Input data:

**OPR**

* Fluid
  + Degree API
  + Gas SG
  + Water SG
  + Gas Inj SG
  + Impurities like H2S, CO2, Nitrogen
* Operational variables
  + Pressure @ start
  + Temperature @ start
  + Liquid flowrate @ STD
  + Water cut
  + GLR
  + Artificial lift method: Natural flow, gas lift, ESP
* Geometric Parameters
  + Pipe – collection of segments
  + Flow direction
  + calculation direction
  + Segment – collection of cells with same characteristics
    - Length
    - Inclination
    - Diameter
    - Number of cells
    - Relative roughness
    - Ambient temperature
    - Choice of correlation for solving
  + Cell – fundamental unit for flow sim
* Selection
  + What are the correlations the user selects to calculate **fluid properties**
  + Pressure drop calculation method fixed delta p vs delta l
* Pipe heat transfer properties
  + Layers of pipe (different materials)
  + Temp calculation (either = to ambient of calculated)
* Drawing of configuration of the pipe
  + Ambient temperature
  + Flow direction
  + Calculation direction

**IPR**

* Operational values
  + Temperature
  + Pressure
* Fluid Properties
  + fluid
    - Two phase – a modification for, custom, vogel and fetkovich, pmin = minimum between avg res pressure and pb, max(pwf,pb)
    - Gas
    - liquid
  + Saturation pressure
  + Viscosity
  + Formation volume factor
* Reservoir characteristics
  + Permeability
  + Drainage area
  + Height
  + Drainage area
  + Hole size
  + Skin
  + Shape factor
* Productivity index
  + Vertical
  + Horizontal
    - Joshi – steady state
    - Furui – steady state
    - Babu & Ode – psuedosteady state
  + Flow regime
    - Transient
    - Pseudo-Steady State
    - Steady State
  + Methods
    - Reservoir properties
    - 1 flow test & pres
    - 2 flow test
* Flow test
  + Two sets of pwf and flowrate values
* Transient specific values
  + Porosity
  + Total compressibility
  + Time
* Skin
  + Damage skin
    - Altered permeability
    - Altered zone radius
  + Deviation
    - Degree from vertical of the wellbore
  + Partial completion
  + Type of completion, gravel pack, hydraulic fracture, etc
* Plotting
  + Pwf vs, q
  + P wellhead
  + P saturation