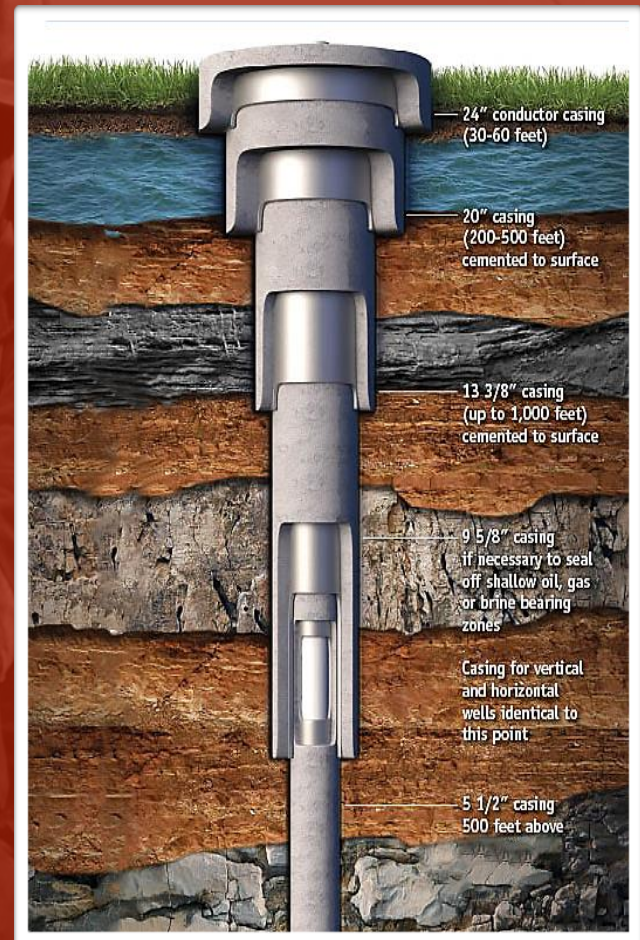


Well Integrity Management System

GINNOVO

What Can We Do For You



Why are we here today, are you looking just for analyses from Well Integrity Tools, or are you looking for Well Integrity Management Support ?

Do you have sufficient in house experience and resources to effectively manage Well Integrity?

Do you need additional support which is purely focussed on Well Integrity?

We spent time discussing the latest technology GINNOVO logging and analyses tools, do you always know when and how these are best applied?

Is your Well Integrity Management System complete, effective and functioning as an integral part of your business?

If the answer to this question is not a resounding yes, then maybe you need a gap analyses to identify what is missing and what is not working.

In our industry, a frequent misconception is that buying an expensive Well Integrity Management Database will solve all our problems.

A complex database can add further levels of confusion and often has multiple functions that require significant input for minimal output. To increase efficiency requires exactly the opposite, so that resources are focussed on the issues of Well Integrity rather than simply managing the system.

A database will not make decisions, it simply organises information, often at a high cost. Effective decisions can only be made by collecting the correct data, then applying the right level of experience to analyse the data, and the right level of experience to identify the appropriate remedial action.

Are you managing Well Integrity, or are you too busy managing your management system.....

Remember, the Prime Function Of Well Integrity Management is to ensure the availability and reliability of the safety critical elements, by identifying and Managing Anomalies

Often, expensive management databases don't report how anomalies are being managed. Reporting and managing anomalies is exactly what our database does, and we provide this database as part of our service.

So How Can GINNOVO Help?

We can perform a Gap analyses to identify the effectiveness of your Well Integrity Management System.

We can provide experienced support to fill the gaps with either modified or new documents and management processes.

We can review the maintenance and testing procedures to ensure they are fit for purpose and that they achieve the primary objective (ensuring the availability and reliability of the SCE's in a cost effective manner).

We have a Database to log activities and help manage anomalies.

We can provide technical support to maintain the database, produce the status reports and make recommendations regarding remedial and preventative activities. This technical support will be familiar with all Ginnovo Well Integrity Technology.

So How Can GINNOVO Help?

We can provide technical support for identifying cost effective solutions and the required expertise to project manage remedial activities (from procedures to end of job reports and follow up recommendations).

A quick look at the output from our database

This database presently contains 15 make believe wells with status as per the table below:

	Producing Formation	Reservoir Pressure	Last Annual Maintenance	Last 6 Monthly Maintenance	Well	Open Integrity Issues WI Status	Issue
Big Red Onshore Manned Installation							
3 Natural Flow Wells	J3	4000	6/1/2014	12/6/2014	BR02	WIS 4	Excessive T/A Communication
2 No Flow Pumped Wells	J2	2500					
1 Water Injection Well	J2	2500					
Gulf A Offshore Manned Installation							
3 Gas Lifted No Flow Wells	J2	3000	7/1/2014	1/1/2015	GA03	WIS6	Failed DHSV
1 Water Injection Well	J2	3000			GA02	WIS2	Failed HMV
1 Gas production Well	J1	3500			GA05	WIS7	Excessive T/A Communication
Gulf B Offshore NUI							
3 Natural Flow Wells	J3	4500	5/1/2014	11/1/2014	GB02	WIS2	HMV Slow Closure
Gulf C Subsea Template							
3 Natural Flow Wells	J1	4000	8/1/2014	N/A			

The first report is the Integrity Summary. The report below is sorted for all wells:

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Well Integrity Issue Summary

Business Unit Palm Dubai

Field All Field

	Status	Offshore Manned Complex	Offshore NUI	Offshore Sub Sea	Onshore Manned Complex
	Total Number Of Well	5	3	1	6
WIS1	No Integrity Issues	2	2	1	5
WIS2	Managed Integrity Issue - Not Considered MAH	1	1	0	0
WIS3	Managed Integrity Issue - ACP Within Company Standards	0	0	0	0
WIS4	Plugged to Restore Integrity - Minor Remedial	0	0	0	1
WIS5	Plugged To Restor Integrity - Major Remedial	0	0	0	0
WIS6	Integrity Issue, Potential MAH - Minor Remedial	1	0	0	0
WIS7	Integrity Issue, Potential MAH - Major Remedial	1	0	0	0
WIS8	List For Abandonment	0	0	0	0
	Total integrity Issues	3	1	0	1

Note: Total integrity issues may include more than 1 issue per well, Well integrity status reflect highest priority open issue

The next level is the Issues List Report. This report is sorted for all issues:

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Well integrity Issue List

Bussiness Unit Palm Dubai

Field PD Onshore 1

Asset Name	well no	Asset Type	Date	Status	Issue	Comments
Big Red	BR02	Onshore Manned Complex	12/6/2015	Plugged to Restore Integrity - Minor Remedial	Tubing to Annulus Communication	Noted tubing to A Annulus pressure within MAWOP

Field PD Offshore 1

Asset Name	well no	Asset Type	Date	Status	Issue	Comments
Gulf A	GA03	Offshore Manned Complex	1/1/2015	Integrity Issue. Potential MAH - Minor Remedial	DHSV	DHSV Failed Leak test.
Gulf A	GA02	Offshore Manned Complex	1/1/2015	Managed Integrity Issue - Not Considered MAH	Xmas Tree Valve	HMV failed leak test. Leak rate 10gals/hr
Gulf A	GA05	Offshore Manned Complex	1/1/2015	Integrity Issue. Potential MAH - Major Remedial	Tubing to Annulus Communication	Tubing to A annulus communication. Pressure withing MAWOP
Gulf B	GB02	Offshore NUI	11/1/2015	Managed Integrity Issue - Not Considered MAH	Xmas Tree Actuator	HMV closes in 1min 30secs, compared to the performance standard of 45secs. Valve passes leak test when closed. No considered MAH but needs correcting.

The third level is the Action List. For each issue there is an action list. This report details the actions regarding the tubing to annulus communication in Well GA-05. Note that for each action there is a responsible person and a target date.



7/14/2016

Well integrity Action List

Business Unit Palm Dubai

Field PD Offshore 1

Asset Gulf A

Well No GA05

Outstanding Issues

Issue: Tubing to Annulus Communication

Issue Raised On: 1/1/2015

Status: Integrity Issue. Potential MAH - Major Remedial

Well Type: Gas Producer

Comment: Tubing to A annulus communication. Pressure withing MAWOP

Action no	Action Date	Responsible	Action Status	Description	Approx Closing Date	Closing Date
1	1/1/2015	PBS	closed	Perform leak detection survey to locate source of communication. Leak detection survey confirmed packer has failed.	1/25/2015	5/1/2015
2	1/25/2015	PBS	closed	Raise ORA to mitigate risks whilst awaiting workover. Determine from ORA if well needs to be plugged or can be operated safely. ORA raised and approved. Mitigations in place. Continue to operate well.	2/13/2015	5/1/2015
3	1/25/2015	PBS	open	Prepare justification for workover and establish execution date. If workover not approved either prepare dispensation or plug/kill well.	3/1/2015	

For maintenance and testing, a report of the last test dates. When opened in the database, click on the link to open the last report. This report below shows all assets but like the other reports, it can be filtered as required for the required area or asset.

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Maintenance Test Register

Bussiness Unit Palm Dubai

Field PD Onshore 1

Asset name	Asset Type	Next integrity 6 months Test Date	Link to the last integrity 6 months report	Next integrity annual test Date	Link to the last integrity annual report
Big Red	Onshore Manned Complex	12/1/2015	http://www.iinriw.com/WellSystem/Media/Desert.jpg	6/1/2015	

Field PD Offshore 1

Asset name	Asset Type	Next integrity 6 months Test Date	Link to the last integrity 6 months report	Next integrity annual test Date	Link to the last integrity annual report
Gulf A	Offshore Manned Complex	1/1/2016	http://www.iinriw.com/WellSystem/Media/GA Platform 6M Maint.docx	7/1/2015	http://www.iinriw.com/WellSystem/Media/GA Platform Annual Maint.docx
Gulf B	Offshore NUI	11/1/2015	http://www.iinriw.com/WellSystem/Media/Jellyfish.jpg	5/1/2015	http://www.iinriw.com/WellSystem/Media/Penguins.jpg
Gulf C	Offshore Sub Sea	8/1/2015		8/1/2015	

Any ORA's or dispensations raised are also entered into the system by logging the ORA issue and uploading the ORA or Dispensation. The due dates are then tracked by the database. The report below shows an open ORA for GA-05. A similar report is also available for No Flow Test Dates.

- ORA: Operational Risk Assessment. Required for mitigating the additional risks associated with an impaired safety critical element. The ORA would be in force until the impairment is corrected or a dispensation is raised.

- Dispensation: Operating outside of standards without additional mitigation. Normally a justification of why the risk is acceptable. Normally Temporary.

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Ora Register

Business Unit Palm Dubai

Field PD Offshore 1

Asset Gulf A

	well no	Ora Number	Date	Review Date	Details
1	GA05	ORA-GA-001	2/13/2015	12/31/2015	Well has excessive tbg to A Annulus communication, planned for workover Nover 2015. Mitigations detailed to allow safe operation.

A useful aid to intervention work is the Well Information Summary. Again when opened in the database it gives links to all required information (Well Schematic, WHD Schematic, MAASP sheet, Open Issues, Outstanding Actions etc)

Well Information

Business Unit Palm Dubai

Field	PD Offshore 1	Asset	Gulf A	Well No	GA05
Well Type:	Gas Producer	Estimated reservoir pressure:	3500psi		
Formation:	Jurasic 1	Conductor Status:	No or Minor Anomalies		
Completion Type:	Slant Cased Perforated (25 to 60deg)	Sump ft:	500ft		
Well Bore Schematic Link:	http://www.iinrw.com/WellSystem/Media/GA05_Well_Schematic.pdf				
Well Head Type:	FMC 5K				
Well Head Schematic Link:	http://www.iinrw.com/WellSystem/Media/GA05_Wellhead_Schematic.pdf				
MAASP Schematic Link:	http://www.iinrw.com/WellSystem/Media/GA05_MAASP_Sheet.docx				
DHSV Type:	4.5" SLB TR Max	Minimum I.D:	3.313		
Additional Information :	Depth of restriction : 7000ft				
Platform Information					
Jacket Type:	8 Leg	Deck Capacity:	2T/m3		
Crane Capacity:	10T	Additional Load Suitability:	200T		
Next Maintenance Date:	1/1/2016	Next No Flow Test Date:			
Last Maintenance Link:	http://www.iinrw.com/WellSystem/Media/GA_Platform_8M_Maint.docx				
Last No Flow Link:					
Open ORA Link:	http://www.iinrw.com/WellSystem/Media/GA05_ORA.pdf				
Open Dispensation Link:					
Outstanding Issues					

Issue Tubing to Annulus Communication

Date: 1/1/2015

Status Integrity Issue, Potential MAH - Major Remedial

Comment: Tubing to A annulus communication. Pressure withing MAWOP

Action no	Action Date	Responsible	Action Status	Description	Approx Closing Date	Closing Date
1	1/1/2015	PBS	closed	Perform leak detection survey to locate source of communication. Leak detection survey confirmed packer has failed.	1/25/2015	5/1/2015
2	1/25/2015	PBS	closed	Raise ORA to mitigate risks whilst awaiting workover. Determine from ORA if well needs to be plugged or can be operated safely. ORA raised and approved. Mitigations in place. Continue to operate well.	2/13/2015	5/1/2015
3	1/25/2015	PBS	open	Prepare justification for workover and establish execution date. If workover not approved either prepare dispensation or plug/kill well.	3/1/2015	

The database will soon be able to provide statistical analyses of the types and frequency of anomalies, which in itself can be used for moving to a risk based maintenance programme. Obviously this requires several years of data to become of value.

We are not just a company with advanced tools, our goal is to provide technical support for all your Well Integrity needs.

We would be happy to discuss further at your convenience.

A photograph of three construction workers wearing hard hats and safety gear, working on a steel structure. The image is overlaid with a semi-transparent red filter. The workers are positioned in the lower half of the frame, with the steel beams and cables of the structure extending upwards and outwards.

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