CLAIMS

WHAT IS CLAIMED IS:

1. A downhole abrading tool for use in a well, the downhole abrading tool comprising:

a housing;

a cutting end disposed on a lower end of the housing, the cutting end having an identification tag that emits a signal;

a detector for receiving the signal being emitted by the identification tag, the detector disposed in the housing at a location relative to the cutting end to enable the detector to receive the signal being emitted by the identification tag; and

a relay module disposed in the housing and operatively associated with the detector for receiving a first communication from the detector regarding a first condition of the signal and transmitting the first communication to an operator located at the surface location,

wherein a change in the first condition of the signal indicates wear on the cutting end.

2. The downhole tool of claim 1, wherein the detector is disposed adjacent the cutting end.

3. The downhole tool of claim 1, wherein the relay module is disposed adjacent the cutting end.

4. The downhole tool of claim 1, wherein the identification tag is embedded in a cutting matrix of the cutting end.

5. The downhole tool of claim 1, wherein the identification tag is disposed on a surface of the cutting end.

6. The downhole tool of claim 1, wherein the identification tag is disposed on a blade of the cutting end.

7. The downhole tool of claim 6, further comprising a cutting element disposed on the blade, the identification tag being operatively associated with the cutting element.

8. The downhole tool of claim 7, wherein the identification tag is disposed at least partially in the cutting element.

9. The downhole tool of claim 1, wherein the change in the first condition of the signal comprises a lessening of strength of the signal.

10. A method of determining wear of a downhole abrading tool, the method comprising the steps of:

(a) abrading an object disposed in a wellbore with a downhole tool having a working profile, the working profile including an identification tag, the identification tag emitting a signal;

(b) detecting at a location in close proximity to the working profile a first strength of the signal; and

(c) detecting at the location in close proximity to the working profile a second strength of the signal, the difference between the first strength and the second strength indicating wear of the working profile.

11. The method of claim 10, wherein steps (b) and (c) are performed by a detector disposed adjacent the working profile.

12. The method of claim 10, wherein the signal comprises an accumulation of individual signals being emitted by a plurality of identification tags.

13. The method of claim 10, wherein the second strength of the signal comprises an absence of the first strength of the signal.

14. The method of claim 10, wherein after steps (b) and (c), the first strength of the signal and second strength of the signal, respectively, are communicated to a surface location.

15. The method of claim 10, wherein the first strength of the signal is emitted by a first identification tag and the second strength of the signal is emitted by a second identification tag.

CLAIMS

1. A downhole abrading tool for use in a well, the downhole abrading tool comprising:

a housing;

a cutting end disposed on a lower end of the housing, the cutting end having an identification tag that emits a signal;

a detector for receiving the signal being emitted by the identification tag, the detector disposed in the housing at a location relative to the cutting end to enable the detector to receive the signal being emitted by the identification tag; and

a relay module disposed in the housing and operatively associated with the detector for receiving a first communication from the detector regarding a first condition of the signal and transmitting the first communication to an operator located at the surface location,

wherein a change in the first condition of the signal indicates wear on the cutting end;

wherein the change in the first condition of the signal comprises a lessening of strength of the signal.

2. The downhole tool of claim 1, wherein the detector is disposed adjacent the cutting end.

3. The downhole tool of claim 1, wherein the relay module is disposed adjacent the cutting end.

4. The downhole tool of claim 1, wherein the identification tag is embedded in a cutting matrix of the cutting end.

5. The downhole tool of claim 1, wherein the identification tag is disposed on a surface of the cutting end.

6. The downhole tool of claim 1, wherein the identification tag is disposed on a blade of the cutting end.

7. The downhole tool of claim 6, further comprising a cutting element disposed on the blade, the identification tag being operatively associated with the cutting element.

8. The downhole tool of claim 7, wherein the identification tag is disposed at least partially in the cutting element.

9. A method of determining wear of a downhole abrading tool, the method comprising the steps of:

(a) abrading an object disposed in a wellbore with a downhole tool having a working profile, the working profile including an identification tag, the identification tag emitting a signal;

(b) detecting at a location in close proximity to the working profile a first strength of the signal; and

(c) detecting at the location in close proximity to the working profile a second strength of the signal, the difference between the first strength and the second strength indicating wear of the working profile.

10. The method of claim 9, wherein steps (b) and (c) are performed by a detector disposed adjacent the working profile.

11. The method of claim 9, wherein the signal comprises an accumulation of individual signals being emitted by a plurality of identification tags.

12. The method of claim 9, wherein the second strength of the signal comprises an absence of the first strength of the signal.

13. The method of claim 9, wherein after steps (b) and (c), the first strength of the signal and second strength of the signal, respectively, are communicated to a surface location.

14. The method of claim 9, wherein the first strength of the signal is emitted by a first identification tag and the second strength of the signal is emitted by a second identification tag.