

Cohiba Model File Elements in Cohiba Version 6.0

August 2, 2019

The latest version of the Cohiba manual is available at: www.nr.no/en/COHIBA.

For Cohiba support contact Pal.Dahle@nr.no, Ariel.Almendral.Vazquez@nr.no,
or Petter.Abrahamsen@nr.no.

Required elements:

Most elements have default values and are optional. The following elements must be present in all Cohiba model files.

```
1 <cohiba>
2 <project-settings>
17 . <output-grid>
181 <surfaces>
187 . <surface>
188 . . <name>
230 <interval-models>
231 . <interval>
233 . . <top>
234 . . <base>
235 . . <interval-type>
245 . . <variogram>
```

© Norwegian Computing Center, P.O.Box 114, Blindern, NO-0314 Oslo, Norway.
www.nr.no

All elements:

- 1 <cohiba> (*required*)
- 2 <project-settings> (*required*)
- 3 . <project-title>
- 4 . <project-description>
- 5 . <seed>
- 6 . <project-directory>
- 7 . <input-directory>
- 8 . <input-directory-surfaces>
- 9 . <input-directory-well-data>
- 10 . <output-directory>
- 11 . <number-of-threads>
- 12 . <measurement-units>
- 13 . . <z-unit>
- 14 . . <xyz-unit>
- 15 . . <time-unit>
- 16 . . <two-way-time>
- 17 . <output-grid> (*required*)
- 18 . . <format>
- 19 . . <read-from-file>
- 20 . . <xstart>
- 21 . . <ystart>
- 22 . . <xinc>
- 23 . . <yinc>
- 24 . . <xlength>
- 25 . . <ylength>
- 26 . . <grid-azimuth>
- 27 . <messages>
- 28 . . <logfile>
- 29 . . . <name>
- 30 . . . <detail-level>
- 31 <overall>
- 32 <model-settings>
- 33 <data-loading>
- 34 <pre-processing>
- 35 <surface-models>
- 36 <well-points>
- 37 <extra-points>
- 38 <well-branching>
- 39 <well-paths>
- 40 <trend-coefficients>
- 41 <residual-uncertainties>
- 42 <outliers>
- 43 <well-point-conditioning>
- 44 <help-points>
- 45 <well-path-conditioning>
- 46 <post-processing>
- 47 <target-point-qc>
- 48 <zonation-checking>
- 49 <well-trajectories>
- 50 <spill-points>
- 51 <volume-calculations>

52 <interval-export>
53 <surface-export>
54 <timings>
55 <tasks>
56 . . <screen>
57 . . . <detail-level>
58 . <write-expert-files>
59 . <additional-output-control>
60 . . <write-all-logfiles>
61 . . <write-realization-maps>
62 . . <write-xyz-point-files>
63 . . <write-scaled-input-isochores>
64 . . <write-scaled-input-SD-isochores>
65 . . <write-filtered-velocity-trends>
66 . . <write-filtered-SD-maps>
67 . . <write-regridded-input-maps>
68 . . <write-unfiltered-output-velocities>
69 . . <write-wells>
70 . . <prefix-for-log-files>
71 . . <csv-file-style>
72 <modelling-settings>
73 . <mode>
74 . <kriging-method>
75 . <number-of-realizations>
76 . <condition-to-well-paths>
77 . <allow-wells-to-move>
78 . <check-specified-residual-uncertainties>
79 . <minimize-broken-zonation>
80 . <distance-between-zonation-points>
81 . <add-uncertainty-to-severe-outliers>
82 . <include-all-well-points-in-kriging>
83 . <simulate-trend-uncertainty>
84 . <pre-process-surfaces>
85 . . <make-time-surfaces-consistent>
86 . . <scale-isochores-to-seismic-envelopes>
87 . . <extrapolate-input-surfaces>
88 . . . <extrapolation-method>
89 . . . <extrapolation-kriging-thinning-correlation>
90 . . . <extrapolation-kriging-range>
91 . . . <extrapolation-inverse-distance-weighting-power>
92 . . . <extrapolation-SD-factor>
93 . . <smoothing-factor-velocity-trends>
94 . . <smoothing-factor-SD-maps>
95 . <post-process-surfaces>
96 . . <erode-and-onlap>
97 . . <treat-reflectors-as-eroding-and-onlapped>
98 . . <make-average-of-crossing-surfaces>
99 . . <make-surfaces-interpolate-well-points>
100 . . <allow-small-surface-adjustment-at-zonation-points>
101 . . <set-eroded-nodes-to-undefined>
102 . . <smoothing-factor-calculated-velocities>
103 . <correlated-intervals>
104 . . <correlated-intervals-residual-range>
105 . . <correlated-intervals-residual-power>

106 . . <correlated-intervals-simulation>
107 . . <correlated-intervals-trend-range>
108 . . <correlated-intervals-trend-power>
109 . . <correlated-intervals-ratios-for-trends>
110 . <advanced-settings>
111 . . <max-rejection-rate>
112 . . <model-weight-resolution>
113 . . <max-SD-for-well-points-interpolation>
114 . . <max-residual-for-well-points-interpolation>
115 . . <max-gradient-for-surface-adjustment>
116 . . <max-residual-for-adjustment-at-zonation-points>
117 . . <min-distance-from-surface-to-zonation-points>
118 . . <allow-zonation-points-near-faults>
119 . . <base-help-points-on-simulated-surfaces>
120 . . <solver-for-weights>
121 . . <max-iterations-to-avoid-broken-zonation>
122 . . <correlate-close-reflectors>
123 . . <max-obs-direct-estim-trend-coef>
124 . . <max-obs-GLS-approx-trend-coef>
125 . . <max-obs-GLS-approx-extreme-outliers>
126 . . <max-obs-update-trend-coef-using-well-paths>
127 . . <threshold-for-trace-clustering>
128 . . <threshold-for-cluster-merging>
129 . . <threshold-for-well-point-cluster-inclusion>
130 . . <threshold-for-removing-undefined-well-sections>
131 . . <threshold-for-help-point-deactivation>
132 . . <threshold-for-special-help-point-deactivation>
133 . . <threshold-for-high-correlation-wp-wp>
134 . . <threshold-for-high-correlation-wp-ip>
135 . . <threshold-for-high-correlation-wp-ep>
136 . . <min-isochores-thickness>
137 . . <threshold-for-mild-error>
138 . . <t-value-outlier>
139 . . <t-value-severe-outlier>
140 . . <t-value-error>
141 . . <t-value-extreme-error>
142 . . <t-value-first-help-point>
143 . . <t-value-second-help-point>
144 . . <max-generalized-eigenvalue-for-inequality-points>
145 . . <max-dxy-for-identical-well-points>
146 . . <max-dz-for-identical-well-points>
147 . . <max-slope-before-possible-conflict>
148 . . <min-SD-close-well-points>
149 . . <threshold-for-conditioning-in-neighbourhood>
150 . . <preprocess-range-factor-for-neighbourhood>
151 . . <min-range-factor-for-neighbourhood>
152 . . <max-range-factor-for-neighbourhood>
153 . . <target-number-of-data-in-neighbourhood>
154 . . <min-generalized-eigenvalue-for-residual-uncert>
155 . . <volume-calculation-method>
156 . . <keep-all-pinchout-points>
157 . . <normalize-interval-weights-table>
158 . . <check-zonation-in-branching-wells>
159 . . <add-uncertainty-to-close-observations>

```

160 <well-data>
161 . . <wellpath-TVD-SD-range>
162 . . <well-log>
163 . . . <files>
164 . . . <zone-log-specification>
165 . . . <zone-log-specification-file>
166 . . . <zone-log-name>
167 . . . <fault-log-name>
168 . . . <MD-log-name>
169 . . . <wellpoint-TVD-pick-SD-log-name>
170 . . . <wellpath-TVD-SD-log-name>
171 . . . <wellpath-TVD-SD-increase-rate>
172 . . . <tops-as-mean-values>
173 . . . <first-log-entry-as-top>
174 . . . <TVD-values-are-negative>
175 . <well-points>
176 . . <files>
177 . <well-points-to-ignore>
178 . . <files>
179 . <values-outside-grid>
180 . . <value well-name="" surface-name="" x="" y="" SD="">
181 <surfaces> (required)
182 . <reference>
183 . . <name>
184 . . <depth>
185 . . <common-top-for-correlated-intervals>
186 . . <travel-time>
187 . <surface> (required)
188 . . <name> (required)
189 . . <top-of-zone>
190 . . <erosive>
191 . . <onlapped>
192 . . <free-surface>
193 . . <reflector>
194 . . <common-top-for-correlated-intervals>
195 . . <travel-time>
196 . . . <value>
197 . . . <values-outside-grid>
198 . . . . <value>
199 . . . . <variogram>
200 . . . . . <type>
201 . . . . . <range>
202 . . . . . <subrange>
203 . . . . . <azimuth>
204 . . . . . <SD>
205 . . . . . . <relative>
206 . . . . . . <minimum>
207 . . . . . . <power>
208 . . . . . <values-outside-grid>
209 . . . . . . <value>
210 . . <spill-point>
211 . . . <missing-as-wall>
212 . . . <xstart>
213 . . . <ystart>

```

214 . . . <acceptance-criteria>
215 <spill-point-above>
216 <spill-point-below>
217 <spill-point-at>
218 <spill-point-tolerance>
219 <trap-larger-than>
220 . . . <condition-to-spill-point-at-surface>
221 . . . <weight-isochore-package-above>
222 . . . <output>
223 <depth>
224 <depth-uncertainty>
225 <depth-trend>
226 <depth-trend-uncertainty>
227 <depth-residual>
228 <depth-residual-uncertainty>
229 <trap>
230 <interval-models> (*required*)
231 . . <interval> (*required*)
232 . . . <name>
233 . . . <top> (*required*)
234 . . . <base> (*required*)
235 . . . <interval-type> (*required*)
236 . . . <trend>
237 <coefficient-mean>
238 <coefficient-SD>
239 <relative-SD>
240 <value>
241 <values-outside-grid>
242 <value>
243 . . . <correlations>
244 <cp-q>
245 . . . <variogram> (*required*)
246 <type>
247 <range>
248 <subrange>
249 <azimuth>
250 <SD>
251 <relative>
252 <minimum>
253 <power>
254 <values-outside-grid>
255 <value>
256 . . . <output>
257 <thickness>
258 <thickness-trend>
259 <thickness-residual>
260 <velocity>
261 <velocity-trend>
262 <volumes>
263 . . <volume>
264 . . . <reservoir-name>
265 . . . <top-surface>
266 . . . <base-surface>
267 . . . <top-contact>

268 . . <base-contact>
269 . . <area-file>
270 . . <area-names>
271 . . <only-trapped-volume>
272 . . <remove-isolated-volumes-less-than>
273 . . <connected-volume>
274 . . . <xstart>
275 . . . <ystart>
276 . . <column-map>
