pressure control over a wellbore. However, activation of a BOP as a well control response cause significant downtime for the drilling operation.

SUMMARY

[0004a] According to a first aspect of the present disclosure, there is provided a system, including: a first sensor configured to monitor a first characteristic of a drilling fluid and generate a first indication based on monitoring of the first characteristic; a second sensor configured to monitor a second characteristic of the drilling fluid and generate a second indication based on monitoring of the second characteristic; and a processor configured to: correlate the first indication with the second indication to generate a baseline value indicative of a characteristic of a well.

[0004b] According to a second aspect of the present disclosure, there is provided a device, including: a processor configured to: receive a first signal related to a first characteristic of a drilling fluid; receive a second signal related to a second characteristic of drilling fluid; correlate the first signal with the second signal to generate a correlated result; compare the correlated result to a baseline value indicative of a characteristic of a well; and generate an indication related to the characteristic of the well based on comparing the correlated result to a baseline value.

[0004c] According to a third aspect of the present disclosure, there is provided a tangible, non-transitory computer-readable medium having computer executable code stored thereon, the computer executable code including instructions to cause a processor to: receive a first signal related to a first characteristic of a drilling fluid; receive a second signal related to a second characteristic of the drilling fluid; and correlate the first signal with the second signal to generate a range of values indicative of a characteristic of a well.

BRIEF DESCRIPTION OF DRAWINGS

[0005] FIG. 1 illustrates an example of an offshore platform having a riser coupled to a blowout preventer (BOP), in accordance with an embodiment;

[0006] FIG. 2A illustrates a side view of the BOP of FIG. 1, in accordance with an embodiment;

[0007] FIG. 2B illustrates a front view of the BOP of FIG. 1, in accordance with an embodiment;

[0008] FIG. 3 illustrates a front view of a control system of the BOP of FIG. 1, in accordance with an embodiment; and

[0009] FIG. 4 illustrates a flow chart used in conjunction with the automatic well control system of FIG. 3, in accordance with an embodiment.

DETAILED DESCRIPTION

[0010] One or more specific embodiments will be described below. In an effort to provide a concise description of these embodiments, all features of an actual implementation may not be described in the specification. It should be appreciated that in the development of any such actual implementation, as in any engineering or design project, numerous implementation-specific decisions must be made to achieve the developers' specific goals, such as compliance with system-related and business-related constraints, which may vary from one implementation to another. Moreover, it should be appreciated that such a development effort might be complex and time consuming, but would nevertheless be a routine undertaking of design, fabrication, and manufacture for those of ordinary skill having the benefit of this disclosure.

[0011] When introducing elements of various embodiments, the articles "a," "an," "the," and "said" are intended to mean that there are one or more of the elements. The terms

CLAIMS

1. A system, comprising:

a first sensor configured to monitor a first characteristic of a drilling fluid and generate a first indication based on monitoring of the first characteristic;

a second sensor configured to monitor a second characteristic of the drilling fluid and generate a second indication based on monitoring of the second characteristic; and

a processor configured to:

correlate the first indication with the second indication to generate a baseline value indicative of a characteristic of a well.

2. The system of claim 1, wherein the first sensor comprises a fluid flow sensor.

3. The system of claim 2, wherein the fluid flow sensor is configured to monitor a volume of the drilling fluid being transmitted into the well as the first characteristic.

4. The system of claim 1, wherein the second sensor comprises a pressure sensor.

5. The system of claim 1, wherein the second sensor is configured to monitor a pressure of the drilling fluid being transmitted into the well as the second characteristic.

6. The system of claim 1, wherein the processor is configured to generate a range of values based on the baseline value.

7. The system of claim 6, wherein the first sensor is configured to generate a third indication, wherein the second sensor is configured to generate a fourth indication, wherein the processor is configured to correlate the third indication with the fourth indication to generate a correlated result.

8. The system of claim 7, wherein the processor is configured to determine whether the correlated result has a value within the range of values.

9. The system of claim 8, wherein the processor is configured to adjust the range of values based on the correlated result when the value is within the range of values.

10. The system of claim 8, wherein the processor is configured to generate an alarm when the value is outside of the range of values.

11. The system of claim 8, wherein the processor is configured to generate an indication to initiate a shut in of the well via a BOP when the value is outside of the range of values.

12. A device, comprising:

a processor configured to:

receive a first signal related to a first characteristic of a drilling fluid;

receive a second signal related to a second characteristic of drilling fluid;

correlate the first signal with the second signal to generate a correlated result;

compare the correlated result to a baseline value indicative of a characteristic of a well; and

generate an indication related to the characteristic of the well based on comparing the correlated result to a baseline value.

13. The device of claim 12, wherein the processor is configured to compare the correlated result to a range of values as the baseline value.

14. The device of claim 13, wherein the processor is configured to determine whether the correlated result has a value within the range of values.

15. The device of claim 14, wherein the processor is configured to adjust the range of values based on the correlated result when the value is within the range of values.

16. The device of claim 14, wherein the processor is configured to generate an alarm as the indication when the value is outside of the range of values.

17. The device of claim 14, wherein the processor is configured to transmit the indication to cause a BOP to shut in the well when the value is outside of the range of values.

18. A tangible, non-transitory computer-readable medium having computer executable code stored thereon, the computer executable code comprising instructions to cause a processor to:

receive a first signal related to a first characteristic of a drilling fluid;

receive a second signal related to a second characteristic of the drilling fluid; and

correlate the first signal with the second signal to generate a range of values indicative of a characteristic of a well.

19. The tangible, non-transitory computer-readable medium of claim 18, wherein the computer executable code comprises instructions to cause the processor to:

receive a third signal related to the first characteristic of the drilling fluid;

receive a fourth signal related to the second characteristic of the drilling fluid;

correlate the third signal with the fourth signal to generate a correlated result; and

determine whether the correlated result has a value within the range of values.

20. The tangible, non-transitory computer-readable medium of claim 19, wherein the computer executable code comprises instructions to cause the processor to generate an indication related to the characteristic of the well based on determining whether the correlated result has a value within the range of values.