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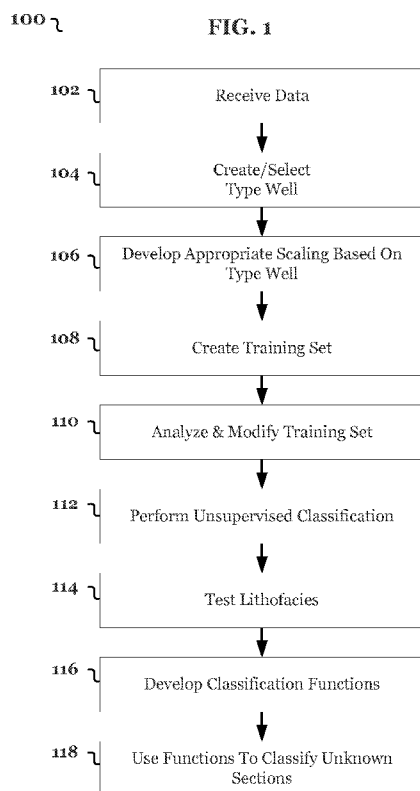
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(54) Title: FACIES DEFINITION USING UNSUPERVISED CLASSIFICATION PROCEDURES



(57) **Abstract:** The disclosed embodiments include a method, apparatus, and computer program product for generating facies definition. One embodiment is a computer-implemented method that includes the steps of receiving well logging data indicative of one or more properties of geologic formations penetrated by one or more wellbores, wherein no assumptions are being introduced to the well logging data; determining a type well; developing an appropriate scaling of the well logging data based on the type well; creating a training set by drawing samples from the well logging data at random depths; modifying the training set to remove interfering data; performing an unsupervised classification procedure on the training set to group samples in the training set; comparing a suite of values of the well logging data in the groups to classify lithofacies of the type well; develop classification functions; and classifying unknown wells using the classification functions to generate the facies definition.



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