



CORVELLE CONSULTING

What's Up with Saskatchewan Measurement?




March 2016



Corvelle Drives Concepts to Completion



CAPP
Canadian Association of
Petroleum Production Accounting



- Fire exits
- Washrooms

Corvelle Drives Concepts to Completion

2 **CORVELLE CONSULTING**

Clay Long Biography

- Partner in Corvelle Consulting
- Senior IT Management Consultant and Project Manager
- Focus on the oil and gas industry
- Specializes in:
 - program management
 - project management
 - facilitation
- Led initiatives in:
 - strategic planning
 - software development & implementation
 - major RFP creation & execution




Corvelle Drives Concepts to Completion

3 **CORVELLE CONSULTING**

Yogi Schulz Biography

- Partner in Corvelle Consulting
- Information technology consulting
- EPAP implementation and operation
- Relevant development work:
 - Led EPAP at AER
 - Led PSAP at AER
 - Led measurement at ECON
 - Leading EPAP at ECON




Corvelle Drives Concepts to Completion

4 **CORVELLE CONSULTING**

Presentation Outline

- Introduction
- Background
- Directive PNG017:
 - Measurement Requirements for Oil and Gas Operations
- Directive PNG076:
 - Enhanced Production Audit Program (EPAP)
- Guideline PNG028:
 - Initiating and Operating the Enhanced Production Audit Program (EPAP)
- Discussion



Corvelle Drives Concepts to Completion

5 **CORVELLE CONSULTING**

Corvelle Consulting Profile

- Consulting firm focused on the oil & gas industry
 - Experienced with oil & gas spanning more than 20 years
 - Implemented systems for field data capture, production accounting, financial accounting, public data management
 - Led development of EPAP for the then ERCB and now at ECON
 - Leading EPAP implementation projects
- Management consulting, data management & IT
 - Project leadership
 - Process review & redesign
 - Data quality & integration
 - Facilitation

Corvelle Drives Concepts to Completion

6 **CORVELLE CONSULTING**



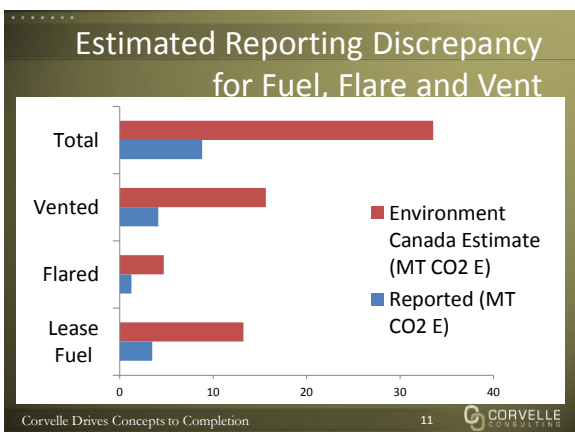
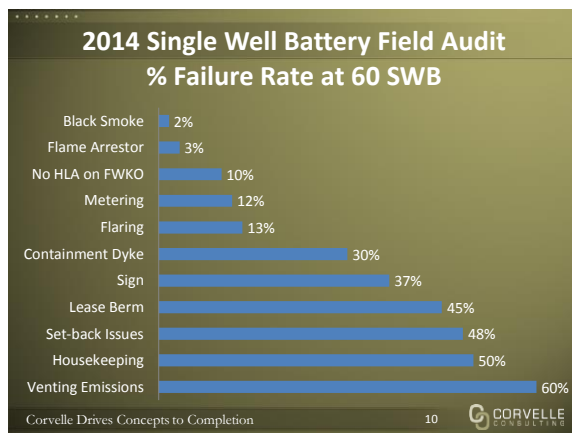
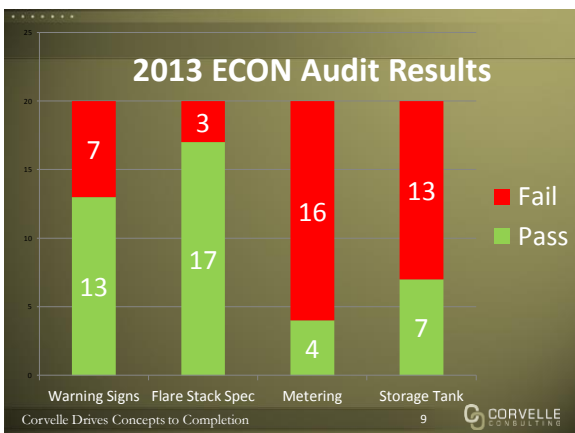
Background

Corvelle Drives Concepts to Completion

Measurement Issues

- ❑ OGCR requirements outdated and lack detail
- ❑ Some companies operate as if there are no requirements
- ❑ Increasing pressures for environmental, health and safety improvements
- ❑ Recent audit results confirm operator noncompliance
- ❑ Improper measurement and reporting created gaps in production data

Corvelle Drives Concepts to Completion




Corvelle Drives Concepts to Completion

CORVELLE CONSULTING

Directive PNG017: Measurement Requirements for Oil and Gas Operations



Corvelle Drives Concepts to Completion **CORVELLE CONSULTING**

New Requirements for Saskatchewan

- Replace provisions in The Oil and Gas Conservation Regulations, 2012
- Petrinex functionality has been expanded
- Explicit sampling and analysis requirements throughout Directive PNG017
- Measurement points identified
- Measurement schematics

Corvelle Drives Concepts to Completion 14 **CORVELLE CONSULTING**

Major Differences Between SK and AB

- Saskatchewan has facility subtypes specific to Heavy Oil
- Condensate produced at a gas well
- Royalty triggers
- Sulphur requirements do not apply

Corvelle Drives Concepts to Completion 15 **CORVELLE CONSULTING**

Implementation of New Requirements

- Directive PNG017 effective April 1, 2016
- Measurement exemptions rescinded
- Existing facilities must become fully compliant
- New facilities must be fully compliant


Corvelle Drives Concepts to Completion 16 **CORVELLE CONSULTING**

Available Measurement Information and Resources

- Directive PNG017
- FAQs about Directive PNG017
- Compliance Reporting Tool
- Ministry of the Economy Website
 - <http://economy.gov.sk.ca/Directive-PNG017>
- ECON Measurement Committee
 - e-mail: directive17econ@gov.sk.ca
- Petroleum and Natural Gas (PNG) Support Desk
 - e-mail: png_support@gov.sk.ca

Corvelle Drives Concepts to Completion 17 **CORVELLE CONSULTING**

Any chance I could get shorter, easier to understand measurement instead?



Corvelle Drives Concepts to Completion 18 **CORVELLE CONSULTING**



Directive PNG076: Enhanced Production Audit Program (EPAP)




Corvelle Drives Concepts to Completion



EPAP Goals

- Shift how operators demonstrate compliance
- Raise level of assurance over Directive PNG017 compliance
- Encourage continuous improvement

Corvelle Drives Concepts to Completion



Major EPAP Processes


Monthly CAI Report

- Filter CAI items
- Prioritize CAI items
- Investigate CAI items
- Remediate CAI items
- Document Results

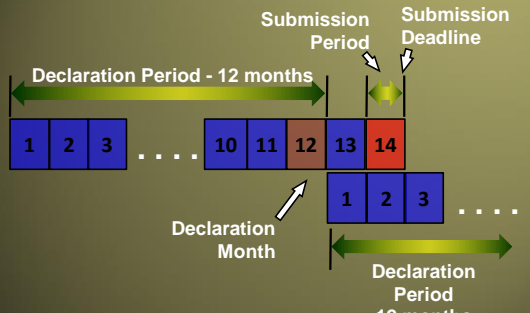
Annual Declaration

- Evaluate Controls
- Compile Results
- Plan Remediation
- Review with Executives
- Sign Declaration *Confidentially*


Corvelle Drives Concepts to Completion



EPAP Declaration Timeline



Corvelle Drives Concepts to Completion




SK EPAP Declaration Differences

5. I/We recognize that Compliance Assessment Indicator (CAI) items on the CAI Report provide useful information to assess compliance with measurement and reporting requirements.
6. I/We recognize that the Regulator has recently introduced *Directive PNG017: Measurement Requirements for Oil and Gas Operations* that describes measurement requirements in more detail.
7. I/We have committed appropriate resourcing to ensure measurement and reporting remediation at our facilities for the following one-year periods:

Period ending on March 31, 2017	25% implemented
Period ending on March 31, 2018	50% implemented
Period ending on March 31, 2019	75% implemented
Period ending on March 31, 2020	100% implemented


Corvelle Drives Concepts to Completion



Implementation of New Requirements


- Directive PNG076 effective April 1, 2016
- Trial declaration period from April 1, 2016 to November 30, 2016
- Your Declaration month has been emailed to your EPAP Change Leader from PNG Support

Corvelle Drives Concepts to Completion




Available EPAP Information and Resources

- ❑ Directive PNG076
- ❑ Guideline PNG028
- ❑ FAQs about Directive PNG076
- ❑ Ministry of the Economy Website
 - www.economy.gov.sk.ca/EPAP
- ❑ Petroleum and Natural Gas (PNG) Support Desk
 - e-mail: png.support@gov.sk.ca


Corvelle Drives Concepts to Completion 25 




“We’re going to parachute in and conduct a surprise evaluation of controls, but I want to keep the whole event low key.”




Guideline PNG028: Initiating and Operating the Enhanced Production Audit Program (EPAP)



Corvelle Drives Concepts to Completion 


Major EPAP Operation Processes

- ❑ Design Choices for Operating EPAP
- ❑ Annual EPAP Declaration
- ❑ Ongoing Remediation Arising from Evaluations of Controls
- ❑ Monthly CAI Report
- ❑ Ongoing Regulator-initiated Workflows

Corvelle Drives Concepts to Completion 28 


EPAP Initiation Project Tasks

- ❑ Assign project manager and project resources
- ❑ Conduct an initial EPAP assessment
- ❑ Brief managers and senior executives
- ❑ Build awareness of operator staff
- ❑ Develop project plan
- ❑ Execute project plan
- ❑ Estimate of annual EPAP operation effort

Corvelle Drives Concepts to Completion 29 

Acceptable Practices

- ❑ PNG028 describes examples of acceptable practice that achieves EPAP compliance
- ❑ PNG076 provides significant latitude for operator professional judgment
- ❑ Operators may adopt other acceptable practices in the operation of EPAP

Corvelle Drives Concepts to Completion 30 

Reasonable Understanding

I think we have enough information now, don't you?

That's plenty. By the time we add an introduction, a few illustrations and a conclusion, it will look like a management report.

All we have is one "fact" you made up.

Corvelle Drives Concepts to Completion 31 CORVELLE CONSULTING

Thinking Creatively

Corvelle Drives Concepts to Completion 32 CORVELLE CONSULTING

Conclusion

Corvelle Drives Concepts to Completion CORVELLE CONSULTING

Conclusion

- ❑ Saskatchewan has improved definition of measurement requirements
- ❑ Saskatchewan is implementing EPAP
- ❑ Many resources available to help

Corvelle Drives Concepts to Completion 34 CORVELLE CONSULTING

Discussion

Corvelle Drives Concepts to Completion CORVELLE CONSULTING

What's Up with Saskatchewan Measurement?

<p>Yogi Schulz (403) 860-5348 YogiSchulz@Corvelle.com</p>	<p>Clay Long (403) 710-6980 ClayLong@Corvelle.com</p>
<p>Mark Perrin (403) 613-6987 MarkPerrin@Corvelle.com</p>	<p>Mel Miners (403) 200-5544 MelMiners@Corvelle.com</p>

Corvelle Consulting
300, 400 - 5 Ave. S.W.
Calgary, Alberta T2P 0L6
www.corvelle.com
www.epapsolutions.com


Corvelle Drives Concepts to Completion 36 CORVELLE CONSULTING



Available Resources




Corvelle Drives Concepts to Completion

CAPP Resources

- [Application of Gas Oil Ratio \(GOR\) and Gas In Solution \(GIS\) Factors](#)
- [Actual Gas Production Reporting](#)
- [Actual Hydrocarbon Liquid Production Reporting](#)
- [Actual Water Inventories Reporting](#)
- [Actual Water Production Reporting](#)
- [Application of Effluent Correction Factor \(ECF\)](#)
- [Estimated Production Reporting \(Gas, Liquid, Water\)](#)
- [Gas Equivalent Factor \(GEF\) Application and Gas Equivalent \(GE\) Accuracy](#)
- [Hydrocarbon Liquid Disposition and Receipt Reporting](#)
- [Hydrocarbon Liquid Inventories Reporting](#)
- [Maintaining an Audit Trail](#)
- [Proration Factors](#)
- [Water Disposition and Receipt Reporting](#)
- [Well Production Hours Reporting](#)

Corvelle Drives Concepts to Completion

38 




AER Resources - 1

- ❑ Directive 017: Measurement Requirements for Oil and Gas Operations
 - <https://www.aer.ca/rules-and-regulations/directives/directive-017>
- ❑ FAQs about Directive 017
 - https://www.aer.ca/documents/directives/Directive017_FAQ.pdf

Corvelle Drives Concepts to Completion


39 




AER Resources - 2

- ❑ Enhanced Production Audit Program
 - <https://www.aer.ca/compliance-and-enforcement/enhance-production-audit-program>
- ❑ AER Enhanced Production Audit Program on PETRINEX: Compliance Assessment Indicators (CAI)
 - www.aer.ca/documents/projects/epap/EPAP_ComplianceAssessmentIndicators.xlsx
- ❑ EPAP Frequently Asked Questions
 - <https://www.aer.ca/compliance-and-enforcement/epap-frequently-asked-questions>

Corvelle Drives Concepts to Completion


40 




AER Resources - 3

- ❑ Manual 011: How to Submit Volumetric Data to the AER
 - Manual is guide for industry on understanding how data are submitted to the AER through PETRINEX
 - www.aer.ca/documents/manuals/Manual011.pdf
- ❑ Questionable Fuel Volume - Facility Spreadsheet
 - Calculates typical fuel volume for applicable facility subtypes
 - www.aer.ca/documents/projects/epap/EPAP-QuestionableFuelVolume-Facility.xls

Corvelle Drives Concepts to Completion

41 



Saskatchewan ECON Resources - 1

NOTICE TO ALL OPERATORS

Initial Version of new Directive PNG017: Measurement Requirements for Oil and Gas Operations


– <http://www.economy.gov.sk.ca/Directive-PNG017>

NOTICE TO ALL OPERATORS

Future Changes to Oil and Gas Measurement Requirements and Implementation of EPAP in Saskatchewan

– <http://economy.gov.sk.ca/EPAP>


Corvelle Drives Concepts to Completion


42 



Saskatchewan ECON Resources - 2


- Directive R01: Volumetric, Valuation and Infrastructure Reporting Petrinex:
 - Business Associate (BA) Codes
 - Petrinex Compliance
 - Facility Information
 - Gas Valuation
 - Oil Valuation
 - Royalty Tax Payer (RTP)
 - Submission to Petrinex
 - Volumetric Submissions
 - Waste Plant Reporting
 - Well Information and Status Changes


Corvelle Drives Concepts to Completion 43 



Petrinex Resources

- EPAP on Petrinex Change Leader Meeting #1, June 11, 2014
 - Includes discussion of workflow and CAI Report screens on EPAP system
 - www.petrinex.ca/PDFs/Presentations/140611_EPAP_Change_Leader_Meeting_1.pdf
- EPAP Workflow Job Aid
 - www.petrinex.ca/PDFs/Docs/EPAP_Workflow_Job_Aid.pdf
- Petrinex current tips – includes EPAP changes
 - <http://www.petrinex.ca/92.asp>
- Send us your Petrinex Enhancement Suggestions
 - <http://www.petrinex.ca/42.asp>


Corvelle Drives Concepts to Completion 44 



IMG Resources

- IMG offer these three documents:
 - <https://industrymeasurementgroup.ca/>

Measurement Manual
Table of Contents
Revisions
Hardcopy Version(4Mb)
Field Msmt. Handbook
Table of Contents
Revisions
Hardcopy Version(1Mb)
Msmt. Control Assessments
Table of Contents
Revisions
Hardcopy Version(136 k)

Corvelle Drives Concepts to Completion 45 

Corvelle Consulting Resources

- EPAP Solutions
 - <http://www.epapsolutions.com>
- Free EPAP resources
 - <http://www.epapsolutions.com/more-information/operator-2>
- EPAP Frequently Asked Questions
 - <http://www.epapsolutions.com/more-information/operator>

Corvelle Drives Concepts to Completion 46 

Directive PNG017 Table of Contents

1. Standards of Accuracy
2. Calibration and Proving
3. Proration Factors, Allocation Factors and Metering Difference
4. Gas Measurement
5. Site-specific Deviation from Base Requirements
6. Non-Heavy Oil Measurement
7. Gas Proration Batteries
8. Gas and Liquid Sampling and Analysis

Corvelle Drives Concepts to Completion 47 

Directive PNG017 Table of Contents

9. Cross-Border Measurement
10. Trucked Liquid Measurement
11. Acid Gas and Sulphur Measurement
12. Heavy Oil Measurement
13. Condensate and High Vapour Pressure Liquid Measurement and Reporting
14. Liquid Measurement
15. Water Measurement

Corvelle Drives Concepts to Completion 48 