



RSDD-H Performance Statistics – Caveats, Dependencies and Survey Implications:

As we have documented elsewhere, SFL has carried out a global audit of our RSDD-H capabilities, reviewing our ability across numerous known basins, fields and well locations. Having compared our own findings with some 383 wells, we have found our effectiveness to be 78%.

The purpose of this document is to give some further detail on how these findings were established through providing, context and details about how and where we do and do not operate.

Determining Success vs. Failure:

As part of this well audit we have attempted to prescribe whether we correctly see known industry results and then recording our performance as either a success or failure (or in some cases a degree between the two). Where we know a well location, we can look at our own RSDD-H view of that area and make a determination as to whether we see that well as either “On”, “Off” or “Marginal” to our RSDD-H anomalies. The table below outlines a number of scenarios and how we would view them in terms of RSDD-H success, or not:

Known Well Result	Position vs. RSDD-H Anomalies	RSDD-H Success / Failure
Oil / Gas Well	On	Success
Oil / Gas Shows	Marginal	Success
Dry Hole	Off	Success
Oil / Gas Well	Off	Failure
Oil / Gas Shows	On	50:50 Success:Failure
Dry Hole	On	Failure

Of course there are a number of other variations on the above theme, however this indicates how we are determining success vs. failure on the basis of our own findings vs. known results.

This process allows us to establish our confidence of operating in particular regions around the world and therefore for example we can reasonably assume that if we carry out a survey in an area where we have an 80% success rate against known results, that it will follow that any new prospects / leads we identify have an 80% probability of being true.

N.B. As with the rest of the industry we operate in a world of in-perfect data, therefore we must seek out and use the best basin / field / well data we can find for calibration purposes and use this until such time as new / more accurate data becomes available at which point any of our findings which the new data relates to can and will then be refined.

Critical Factors Affecting Survey Effectiveness:

There are a number of factors dictating whether or not Scotforth can effectively survey in any given area. The primary constraining elements are outlined below.

Terrain, Local Geomorphology, Landscape and Land Use Heterogeneities :

RSDD-H can only operate onshore. There are a few onshore geographic terrains in which RSDD-H is less effective, for example wetlands or areas where there are shifting sands. Scotforth has now excellent knowledge of many of the global family of ecosystems, their individual quirks and how to



mitigate them by bespoke image processing. Nevertheless, some remain difficult survey terrains although their landscape interferences are usually recognised and their arising false positives or false negatives can be addressed or appropriately risked.

Satellite Image Data Volume and Quality:

RSDD-H is dependent on the analysis of multiple satellite images from a number of different sources as part of each survey. Therefore on occasion inadequacy of volume and/or quality of suitable imagery can determine whether surveying to acceptable levels is possible. By example, certain ecosystems and terrains are habitually covered by clouds such that there simply are not sufficient images suitable for analysis. In other cases, satellite data may simply not have been captured for a particular area to any extent over the years, in which case again effective surveying is not possible.

Given these variables, it is therefore paramount that prior to engaging on any survey Scotforth screens whether the target survey area is suitable and to what extent. Scotforth ranks target survey areas for their expected survey confidence levels as this affects the expected effectiveness of survey results. Scotforth does not sign contracts for RSDD-H surveys that it will not be able to perform confidently carry. **The illustration below further demonstrates the influence of landscape and data quality over survey effectiveness.**

Data Quality	Good	"AC" Moderate	"AB" Very Good	"AA" Excellent
	Moderate	"BC" Poor	"BB" Good	"BA" Very Good
	Poor	"CC" Very Poor	"CB" Poor	"CA" Moderate
		Poor	Moderate	Good
		Landscape Quality		

The back test data are largely drawn from high confidence areas. Where this confidence is lesser we correspondingly reduce our predicted effectiveness of results in surveys.

A further factor to consider when surveying is whether the area is a new exploration frontier or whether there has already been extensive exploration against which SFL can calibrate to increase RSDD-H accuracy and confidence. This likewise is taken into assessment of overall survey results.



Overall RSDD-H Effectiveness Guidance: Given the foregoing, Scotforth is currently applying the following survey effectiveness guidance across different regions and basins:

Expected RSDD-H Effectiveness	Corresponding Survey Confidence
>80%	Very Good / Excellent
70 – 80%	Good
60 – 70%	Moderate
50 – 60%	Poor
<50%	Very Poor - survey not recommended

Clearly, even where confidence levels are shown as “poor”, the RSDD-H success rates are still between two and three times those of seismic. With the above categories in mind we can state that our current confidence in the areas audited is as follows:

Country	SFL Survey Category
Kurdistan	Very Good / Excellent
East Africa	Very Good / Excellent
Pakistan	Very Good / Excellent
Australia	Good
UK Onshore	Moderate
Rest of World	Very Good / Excellent*
Powder River Basin (US)	Good

*Based on initial small scale research projects in new territories for SFL and RSDD-H. As this research is expanded our survey confidence may be moved either up or down depending on the regions analysed.

Further geographies and basins that have been surveyed will be added progressively to this listing (e.g. Latin America, US Lower 48 and Alaska, FSU and more).

Increasingly, **Scotforth has advanced its high resolution processing capacities such that it can now play an active role in optimising the selection of prospect and field well sites based on their RSDD-H attributes.** It is amazing how many industry wells have been drilled on what we would consider unacceptable category D/E locations (poor to unacceptable) when there are far superior Category A/B/C locations (Excellent, Good/Moderate) nearby. This often determines the technical and commercial success or failure of the well investment expenditures and prediction of follow-on potential.



Implications for Surveying:

Detailed surveying will further increase confidence – for the purposes of our well audit we have only taken a “first look” or “reconnaissance” view of many of the global locations. As part of a full RSDD-H survey we will take a much higher resolution view of any survey area, this will only further increase the confidence in our findings.

Prospect prioritisation can also further increase confidence – whilst an 80% success rate may already be very impressive, we could infer that this can be further increased by drilling only on RSDD-H sweet spots / cores. This is because our 20% failure rate is primarily accounted for by outlying wells which are either marginal to or off our RSDD-H anomalies. What we do not see are known fields which RSDD-H is simply not picking up. Therefore we could suggest that by drilling only on areas where we have highest confidence we could realistically expect the probability of encountering HC's to be greater than 80%.