1. Record Nr. UNINA9911006623303321

Autore	Arnold Ken <1942->
Titolo	Design of oil handling systems and facilities / / Ken Arnold, Maurice Stewart
Pubbl/distr/stampa	Amsterdam ; ; London, : Elsevier, c2008
ISBN	1-281-05567-0 9786611055677 0-08-055507-1
Edizione	[3rd ed.]
Descrizione fisica	1 online resource (747 p.)
Collana	Surface production operations ; ; 1
Altri autori (Persone)	StewartMaurice
Disciplina	665.5
Soggetti	Oil fields - Equipment and supplies Oil fields - Production methods Petroleum engineering - Equipment and supplies
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Surface Production Operations; Copyright Page; Table of Contents; Acknowledgments to the Third Edition; About the Book; Preface to the Third Edition; Chapter 1 The Production Facility; Introduction; Making the Equipment Work; Facility Types; Chapter 2 Process Selection; Introduction; Controlling the Process; Operation of a Control Valve; Pressure Control; Level Control; Temperature Control; Flow Control; Basic System Configuration; Wellhead and Manifold; Separation; Initial Separation Pressure; Stage Separation; Selection of Stages; Fields with Different Flowing Tubing Pressures Determining Separator Operating PressuresTwo-Phase vs. Three-Phase Separators; Process Flowsheet; Oil Treating and Storage; Lease Automatic Custody Transfer (LACT); Pumps; Water Treating; Compressors; Gas Dehydration; Well Testing; Gas Lift; Offshore Platform Considerations; Overview; Modular Construction; Equipment Arrangement; Chapter 3 Basic Principles; Introduction; Basic Oil-Field Chemistry; Elements, Compounds, and Mixtures; Atomic and Molecular Weights; Hydrocarbon Nomenclature; Paraffin Series: (CnH2n+2); Paraffin Compounds; Acids and Bases; Fluid Analysis; Physical Properties

Molecular Weight and Apparent Molecular WeightExample 3-1: Molecular weight calculation; Example 3-2: Determine the apparent molecular weight of dry air, which is a gas mixture consisting of nitrogen, oxygen, and small amounts of Argon; Gas Specific Gravity and Density; Example 3-3: Calculate the specific gravity of a natural gas with the following composition; Nonideal Gas Equations of State; Reduced Properties; Example 3-4: Calculate the pseudo-critical temperature and pressure for the following natural gas stream composition
Example 3-5: Calculate the volume of 1 lb mole of the natural gas stream given in the previous example at 120°F and 1500 psiaExample 3-6: A sour natural gas has the following composition. Determine the compressibility factor for the gas at 100°F and 1000 psia; Liquid Density and Specific Gravity; Viscosity; Gas Viscosity; Liquid Viscosity; Oil-Water Mixture Viscosity; Phase Behavior; System Components; Single-Component Systems; Multicomponent Systems; Lean Gas Systems; Rich Gas Systems; Retrograde Systems; Application of Phase Envelopes; Black Oil Reservoir; Phase Diagram Characteristics Field CharacteristicsLaboratory Analysis; Volatile Oil Reservoir; Phase Diagram Characteristics; Field Characteristics; Laboratory Analysis; Retrograde Gas Reservoir; Phase Diagram Characteristics; Field Characteristics; Laboratory Analysis; Wet Gas Reservoir; Phase Diagram Characteristics; Field Characteristics; Dry Gas Reservoir; Phase Diagram Characteristics; Information Required for Design; Flash Calculations; Characterizing the Flow Stream; Molecular Weight of Gas; Gas Flow Rate; Liquid Molecular Weight; Specific Gravity of Liquid; Liquid Flow Rate; The Flow Stream
Approximate Flash Calculations

Sommario/riassunto

The latest edition of this best-selling title is updated and expanded for easier use by engineers. New to this edition is a section on the fundamentals of surface production operations taking up topics from the oilfield as originally planned by the authors in the first edition. This information is necessary and endemic to production and process engineers. Now, the book offers a truly complete picture of surface production operations, from the production stage to the process stage with applications to process and production engineers.· New in-depth coverage of hydrocarbon character