5   | Peracetic Acid<br>/Hydrogen  | A 5% peracetic acid/26.5% hydrogen peroxide solution used as a biocide to control microbial induced corrosion in down hole and surface equipment. This product may also be utilized in SWD for iron and bacteria control.  | V                        | V          |                                      |          |  |
| PeraClean™ 15  | Peroxide<br>Solution   | A 15% peracetic acid/22% hydrogen peroxide solution used as a biocide to control microbial induced corrosion in down hole and surface equipment. This product may also be utilized in SWD for iron and bacteria control.   | V                        | V          |                                      |          |  |
| CLAY CONTROL   |  |  |                          |            |                                      |          |  |
| CLAY CONTROL   |  |  |                          |            |                                      |          |  |
| CLAY CONTROL  ClayBrake™ 320   | Proprietary  | Proprietary blended clay stabilizer designed to prevent swelling and migration of clay platelets and silica fines that may impede production.  |                          | V          |                                      | V        |  |
|  |  | prevent swelling and migration of clay platelets and   |                          | V          |                                      | V        |  |
| ClayBrake™ 320   |  | prevent swelling and migration of clay platelets and   | e for high               | velocity,  | high CO <sub>2</sub> ,               |          |  |
| ClayBrake™ 320  CORROSION INHIBITO  CorHib™ 5000   | Oil-Soluble<br>Corrosion   | prevent swelling and migration of clay platelets and silica fines that may impede production.  Series of oil soluble to oil soluble/highly water disper with high to low water cuts. Formulations are availabl sour, and oxygen contaminated applications. Products  | e for high               | velocity,  | high CO <sub>2</sub> ,               |          |  |
| ClayBrake™ 320  CORROSION INHIBITO  CorHib™ 5000  Series   | Oil-Soluble<br>Corrosion<br>Inhibitors                                   | prevent swelling and migration of clay platelets and silica fines that may impede production.  Series of oil soluble to oil soluble/highly water disperwith high to low water cuts. Formulations are availabl sour, and oxygen contaminated applications. Product applications.  Oil-soluble, slightly water/brine dispersable filming amine corrosion inhibitor with an excellent film persistency. This product is for sour service and batch  | e for high<br>s are avai | velocity,  | high CO <sub>2</sub> ,<br>ruck treat |          |  |
| ClayBrake™ 320  CORROSION INHIBITO  CorHib™ 5000  Series  CorHib™ 5001                             | Oil-Soluble Corrosion Inhibitors  Dimer/ Imidazoline  Dimer/ Imidazoline | prevent swelling and migration of clay platelets and silica fines that may impede production.  Series of oil soluble to oil soluble/highly water disper with high to low water cuts. Formulations are availabl sour, and oxygen contaminated applications. Products applications.  Oil-soluble, slightly water/brine dispersable filming amine corrosion inhibitor with an excellent film persistency. This product is for sour service and batch treating.  Oil-soluble, water dispersible filmer for use in highly-fouled systems. This product is an excellent biofilm penetration and promotes a surface that resists adhesion of biofilm, iron sulfide, scale. It is also oxygen tolerant and prevents under deposit corrosion.  Oil-soluble/brine dispersible corrosion inhibitor      | e for high               | velocity,  | high CO <sub>2</sub> ,<br>ruck treat |          |  |
| ClayBrake™ 320  CORROSION INHIBITO  CorHib™ 5000  Series  CorHib™ 5001  CorHib™ 5002               | Oil-Soluble Corrosion Inhibitors  Dimer/ Imidazoline                     | Series of oil soluble to oil soluble/highly water disper with high to low water cuts. Formulations are availabl sour, and oxygen contaminated applications. Products applications.  Oil-soluble, slightly water/brine dispersable filming amine corrosion inhibitor with an excellent film persistency. This product is for sour service and batch treating.  Oil-soluble, water dispersible filmer for use in highly-fouled systems. This product is an excellent biofilm penetration and promotes a surface that resists adhesion of biofilm, iron sulfide, scale. It is also oxygen tolerant and prevents under deposit corrosion.  | e for high               | velocity,  | high CO <sub>2</sub> ,<br>ruck treat |          |  |
| ClayBrake™ 320  CORROSION INHIBITO  CorHib™ 5000  Series  CorHib™ 5001  CorHib™ 5002  CorHib™ 5003 | Oil-Soluble Corrosion Inhibitors  Dimer/ Imidazoline  Dimer/ Imidazoline | Series of oil soluble to oil soluble/highly water disperwith high to low water cuts. Formulations are available sour, and oxygen contaminated applications. Products applications.  Oil-soluble, slightly water/brine dispersable filming amine corrosion inhibitor with an excellent film persistency. This product is for sour service and batch treating.  Oil-soluble, water dispersible filmer for use in highly-fouled systems. This product is an excellent biofilm penetration and promotes a surface that resists adhesion of biofilm, iron sulfide, scale. It is also oxygen tolerant and prevents under deposit corrosion.  Oil-soluble/brine dispersible corrosion inhibitor that is suitable for truck treating and continuous applications. Suitable for sweet, sour, and high | e for high               | velocity,  | high CO <sub>2</sub> ,<br>ruck treat |          |  |

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|----------------------|--|---|------------------------|------------------------|------------|---------------------|
| CORROSION INHIBITO   | Water Soluble<br>Corrosion<br>Inhibitor                      | Water-soluble, oxygen tolerant corrosion inhibitor that is suitable for sweet and sour service and excellent for drying conditions, such as gaslift.  | V                      |                        | <b>v</b>   |                     |
| CorHib™ 5501         |  | Water-soluble corrosion inhibitor that is suitable for high-velocity applications, gas wells, pipeline, and water injection. This product is suitable for sweet ${\rm CO_2}$ corrosion.   | V                      |                        | V          |                     |
| CorHib™ 5502         |  | Oil dispersible corrosion inhibitor that is highly water dispersible designed for sour service. This product is oxygen tolerant.  | •                      |                        | V          |                     |
| CorHib™ 5504         | Quat Mixture   | Excellent film former corrosion inhibitor designed to penetrate biomass to promote a surface that resists fouling by bacteria, iron sulfide, scale. This product is water/brine soluble and dispersible in oil. Intended for high water cut systems and suitable for continuous or batch treatments. It is recommended for high fouling systems.  | ~                      |                        | V          |                     |
| CorHib™ 5506         |  | Oil and brine dispersible corrosion inhibitors that is suitable for sweet and sour and excellent for drying   | <b>V</b>               |                        | <b>V</b>   |                     |
| CorHib™ 5507         |  | conditions.   | <b>V</b>               |                        | <b>V</b>   |                     |
| CorHib™ 5508         |  | Filming amine corrosion inhibitor that is primarily used for downhole corrosion inhibition in either sweet or sour environments, continuous treatment, where mild to moderate corrosion is expected. This product provides very high water dispersability and outstanding solids control capabilities.  | V                      |                        | V          |                     |
| CorHib™ 5505         | lmidazoline  | Series of effective organic corrosion inhibitors that exhibits a high degree of interfacial activity to reduce plugging of surface filters. This product contains a solids control capability and may be used as an effective surfactant in oil well cleanups and in de-oiling solids. Product selection is determined through laboratory testing.  | V                      |                        | V          |                     |
| CorHib™ 5510         | milidazoline   |   |                        |                        | ~          |                     |
| CI-600               | Acid Corrosion   | Series of highly-effective broad spectrum acid corrosion inhibitors designed for use in well acidizing, acid fracturing, and industrial cleaning operations. For use in hydrochloric acid, hydrofluoric acid, HCI/HF mud acids, and organic acids. These inhibitors provide excellent corrosion protection of surface and downhole tubular goods and associated equipment and effective at temperatures up to 350° F. | ~                      | ~                      |            | V                   |
| CI-610               | Inhibitor  |   | V                      | V                      |            | V                   |
| COMBO CORROSION/S    | SCALE INHIBITORS   |   |                        |                        |            |                     |
| COMBO 7500<br>Series | Water-Soluble<br>Combination<br>Corrosion/Scale<br>inhibitor | Series of water-soluble combination corrosion/scale in<br>cut. Formulations are available for high velocity, high<br>applications. Products are available for continuous fee<br>determined through a series of emulsion tendency, dis-<br>testing.  | CO <sub>2</sub> , sour | r, and oxygations. Pro | en contar  | minated<br>ction is |
| COMBO 7501           |  | These combination water soluble corrosion/scale   | V                      |                        | V          |                     |
| COMBO 7502           | Quat/<br>Phosphonate   | inhibitor formulations are used primarily via continous application either down hole or in surface equipment  | <b>V</b>               |                        | <b>V</b>   |                     |
| COMBO 7504           |  | for the prevention of corrosion attack and scale deposition.  | V                      |                        | V          |                     |
| EMULSION BREAKERS    |  |   |                        |                        |            |                     |
| EB 3000 Series       | Emulsion<br>Breaker  | Series of demulsifiers designed to break oil in water e   | mulsions.              |                        |            |                     |
| EB 3001              |  | This series of demulsifiers are formulated to assist  | <b>V</b>               | <b>V</b>               | <b>V</b>   | ~                   |
| EB 3002              | Emulsion   | with basin specific problems. Product selection is determined through a series of bottle tests at various   | <b>V</b>               | <b>V</b>               | <b>V</b>   | V                   |
| EB 3003              | Breaker  | treating ratios to determine product with best  | <b>V</b>               | <b>V</b>               | V          | <b>V</b>            |
| EB 3004              |  | overall performance in water drop, water clarity, oil brightness and clean interface.   | <b>V</b>               | <b>V</b>               | <b>V</b>   | V                   |
| EB 3005              |  |   | <b>~</b>               | <b>V</b>               | <b>V</b>   |                     |

| EB 3006 EB 3007 EB 3008 EF 3010 EB 3010 EB 3010 EB 3010 EB 3010 EB 3012 EB 3009 EB 3009 EB 3009 EB 3137 EB 3138 Sligging/ Tank Bottom Compound EB 3137 EB 3138 Compound EB 3140 EB 3180 EB 318 | PRODUCT NAME      | REFERENCE                               | DESCRIPTION   | SWD      | COMPLETION | PRODUCTION | WORKOVER |
|--|-------------------|---|---|----------|------------|------------|----------|
| EB 3008 EB 3010 Em Jone    | EMULSION BREAKERS | CONTINUED                               |   |          |            |            |          |
| EB 3008 EB 3010 Finulsion  | EB 3006           |   |   | <b>V</b> | ~          | ~          | <b>~</b> |
| EB 3010 EB 3011 EB 3011 EB 3012 EB 3012 EB 3012 EB 3010  EB 3012 EB 3010  EB 3012 EB 3010  Series  Slugging/ Tank Bottom Compound | EB 3007           |   |   | <b>V</b> | V          | V          | <b>~</b> |
| EB 3010  EB 3012  EB 3010  EB 3010  EB 3010  EB 3010  EB 3010  EB 3009  Sugajina/ Tank Bottom Compound Series of highly active demulsifier/solids control compounds specifically designed to eliminate stable water in oil emulsions and solids induced emulsions in tank battery systems, fine tanks, etc.  EB 3137  EB 3138  Slugajina/ Iank Bottom Compound Iank Bottom Compound Compound Compound Compound Compound Anionic and Anioni | EB 3008           |   | with basin specific problems. Product selection is  | <b>V</b> | ~          | <b>~</b>   | <b>~</b> |
| EB 3012  EB 3009  EB 3100 Series  Slugging/ Tank Bottom Compound  Series of highly active demulsifier/solids control compounds specifically designed to eliminate stable water in oil emulsions and solids induced emulsions in tank battery systems, frac tanks, etc.  EB 3137  EB 3138  Slugging/ Insk Bottom Compound  Series of demulsifier/solids control compounds are formulated for basin-specific problems. Product sets at various treating ratios to determine product with near overall performance in valer drop, water of clarity, oil brightness, and clean interface.  FOAMERS  FOAMERS  FOAMERS  Anionic and Amphoteric Poamers  FoamLift** 2003  Anionic and Amphoteric Poamers  FoamLift** 2004  AOS Base  AOS Base  Series of AloS-based foamers specifically designed for deliquis/captified, if required.  Series of AOS-based foamers specifically designed for deliquis/captified, if required.  Series of AOS-based foamers specifically designed for deliquis/captified, if required.  Series of AOS-based foamers specifically designed for deliquis/captified, if required.  Series of AOS-based foamers specifically designed for deliquis/captified, if required.  Series of AOS-based foamers specifically designed for deliquis/captified, if required.  Series of AOS-based foamers specifically designed for deliquis/captified, if required.  Series of AOS-based foamers specifically designed for deliquis/captified, if required.  Series of AOS-based foamers specifically designed for deliquis/captified, if required.  Series of AOS-based foamers specifically designed for deliquis/captified, if required.  Series of AOS-based foamers specifically designed for vivi vivi vivide specified for spec | EB 3010           |   |   | <b>V</b> | V          | ~          | <b>~</b> |
| EB 3009 EB 3009 EB 3100 Series Slugging/ Tank Bottom Compound EB 3137 EB 3138 Sluggina/ Tank Bottom Compound EB 3139 Compound EB 3130  EB 3139 Compound Compound  EB 3130  Anionic and Amphoteric formined by the formined product with bost overall performance in water drop, water clark, oil brightness, and clean interface.  FoamLift** 2000  FoamLift*** 2001  FoamLift*** 2005  FoamLift*** 2007  FoamLift*** 2007  FoamLift*** 2007  FoamLift*** 2008  ACS / Amphotoric Biase  FoamLift*** 2009  ACS / Amphotoric Biase  EB 3130  EB 3130  AES Base  AES Base  AFS-biased defoarmer that is heavily winterized AOCS / amphotere base beamers specifically designed for high-term  FoamLift*** 2010  FoamLift**** 2011  EB 300  EFOamLift**** 2012  EFOamLift***** 2012  EFOAMERS  EFO | EB 3011           |   |   | <b>V</b> | ~          | ~          | <b>~</b> |
| EB 3100 Series  Slugging/ Tank Bottom Compound  EB 3137  EB 3138  Slugging/ Tank Bottom Compound  Series of highly active demulsifier/solids control compounds specifically designed to eliminate stable water in oil emulsions and solids induced emulsions in tank battery systems, fact tanks, etc.  Series of demulsifier/solids control compounds are formulated for basin-specific prologens. Product selection is determined through a series of bottle task of the series of bottle task of the series of bottle task of the series of an individual series and series of bottle task of the series of an individual series of bottle task of the series of an individual series of bottle task of the series of an individual series of bottle task of the series of an individual series of bottle task of the series of an individual series of bottle task of the series of an individual series of bottle task of the series of an individual series of the series of the series of an individual series of the series of the series of an individual series of the ser | EB 3012           |   |   | <b>V</b> | ~          | V          | <b>~</b> |
| EB 3137   Sugging/   Series of demulsifiers/solids control compounds are formulated for basin-specific problems. Product in the formulation in the    | EB 3009           |   |   | <b>V</b> |            | ~          | <b>~</b> |
| EB 3138   Slugging/   Formulated for basin-specific problems. Product   V   V   V   V   V   V   V   V   V  | EB 3100 Series    | Tank Bottom                             | eliminate stable water in oil emulsions and solids indu   |          |            |            |          |
| EB 3189 EB 3189 EB 3189 EB 3180 EB 318 | EB 3137           |   |   | <b>V</b> |            | ~          | ~        |
| EB 3139 Compound Compound tests at various treating ratios to determine product with best overall performance in water drop, water clarity, oil brightness, and clean interface.  POAMERS  Series of anionic and amphoteric foaming agents specifically designed for deliquidification in low-pressure gas wells that are condensate tolerant and thermally stable. Formulations are also available with scale and corrosion inhibitor added, as well as capillary certified, if required.  Series of AOS-based foamers specifically designed for deliquidification in low-pressure gas wells that are condensate tolerant and thermally stable. Formulations are also available with scale and corrosion inhibitor added, as well as a series of AOS-based foamers specifically designed for deliquidification in low-pressure gas wells that are condensate tolerant and thermally stable. Formulations are also available with scale and corrosion inhibitor added, as well as a capillary certified, if required.  Series of AOS-based foamers specifically designed for high-temperature stable to the products are inhibitored and specifically designed for high-temperature stable to the products are inhibitored by a specifically designed for high-temperature stablity > 200°F.  FoamLift** 2010  FoamLift** 2010  AMPhoteric Base  PoamLift** 2011  Amphoteric Base  PoamLift** 2012  Amphoteric Base  PoamLift** 2012  Amphoteric Base  PoamLift** 2012  Amphoteric Base  PoamLift** 2012  Amphoteric Base  PoamLift** 2013  Amphoteric Base  PoamLift** 2014  Amphoteric Base  PoamLift** 2015  Amphoteric Base  PoamLift** 2016  Amphoteric Base  PoamLift** 2017  Amphoteric Base  PoamLift** 2018  Amphoteric Base  PoamLift** 2019  Amphoteric Base  PoamLift** 2010  Amphoteric Base  PoamLift** 2011  Amphoteric Base  PoamLift** 2012  Amphoteric Base  PoamLift** 2012  Amphoteric Base  PoamLift*** 2012  Amphoteric B | EB 3138           |   |   | <b>V</b> |            | ~          | V        |
| FOAMLIST** 2000 Anionic and Amphoteric Foamuris** 2000 Series of anionic and Amphoteric Foamuris** 2000 Anionic and Amphoteric Foamuris** 2000 Series of Amphoteric Foamuris** 2000 FoamLift*** 2003 FoamLift*** 2006 AOS Base FoamLift*** 2007 FoamLift*** 2008 PoamLift*** 2008 PoamLift*** 2008 PoamLift*** 2008 PoamLift*** 2009 Amphoteric Base w/ Cl, Sl PoamLift*** 2009 Amphoteric Base w/ Cl, Sl PoamLift*** 2009 AFS Base PoamLift*** 2009 Amphoteric Base w/ Cl, Sl PoamLift*** 2010 Amphoteric Base w/ Cl, Sl PoamLift*** 2011 Amphoteric Base w/ Cl, Sl PoamLift*** 2011 Amphoteric Base w/ Cl, Sl PoamLift*** 2011 Amphoteric Base w/ Cl, Sl PoamLift*** 2012 Amphoteric Base w/ Cl, Sl PoamLift*** 2015 Amphoteric Base w/ Cl, Sl PoamLift*** 2016 Amphoteric Base w/ Cl, Sl PoamLift*** 2017 Amphoteric Base w/ Cl, Sl PoamLift*** 2018 Amphoteric Base w/ Cl, Sl PoamLift*** 2019 Amphoteric Base w/ Cl, Sl PoamLift*** 2010 Amphoteric Base w/ | EB 3139           |   | tests at various treating ratios to determine product   | V        |            | V          | <b>V</b> |
| Series of anionic and Amphoteric Foamers   Series of ADS-based foamers specifically designed   V   | EB 3140           |   |   | V        |            | V          | V        |
| FoamLift" 2003   Ambinoteric Foamers   FoamLift" 2004   AOS   AOS   Base   FoamLift" 2006   AOS   AOS   AOS   Amphoteric Base w/ Cl, Sl   FoamLift" 2007   FoamLift" 2008   AOS   AOS   Amphoteric Base w/ Cl, Sl   Series of AOS-base w/ Cl, Sl   Series of AOS-base w/ Cl, Sl   Series of AOS-base   FoamLift" 2009   AOS   AOS   Amphoteric Base w/ Cl, Sl   Series of AOS-base   AOS / Amphoteric Base w/ Cl, Sl   APPHOTE W/  | FOAMERS           |   |   |          |            |            |          |
| FoamLift™ 2006 FoamLift™ 2007 FoamLift™ 2004 AOS Base FoamLift™ 2004 FoamLift™ 2004 FoamLift™ 2008 FoamLift™ 2008 AOS / Amphoteric Base foamers specifically designed for high-temperature stability of 2000™.  FoamLift™ 2009 AOS / Amphoteric Base w/ Cl. SI FoamLift™ 2009 AOS / Amphoteric Base w/ Cl. SI FoamLift™ 2009 AOS / Amphoteric Base w/ Cl. SI FoamLift™ 2009 AOS / Amphoteric Base w/ Cl. SI FoamLift™ 2009 AES Base AES-based defoamer that includes a corrosion & scale inhibitor that specifically designed for high-temperature stability > 200°F.  FoamLift™ 2010 FoamLift™ 2010 FoamLift™ 2010 FoamLift™ 2011 FoamLift™ 2011 FoamLift™ 2012  Series of Amphoteric-based foamers that are designed for high-temperature stability of > 200°F. Product selection is determined by laboratory testing.  FoamLift™ 2012  Series of famphoteric-based, heavily winterized foamers that include both corrosion and scleening of the high-temperature stability of > 200°F. Product selection is determined by laboratory testing.  DeFoam 9007  DeFoam 9007  Alcohol/Demulsfier Combination Anti-foamer  DeF-2510  Oil Soluble  Water-soluble defoamer applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable. Also, this product is designed for high-temperature stability of > 200°F.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable. Also, this product is designed for high-temperature stability of > 200°F. Product selection is determined by laboratory where foaming is undesirable. Also, this product is designed for high-temperature stability of > 200°F. Product selection is determined by laboratory testing.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable. Also, this product is designed for high-temperature designed to knock down foam in treating vessels and other applications where foaming is undesirab |                   | Amphoteric                              | ification in low-pressure gas wells that are condensate<br>Formulations are also available with scale and corrosic  | tolerant | and thern  | nally stab | le.      |
| FoamLift™ 2007  FoamLift™ 2008  AOS / Amphoteric Base foamers specifically designed for high-temperature stability > 200°F.  FoamLift™ 2009  AOS / Amphoteric Base foamer specifically designed for high-temperature stability > 200°F.  FoamLift™ 2009  AOS / Amphoteric Base w/ Cl, Sl for high-temperature stability > 200°F.  FoamLift™ 2010  FoamLift™ 2010  AES Base AES-based defoamer that is heavily winterized and specifically designed for high-temperature stability > 200°F.  FoamLift™ 2010  FoamLift™ 2011  FoamLift™ 2011  Amphoteric Base w/ Cl, Sl Series of Amphoteric-based foamers that are designed for high-temperature stability of > 200°F.  Product selection is determined by laboratory testing.  Series of Amphoteric base w/ Cl, Sl Series of Amphoteric-based, heavily winterized foamers that include both corrosion and scale inhibitors designed for high-temperature stability of > 200°F.  Product selection is determined by laboratory testing.  DEFOAMERS  Defoamer Series Defoamers  Defoamers Series Defoamers  Series of defoamers applicable in both oil and water foams which can be applied during stimulation, down hole and surface applications.  Water-soluble formulation designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable. Also, this product is designed for high volume flowback operations where produced  | FoamLift™ 2003    |   | Series of AOS-based foamers specifically designed   |          | ~          | ~          | ~        |
| FoamLift™ 2007 FoamLift™ 2004 AOS / Amphoteric Base Defoamers specifically designed for high-term-perature stability > 200°F.  FoamLift™ 2009 AOS / Amphoteric Base Defoamers specifically designed for high-term-perature stability > 200°F.  FoamLift™ 2009 AOS / Amphoteric Base w/ Cl, Sl AOS / Amphoteric Base w/ Cl, Sl AOS / Amphoteric Base w/ Cl, Sl AES-based defoamer that includes a corrosion & scale inhibitor that specifically designed for high-temperature stability > 200°F.  FoamLift™ 2010 FoamLift™ 2010 FoamLift™ 2011 FoamLift™ 2011 FoamLift™ 2011 FoamLift™ 2011 FoamLift™ 2012  Series of Amphoteric-based foamers that are designed for high-temperature stability of > 200°F. Product selection is determined by laboratory testing.  Series of Amphoteric-based foamers that are designed for high-temperature stability of > 200°F. Product selection is determined by laboratory testing.  Defoamer Series  Defoamers  Defoamers  Defoamers  Defoamers  Alcohol/Demulsifier Combination Anti-foamer  DF-2510  Oil Soluble  Water-soluble formulation designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer   | FoamLift™ 2006    | AOS Base                                | are condensate tolerant and thermally stable. These   |          | V          | ~          | V        |
| Base foamers specifically designed for high-temperature 2008   Base   Defoamer   Defo    | FoamLift™ 2007    |   |   |          | V          | ~          | V        |
| FoamLift™ 2009  Base   perature stability > 200°F.   | FoamLift™ 2004    | *                                       |   |          | V          | ~          | ~        |
| FoamLift™ 2009  Amphoteric Base w/ Cl, Sl  FoamLift™ 2005  AES Base  AES-based defoamer that is heavily winterized and specifically designed for high-temperature stability < 200°F.  FoamLift™ 2010  FoamLift™ 2013  FoamLift™ 2011  FoamLift™ 2011  Amphoteric Base w/ Cl, Sl  Amphoteric Base w  | FoamLift™ 2008    | · ·                                     |   |          | V          | V          | V        |
| FoamLift™ 2010  FoamLift™ 2010  Amphoteric Base  Series of Amphoteric-based foamers that are designed for ligh-temperature stability of > 200°F. Product selection is determined by laboratory testing.  FoamLift™ 2011  FoamLift™ 2012  Amphoteric Base w/ Cl, Sl  Amphoteric Base w/ Cl, Sl  Defoamer Series  Defoamers  Defoamers  Defoamers  Defoamers  Defoamers  Alcohol/ Demulsifier Combination Anti-foamer  Dispersible  Water-Soluble/ Highly Oil  Dispersible  Water-Soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable. Also, this product is designed for high-tent perature stability of > 200°F. Product selection is determined by laboratory testing.  Water-Soluble defoamers applicable in both oil and water foams which can be applied during stimulation, down hole and surface applications.  Water-soluble formulation designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable. Also, this product is designed for high volume flowback operations where produced  | FoamLift™ 2009    | Amphoteric                              | corrosion & scale inhibitor that specifically designed  |          | V          | V          | V        |
| ## Amphoteric Base   Community   | FoamLift™ 2005    | AES Base                                | specifically designed for low-temperature stability <   |          | V          | ~          | V        |
| FoamLift™ 2013  FoamLift™ 2011  Amphoteric Base w/ Cl, Sl  Amphoteric Base w/ Cl, Sl  Product selection is determined by laboratory testing.  Amphoteric Base w/ Cl, Sl  Amphoteric Base w/ Cl, Sl  Product selection is determined by laboratory with the can be applied during stimulation, down hole and surface applications.  PeroamErs  Defoamers  Oil-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Defoaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable. Also, this product is designed for high volume flowback operations where produced  | FoamLift™ 2010    | Amphoteric                              |   |          | ~          | ~          | V        |
| FoamLift™ 2012  Amphoteric Base w/ CI, SI  FoamLift™ 2012    | FoamLift™ 2013    | 100000000000000000000000000000000000000 |   |          | ~          | <b>V</b>   | ~        |
| FoamLift™ 2012    Amphoteric Base w/ Cl, Sl   Sl   Sl   Sl   Sl   Sl   Sl   Sl   | FoamLift™ 2011    |   |   |          | V          | V          | V        |
| Defoamer Series  Defoamers  Series of defoamers applicable in both oil and water foams which can be applied during stimulation, down hole and surface applications.  Alcohol/ Demulsifier Combination Anti-foamer  DF-2510  Oil Soluble  Oil Soluble  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable. Also, this product is designed for high volume flowback operations where produced  | FoamLift™ 2012    |   | inhibitors designed for high-temperature stability of > 200°F. Product selection is determined by laboratory  |          | V          | V          | V        |
| DeFoam 9007   Alcohol/   Demulsifier   Combination   Anti-foamer   Mater-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.   Oil-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.   Oil-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.   Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foam in treating vessels and other applications where foaming is undesirable.   Also, this product is designed for high volume flowback operations where produced   V V V V V V V V V V V V V V V V V V   | DEFOAMERS         |   |   |          |            |            |          |
| Demulsifier Combination Anti-foamer  Demulsifier Combination Anti-foamer  Dispersible  Demulsifier Combination Gesigned to knock down foam in treating vessels and other applications where foaming is undesirable.  Oil-soluble defoamer designed to knock down foam in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down foam in treating vessels and other applications where foam in treating vessels and other applicati | Defoamer Series   | Defoamers                               |   | oams whi | ich can be | applied o  | during   |
| DF-2510 Oil Soluble in treating vessels and other applications where foaming is undesirable.  Water-soluble defoamer designed to knock down  Water Soluble/ foam in treating vessels and other applications where Highly Oil foaming is undesirable. Also, this product is designed for high volume flowback operations where produced   | DeFoam 9007       | Demulsifier<br>Combination              | foam in treating vessels and other applications where   |          | V          | V          | V        |
| Water Soluble/ foam in treating vessels and other applications where  DF-2590 Highly Oil foaming is undesirable. Also, this product is designed Dispersible for high volume flowback operations where produced   | DF-2510           | Oil Soluble                             | in treating vessels and other applications where  |          | V          | V          | V        |
|  | DF-2590           | Highly Oil                              | foam in treating vessels and other applications where<br>foaming is undesirable. Also, this product is designed<br>for high volume flowback operations where produced |          | ~          | V          | V        |

| PRODUCT NAME  PARAFFIN INHIBITOR     | REFERENCE   | DESCRIPTION  | SWD       | COMPLETION | PRODUCTION | WORKOVER |
|--------------------------------------|---|--|-----------|------------|------------|----------|
| ParaHib™ 8000<br>Series              | Paraffin<br>inhibitor/<br>Asphaltene/<br>Dispersants    | Series of paraffin inhibitor/dispersant formulations to  | prevent v | vax depos  | ition.     |          |
| ParaHib™ 8001                        | Paraffin<br>Dispersant                                  | Paraffin dispersant designed to be injected continuously at various rates to control paraffin precipitation and improve the flow ability of the crude. For use as continuously injected into flow lines at the wellhead, oil-gathering systems, and pipelines and down hole in producing wells.            |           |            | V          | V        |
| ParaHib™ 8002                        |   | Series of paraffin inhibitors designed to prevent  |           |            | V          | V        |
| ParaHib™ 8003                        |   | the growth of paraffin crystals into heavy insoluble deposits. These inhibitors are used improve the   |           |            | V          | V        |
| ParaHib™ 8007                        |   | handling of heavy fuels by lowering the pour point and improving the cold flow properties.   |           |            | <b>V</b>   | <b>V</b> |
| ParaHib™ 8019<br>Capstring certified |   | Paraffin remains dispersed in the oil and is prevented from accumulating as a heavy sludge in producing  |           |            | ~          | <b>v</b> |
| ParaHib™ 8020<br>Capstring certified | Paraffin Inhibitor                                      | wells, treating vessels, or storage tanks. These products also incorporate a paraffin dispersant to assist in removing any deposited wax crystals  |           |            | ~          | ~        |
| ParaHib™ 8021<br>Capstring certified |   | throughout the system.   |           |            | <b>V</b>   | <b>~</b> |
| ParaHib™ 8024                        |   | Product selection is performed through a series of laboratory studies including pour point and cold finger testing. Products are formulated in diesel for use in gas lift and capillary applications.  |           |            | V          | V        |
| ParaHib™ 8006                        | Paraffin<br>Dispersant/<br>Hot Oil<br>Compound          | Paraffin dispersant compound designed for use during hot oil treatments to assist with keeping wax dispersed into the oil phase and to prevent wax build-up in flow lines and tank bottoms.  |           |            | V          | ~        |
| ParaHib™ 8009                        |   | Series of paraffin inhibitors designed to prevent the growth of paraffin crystals into heavy insoluble deposits. These inhibitors are used improve the handling of heavy fuels by lowering the pour point and improving the cold flow properties.  Paraffin remains dispersed in the oil and is prevented. |           |            | V          | V        |
| ParaHib™ 8010                        |   |  |           |            | V          | V        |
| ParaHib™ 8011                        |   |  |           |            | <b>V</b>   | <b>V</b> |
| ParaHib™ 8012                        | Paraffin  |  |           |            | <b>V</b>   | <b>V</b> |
| ParaHib™ 8014                        | Inhibitor/<br>Dispersant                                |  |           |            | <b>V</b>   | V        |
| ParaHib™ 8015                        |   |  |           |            | <b>V</b>   | V        |
| ParaHib™ 8016                        |   |  |           |            | <b>V</b>   | <b>V</b> |
| ParaHib™ 8017                        |   | Product selection is performed through a series of   |           |            | <b>V</b>   | <b>V</b> |
| ParaHib™ 8023<br>Capstring certified | Paraffin<br>Inhibitor/<br>Asphaltene<br>Dispersant      | laboratory studies including pour point and cold finger testing. Products are formulated in diesel for use in gas lift and capillary applications.   |           |            | V          | ~        |
| ParaHib™ 8018<br>Capstring certified |   | Series of paraffin inhibitors designed to prevent<br>the growth of paraffin crystals into heavy insoluble<br>deposits. These inhibitors are used improve the<br>handling of heavy fuels by lowering the pour point<br>and improving the cold flow properties.  |           |            | V          | V        |
| ParaHib™ 8022                        | Combo Paraffin<br>Inhibitor/<br>Dispersant in<br>Diesel | Paraffin remains dispersed in the oil and is prevented from accumulating as a heavy sludge in producing wells, treating vessels, or storage tanks. These products also incorporate a paraffin dispersant to assist in removing any deposited wax crystals throughout the system.                           |           |            | V          | ~        |
| ParaHib™ 8025                        |   | Product selection is performed through a series of laboratory studies including pour point and cold finger testing. Products are formulated in diesel for use in gaslift and capillary applications.   |           |            | V          | ~        |
| ParaHib™ 8100                        | Paraffin Inhibitor<br>Activator                         | Paraffin inhibitor activator specifically designed for squeeze applications.   |           |            | V          | ~        |

| PRODUCT NAME                          | REFERENCE   | DESCRIPTION  | SWD        | COMPLETION | PRODUCTION | WORKOVER |
|---------------------------------------|---|--|------------|------------|------------|----------|
| PARAFFIN INHIBITOR                    | S CONTINUED   |  |            |            |            |          |
| ParaProp™ 1500                        | Solid Paraffin<br>Inhibitor   | Series of solid paraffin inhibitors designed to be added with proppant. Product selection is based on  |            | ~          |            | V        |
| ParaProp™ 1550                        | Solid Paraffin<br>Inhibitor   | laboratory testing.  |            | ~          |            | V        |
| ParaBlok™                             | Paraffin<br>Inhibitor/<br>Diverting Agent                                   | Diverting agent in the form of solid beads used in well workover operations. These beads are soluble in hydrocarbons and once dissolved acts an excellent paraffin inhibitor.                          |            | V          |            | V        |
| WaxSolve™ 8500<br>Series              | Paraffin/<br>Asphaltene<br>Solvents   | Series of paraffin and asphaltene solvents designed for the removal of deposited wax and asphaltene.   | or continu | ous or bat | ch applic  | ations   |
| WaxSolve™ 8500                        |   | Series of paraffin solvents that are specifically used   |            |            | V          | ~        |
| WaxSolve™ 8501                        | Paraffin Solvent/<br>Emulsion   | in paraffin cleanouts, but also contains an emulsion<br>breaker and paraffin dispersant to prevent paraffin  |            |            | V          | V        |
| WaxSolve™ 8502                        | Breaker   | stablized emulsions in surface equipment.  |            |            | V          | V        |
| WaxSolve™ 8503                        |   | Paraffin solvent compounds designed to break down  |            |            | V          | V        |
| WaxSolve™ 8504                        | Paraffin Solvent  | deposited wax in flow lines, surface equipment,  |            |            | V          | V        |
| WaxSolve™ 8510<br>Capstring certified | raranın solvent   | and tank bottoms. Product selection is performed through a series of paraffin solvency bottle testing at various treating ratios.  |            |            | V          | V        |
| WaxSolve™ 8505                        | Solvent/<br>Dispersant<br>Combination                                       | Solvent / dispersant combination solution that is used to dissolve paraffin deposits and disperse paraffin.  |            |            | V          | ~        |
| WaxSolve™ 8506                        | Green Paraffin<br>Solvent/<br>Dispersant<br>Combination                     | "Green" paraffin solvent dispersant combination used for removing wax deposits and to prevent wax deposition.  |            |            | V          | V        |
| WaxSolve™ 8507                        | Paraffin<br>Inhibitor/Solvent   | Wax crystal modifier in solvent solution designed to break down wax crystals and inhibit re-distribution after heating above cloud point.  |            |            | V          | V        |
| WaxSolve™ 8508                        | Dispersant/<br>Solvent  | Oil soluble paraffin dispersant/solvent solution that is used in batch application and hot oiling.   |            |            | V          | ~        |
| WaxSolve™ 8509                        | Hot Water<br>Dispersant   | Water-soluble paraffin dispersant solution used during hot oil treatments to assist with keeping wax dispersed into the oil phase and to prevent wax build-up in flow lines and tank bottoms.          |            |            | V          | V        |
| WaxSolve™ 8511                        | Solvent/<br>Emulsion<br>Breaker   | Combination paraffin solvent / emulsion breaker solution used as a slugging / slop oil compound to clean up solids induced emulsion in tank bottoms and frac tanks.                                    |            |            | V          | V        |
| SCALE INHIBITORS                      |   |  |            |            |            |          |
| ScaleCease™ 7000<br>Series            | Scale Inhibitors  | Series of neutralized and non-neutralized scale inhibit<br>during well stimulation, squeeze or continuous applica<br>in water systems such as SWD and water flood injection                            | ation. Pro |            |            |          |
| ScaleCease™<br>7002                   | Combo Polymer<br>& Amino<br>Phosphonate<br>- Neutralized;<br>non-winterized | Polymer and amino phosphonate combination scale inhibitor that is specifically for squeeze applications in carbonate reservoirs.   | V          | V          | V          | V        |
| ScaleCease™<br>7003                   | Hydroxy Amine<br>Phosphonate<br>- Neutralized;<br>Winterized                | Partially neutralized phosphonate with excellent iron tolerant properties for use in high iron waters.   | ~          | V          | V          | V        |
| ScaleCease™<br>7006                   | Tagged<br>Polymeric;<br>Partially<br>Neutralized;<br>Non-Winterized         | Polymeric scale inhibitors that were primarily designed for use in squeeze applications and integrated stimulation operations to control scale. Product selection is determined in laboratory testing. | V          | V          | V          | V        |

| PRODUCT NAME                               | REFERENCE   | DESCRIPTION   | SWD      | COMPLETION | PRODUCTION | WORKOVER |
|--|---|---|----------|------------|------------|----------|
| SCALE INHIBITORS Co<br>ScaleCease™<br>7007 | Polymeric Scale Inhibitor; Neutralized; Non-Winterized                      | Polymeric scale inhibitors that were primarily designed for use in squeeze applications and integrated stimulation operations to control scale. Product selection is determined in laboratory testing.                            | V        | V          | V          | V        |
| ScaleCease™<br>7008                        | BHMT Chelant<br>Solution.<br>Non-Neutralized;<br>Non-winterized             | Metal chelant scale inhibitor specifically used in high-brine with iron waters.   | V        | V          | V          | V        |
| ScaleCease™<br>7010T                       | Tagged<br>Co-Polymer.<br>Neutralized;<br>Winterized                         | Copolymer, tagged scale inhibitor that is used for detection using a field test kit. This product is specifically designed for squeeze application and integrated stimulation treatments.   | V        | V          | V          | V        |
| ScaleCease™<br>7012                        | High Calcium<br>Tolerant<br>Phosphonate.<br>Neutralized;<br>Non-Winterized  | Non-winterized scale inhibitor that is primarily intended for calcium carbonate inhibition.   | V        | V          | V          | V        |
| ScaleCease™<br>7013                        | Ether Amine<br>Phosphonate.<br>Non-Neutralized;<br>Non-Winterized           | Series of highly-effective, non-winterized & winterized   | V        | V          | V          | V        |
| ScaleCease™<br>7013W                       | Ether Amine<br>Phosphonate.<br>Partially-<br>Neutralized;<br>Winterized     | scale inhibitors designed for treating carbonate and sulfate scales, especially effective against iron scales. This product is thermally stable upto 300°F.   | V        | V          | V          | V        |
| ScaleCease™<br>7001                        | BHMT<br>Phosphonate<br>- Concentrate.<br>Neutralized;<br>Non-Winterized     |   | V        | V          | V          | V        |
| ScaleCease™<br>7011                        | BHMT<br>Phosphonate<br>- Neutralized;<br>Non-Winterized                     |   | V        | V          | V          | V        |
| ScaleCease™<br>7014                        | BHMT<br>Phosphonate<br>- Neutralized<br>- Concentrate;<br>Non-Winterized    | Series of non-winterized broad range amino phosphonate scale inhibitor designed for treating carbonate and sulfate scales in batch and continouous applications. Product selection of the BHMT phosphonates is determined through | V        | V          | V          | V        |
| ScaleCease™<br>7015                        | BHMT<br>Phosphonate<br>- Concentrate;<br>Non-Neutralized;<br>Non-Winterized | laboratory testing.   | V        | V          | V          | V        |
| ScaleCease™<br>7016                        | BHMT<br>Phosphonate<br>- Neutralized;<br>Non-Winterized                     |   | V        | V          | V          | V        |
| ScaleCease™<br>7004                        | Dota  | Combination of two amino phosphonates used in squeeze, batch, and continous applications to control   | V        | ~          | V          | V        |
| ScaleCease™<br>7005                        | Deta<br>Phosphonate-<br>Partially-  | sulfate scales including barium, stronium and sulfate in extreme temperature & pH conditions.   | V        | V          | V          | V        |
| ScaleCease™<br>7009                        | Neutralized;<br>Non-Winterized  | Non-winterized scale inhibitor designed to control sulfate scales including barium, stronium, and sulfate in extreme temperature & pH conditions.   | <b>~</b> | ~          | V          | <b>v</b> |
| ScaleCease™<br>7017W                       | Deta<br>Phosphonate.<br>Non-Neutralized;<br>Winterized                      | Winterized scale inhibitor designed to control sulfate scales including barium, stronium, and sulfate in extreme temperature & pH conditions.   | ~        | <b>v</b>   | V          | V        |

| PRODUCT NAME   | REFERENCE  | DESCRIPTION  | SWD                     | COMPLETION               | PRODUCTION     | WORKOVER  |
|--|--|--|-------------------------|--------------------------|----------------|---|
| SCALE INHIBITORS CO  | ONTINUED   |  |                         |                          |                |   |
| ScaleCease™<br>7021  | Deta<br>Phosphonate-<br>Partially-<br>Neutralized;<br>Non-Winterized             | Non-winterized scale inhibitor designed to control calcium carbonate, calcium sulfate, and barium sulfate. This product is soluble in fresh water and high TDS brine.  | V                       | V                        | V              | V   |
| SCAVENGERS, CONTR  | ROL, INHIBITORS  |  |                         |                          |                |   |
| SulfaScav <sup>™</sup> 6000<br>Series                          | H <sub>2</sub> S Scavenger/<br>Oxygen<br>Scavengers                              | Series of oil and water soluble triazine formulations spor continuous applications to scavenge H <sub>2</sub> S from liqui   | pecifically<br>d and ga | y designed<br>s streams. | l for use ir   | tower   |
| SulfaScav™ 6000  | Triazine Mixture   | Triazine based H <sub>2</sub> S scavanger that is suitable for contact tower and continuous treatment applications.  | V                       |                          | V              |   |
| SulfaScav™ 6001  |  | A 48% active triazine-based $\rm H_2S$ Scavenger that includes a solids control compound.  | ~                       |                          | V              |   |
| SulfaScav™ 6010  | H <sub>2</sub> S Scavenger/<br>Solids Control                                    | A 42% active triazine-based H <sub>2</sub> S scavenger that  | <b>~</b>                |                          | <b>~</b>       |   |
| SulfaScav™ 6011  | Solids Control   | includes a solids control compound. To determine the most effective production, selection should be  | ~                       |                          | ~              |   |
| SulfaScav™ 6012  |  | determined by dynamic tube block testing.  | ~                       |                          | ~              |   |
| SulfaScav™ 6002  |  | A 42% active triazine-based H <sub>2</sub> S scavenger.  | ~                       |                          | V              |   |
| SulfaScav™ 6013  | H <sub>2</sub> S Scavenger   | Oil-soluble gas sweetener.   | V                       |                          | V              |   |
| OxyScav™ 6500  | Oxygen   | Series of metal-catalyzed oxygen scavengers specif-  |                         |                          |                | V   |
| OxyScav™ 6501  | Scavenger  | ically designed for lower-temperature conditions to remove oxygen.   |                         |                          |                | ~   |
| WATER CLARIFICATION  | ON   |  |                         |                          |                |   |
| StimClear™ 4000<br>Series                                      | Cationic, Anionic<br>and Nonionic<br>Polymeric<br>Water Clarifier/<br>Coagulants | Series of water clarification formulations used to coagulate oil and solids in water separation equipment. These formulations consist of cationic, aionic, and non-ionic low, med, and high molecular weight coagulants, flocculant, and clarifiers. Product selection is based on field bottle testing.   | V                       |                          | V              |   |
| WETTERS AND CLEAR  | NERS   |  |                         |                          |                |   |
| StimSurf™ 9000<br>Series                                       | Surfactants/<br>Iron Control   | Series of water wetting agents, acid surfactants, and i specifically designed for stimulation or production ph used in SWD and water flood injection applications.   |                         |                          |                |   |
| StimSurf™ 9002   | Iron Sulfide<br>Scavenger  | THPS & surfactant-based formulation designed to control iron sulfide both down hole and in surface equipment.  | V                       | V                        | V              | V   |
| StimSurf™ 9005   | Acid Surfactant  | Acid surfactant formulation used to de-oil solids, formation face, and to dissolve acid soluble scales.  | ~                       | ~                        | •              | <b>v</b>  |
| StimSurf™ 9006   | Blended Acid<br>Surfactant   | Blended glacial acetic thyioglycolic acid / surfactant formulation that is used to de-oil solids, formation face, and to dissolve acid soluble scales.   | V                       | V                        | V              |   |
|  |  |  |                         |                          |                | ~   |
| StimSurf™ 9010   | Blended Acid<br>Surfactant   | Blended glacial acetic and thyioglycolic acid solution specifically designed to dissolve acid soluble materials.   | <b>~</b>                | V                        | V              | V   |
| StimSurf™ 9010<br>StimSurf™ 9004                               |  | specifically designed to dissolve acid soluble   | v                       | V                        | v              | v<br>v  |
|  | Surfactant   | specifically designed to dissolve acid soluble materials.  Water-wetting compound used to de-oil solids, formation face clean-up or stimulation purposes. Also, this product can be used as an micelle-additive in acidizing applications.   | <i>v v</i>              |                          | v              | \( \times \)                                      |
| StimSurf™ 9004   |  | specifically designed to dissolve acid soluble materials.  Water-wetting compound used to de-oil solids, formation face clean-up or stimulation purposes. Also, this product can be used as an micelle-additive in acidizing applications.  Series of water-wetting compounds specifically designed to de-oil solids and formation face for  |                         | V                        | V              | <ul><li>V</li><li>V</li><li>V</li><li>V</li></ul> |
| StimSurf™ 9004<br>StimSurf™ 9007                               | Surfactant  Water Wetting  | specifically designed to dissolve acid soluble materials.  Water-wetting compound used to de-oil solids, formation face clean-up or stimulation purposes. Also, this product can be used as an micelle-additive in acidizing applications.  Series of water-wetting compounds specifically   |                         | V                        | <i>V V V V</i> | v v v v v v                                       |
| StimSurf™ 9004 StimSurf™ 9007 StimSurf™ 9011                   | Surfactant  Water Wetting  | specifically designed to dissolve acid soluble materials.  Water-wetting compound used to de-oil solids, formation face clean-up or stimulation purposes. Also, this product can be used as an micelle-additive in acidizing applications.  Series of water-wetting compounds specifically designed to de-oil solids and formation face for  | V                       | V                        | V              | v v v v v v                                       |
| StimSurf™ 9004  StimSurf™ 9007  StimSurf™ 9011  StimSurf™ 9015 | Surfactant  Water Wetting  | specifically designed to dissolve acid soluble materials.  Water-wetting compound used to de-oil solids, formation face clean-up or stimulation purposes. Also, this product can be used as an micelle-additive in acidizing applications.  Series of water-wetting compounds specifically designed to de-oil solids and formation face for clean-up or stimulation purposes.  Concentrated water-wetting solution specifically designed to de-oil solids and formation face for | <i>V V V</i>            | v v v v v                | V              |   |

## PRODUCTION CHEMICAL PRODUCT PORTFOLIO

| PRODUCT NAME        | REFERENCE   | DESCRIPTION   | SWD | COMPLETION | PRODUCTION | WORKOVER |
|---------------------|---|---|-----|------------|------------|----------|
| WETTERS AND CLEAR   | NERS CONTINUED  |   |     |            |            |          |
| StimSurf™ 9014      | Micelle Cleaning<br>Agent   | Micelle cleaning solution specifically used to de-oil solids and formation face for clean-up or stimulation purposes. It can be used in acidizing applications.   | V   | ~          | V          | V        |
| StimSurf™ 9016      | Acid Blend  | Blend of 35% HCL and glacial acetic acid specifically designed to dissolve acid soluble materials.  | ~   | •          | ~          | V        |
| StimSurf™ 9017      | Scale Dissolver   | Inorganic acid solution specifically designed to remove carbonate, sulfide, and oxide scale accumulations in producing, injection, and disposal wells. This product will not harm chrome or stainless steels. It is proven to increase oil production, lowers injection pressures. Non-emulsifying. | V   | V          | V          | V        |
| StimSurf™ 9018      | Solids Control /<br>Iron Dissolver  | Blend of THPS, nonionic surfactant, dispersant, and demulsifier additives designed for use down hole and surface equipment clean-up of iron sulfide and associated emulsions.   | V   | V          | V          | V        |
| SPECIALTY           |   |   |     |            |            |          |
| PackerHib™ 9003     | Aqueous-<br>Blended Packer<br>Fluid with CI &<br>O <sub>2</sub> Scavenger             | Ready-to-use packer fluid that contains corrosion inhibitor and oxygen Scavenger. Also can be used as a standalone corrosion inhibitor for high ${\rm CO_2}$ and ${\rm H_2S}$ environments.   |     | V          |            | V        |
| PackerHib™<br>9003W | Winterized<br>Aqueous-Blend<br>Packer Fluid<br>with CI & O <sub>2</sub><br>scavenger. | Winterized ready-to-use packer fluid that contains a corrosion inhibitor and oxygen Scavenger. Also can be used as a standalone corrosion inhibitor for high ${\rm CO_2}$ and ${\rm H_2S}$ environments.  |     | V          |            | V        |
| PackerHib™ 9012     | Aqueous Blend<br>Packer Fluid<br>with CI, Triazine<br>& O <sub>2</sub> Scavenger.     | Ready-to-use packer fluid that contains corrosion inhibitor, $\rm H_2S$ scavenger & oxygen scavenger. This product is also used as a stand alone CI for high $\rm CO_2$ and $\rm H_2S$ environments.  |     | V          |            | <b>v</b> |
| PumpFlush™ 9008     | Environ-<br>mentally Safe<br>Cleaner / Diesel<br>Replacement                          | Environmentally safe non-BTEX cleaner designed as a replacement for diesel and used to flush hoses and lines. This product is dyed blue for easy visibility — high flash with excellent detergency. Will not harm pumps and seals.  | V   | V          | V          | V        |

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