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ESP KPI Tracker Update

Jan 5 2026

Project Timeline & Key Milestones

Feb 2023 Kickoff → Feb 2025 Prod → Jan 2026 Vendors → Mar 2026 Complete

- Delays:
  - Resourcing constraints
  - Shifting organizational priorities
  - UAT testing extensions
  - Team reassignments

- Upcoming Milestones:
  - Vendor onboarding: Jan 2026
  - Project completion: Mar 2026

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What's Been Completed & What's Next

- Completed Work
  - Core UI, database and ETL delivered in Feb 2025
  - Data optimized and reporting dashboards launched
  - Change requests addressed (this will be expanded on in later slides)
- Current Focus
  - Integration with external vendors
  - Ongoing user adoption and training
  - Visualization development
- Upcoming Tasks
  - Next round of visualizations
  - System stabilization and scaling

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Roadmap (OLD SLIDE – WG – See New Slide 5)

- What is happening in Q1?
  - User adoption and integration
    - Training and User manual
      - ENI Eng, Field, Prod Eng and vendors – Jan
      - Compliance and utilization – PWA and DB
  - 2026 quote, design and everything is loaded into ESP KPI
  - Vendor access and everything approved Jan 1 – actually entering data
- Highlight key milestones
- Key Transition Milestones:
  - User training
  - Data backfill completion
  - Change management actions
  - Stakeholder communications

Q1 2026: Transition & Go-Live Activities

- Focus:
  - Full user adoption & system integration
  - Training completion & user manual distribution
  - Onboard ENI Eng, Field, Prod Eng, vendors (Jan)
  - 2026 quotes/design/data loaded into ESP KPI
  - Vendor data entry begins Jan 2026

- Key Transition Milestones:
  - Finish data backfill
  - Execute change management plan
  - Compliance & utilization tracking live (PWA/DB)
  - Stakeholder communications sent

2025 Development & Testing Achievements

- User Acceptance Testing (UAT)
  - Completed **6 sessions** with internal user groups
  - Logged and implemented **~50 enhancements**

- Beta Testing
  - Conducted **3-week beta program**
  - Logged and implemented **~25 additional enhancements**

2025 Development Achievements & Demo

- External-Facing Application Security
  - Secured PWA with **PingID** (CNRL standard sign-in)
  - Preserved data integrity via **automated form locking** for vendors
  - Restricted form access and editability by **user role**

- User Experience Improvements
  - Streamlined workflow for **adding equipment installs** to a Production Period
  - Added **data-loss prevention** features with easy rollback options

    https://devapp.cnrl.com/espkpitracker/
    https://desktop.pingone.com/cnrl/Selection?cmd=selection

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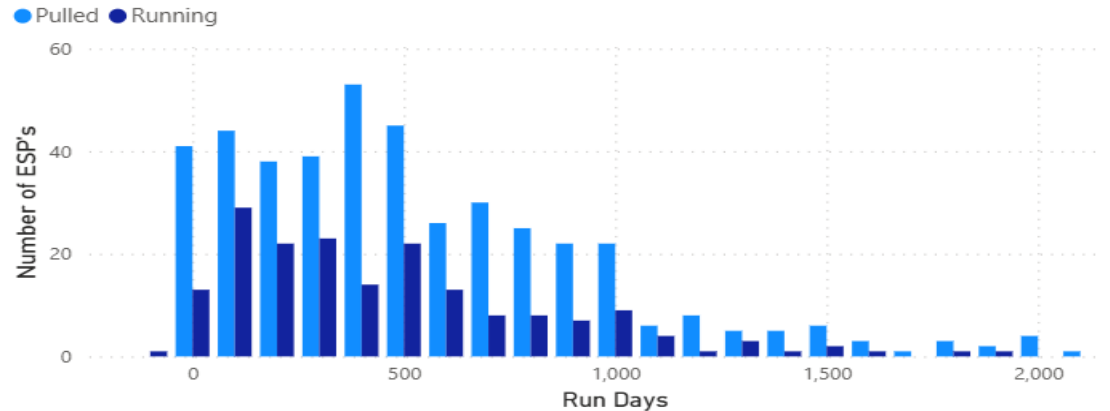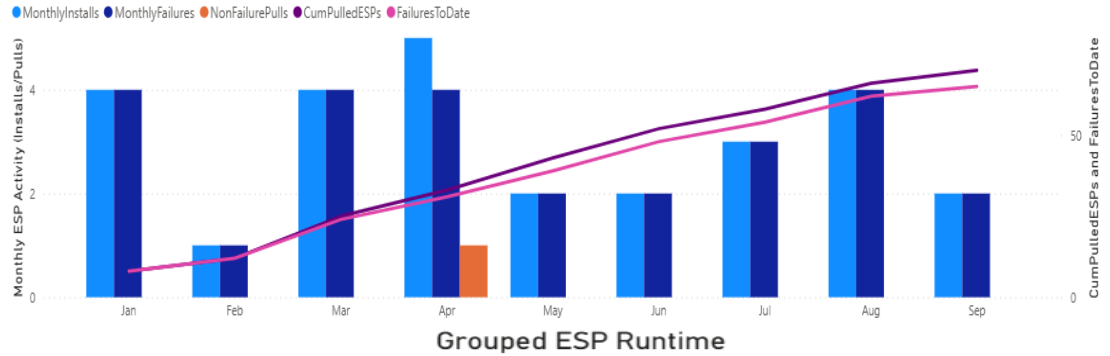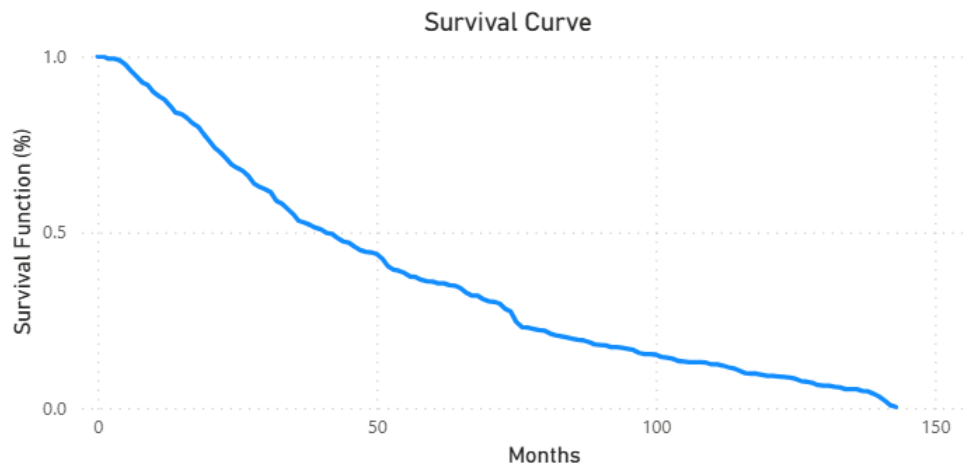# 2025 Features & Demo (Part 2)

Erika

- File Downloading Functionality
  - Added **printable versions of forms** for offline data capture
  - Standardized layout to align with PWA flow

- Advanced Admin Functions
  - Enabled **front-end management of dropdown lists**
  - Eliminated need for IS involvement in routine updates

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2025 Data Integration Achievements

Emily

- ETL Status
  - Complete through **October 9th**
  - Supporting Data Added
    - Part number descriptions
    - CNRL equipment inventory
- Data Cleanup
  - Validated and standardized spreadsheet data before and during ETL
  - Corrected nonstandard values to ensure consistency
- Reporting Views
  - KPI tracker views available for dashboard creation
  - Collaborated with Cam and Shane to resolve data inconsistencies

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Dashboard Features

- Monthly Reporting
  - WKO/Equipment costs
  - Activity compared to budget
- Reliability Benchmarking
  - Run life
  - Reliability stats
  - Survival curve
- Leading ESP Failures
  - Component
  - Vendor
  - Cause of failure

Visuals Overview

Survival Curve

Pull/Failure Summary

Failure Cause	Historical Total	2025
Wellbore Completion Failure	10	
Waiting on DIFA Inspection	47	11
Unknown Mech Damage (High DLS, Well Debris)	3	
Unknown	34	3
Undetermined (Failed after DeadHead / O-Ring Degradation)	3	
Under Investigation	82	35
Thermal Cycling	9	
Technology Limitation	2	
Scale	3	3
Pump Vibration	2	
Procedural Breakdown	1	
Preemptive Pull	2	
Power Surge-Lightening	1	
O-Ring Material Breakdown	1	
Operating Conditions Outside of Specifications	1	
Normal or Expected Wear-and-Tear	7	
Non-ESP Related Failure	1	
Motor Temperature Exceeded Design Max	3	
Motor Oil breakdown, low lubricity, Coking present	10	4
Mechanical Damage to Cable	9	1
Manufacturing Defect	6	
Improper Data Used in Design / Selection	1	
Harmonics due to cable damage	3	
Failure or Improper Sand Control System	9	
Dog Leg Severity	3	
Currently Unknown	31	4
Cable Damage Due to Clamps	13	
1	315	9
Total	**612**	**70**

Runlife Summary Update

Avg Run Time - Failed	1,870.53
Avg Run Time - Pulled	586.68
Avg Run Time - Running	535.68
ESP Target Run-time (days)	1,000.00
Longest Running ESP (days)	4,344.00
MTTF (days)	1,870.53
MTTP (days)	586.68
Total	

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Challenges – Report Development

- Dashboard
  - Improving small details on the dashboard
    - Linking slicers to correct visualizations without affecting others
  - Making dashboard more intuitive for users

- Data
  - Data is not up to date for everything, so it is hard to see if the dashboard and background calculations are working

- Time
  - Gaining experience using PowerBi takes extra time

Next Steps – Report Development

- Refine and publish current dashboard
  - Add budget info to applicable charts

- Current dashboard suggestions
  - Shroud reliability monthly update dashboard
  - Be able to select a certain well and give all history of ESP data such as type/run time/install and pull dates/failure reason

- Continue to make more dashboards based on
  - ESP tracker excel sheet
  - Suggestions from others

CNRL User Adoption Update

Administrator
Has read/write access to all internal/external forms and production periods.
Business Approver: shanewo, jameski

E & I Representative
Has read/write access to commission/startup, troubleshooting, pull forms. Has read access to all other internal/external forms. Cannot create new production periods.
Business Approver: shanewo, jameski

Field Engineer
Has read/write access to all internal/external forms. Has read access to quote form. Cannot create new production periods.
Business Approver: shanewo, jameski

Production Engineer
Has read/write access to all internal/external forms and production periods.
Business Approver: shanewo, jameski

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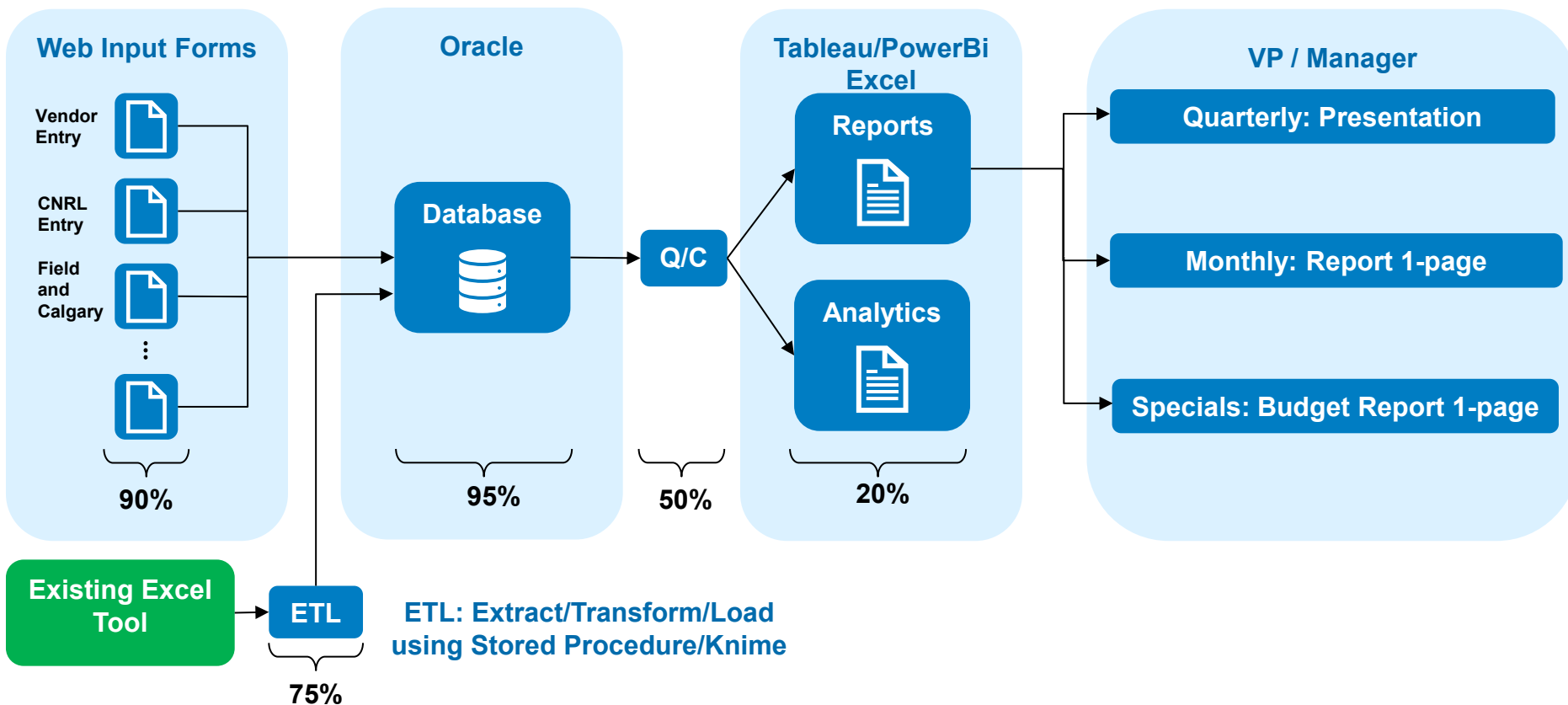# Data (OLD SLIDE – WG – See New Slide 16)

Shane

- Business rules

- Backfilling

- Data Scope

  - Acquire and integrate key operational and KPI data

  - Clean and validate data for accuracy and completeness

  - Apply business rules for consistent reporting

  - Backfill historical records as required

  - Ensure data readiness for dashboards and visualizations

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Data Scope & Quality Initiatives

- Acquire & integrate operational/KPI data

- Clean and validate for accuracy/completeness

- Apply business rules for consistency

- Backfill historical records as needed

- Ensure dashboard/reporting readiness

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2026 Next Steps: Web Input Forms & Expansion

Wayne

- Commercial adoption & rollout

- Continuous improvement from vendor/field feedback

- Product evolution and feature growth
  - Expand visualization and reporting capabilities
  - Look at mobile access and enhanced input forms
  - Investigate predictive analytics and automation

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ESP KPI Tracking Project –Feb 2025

Web Input Forms
- Vendor Entry
- CNRL Entry
- Field and Calgary

90%

Oracle

Database

95%

Q/C

50%

Tableau/PowerBi Excel

Reports

Analytics

20%

VP / Manager

Quarterly: Presentation

Monthly: Report 1-page

Specials: Budget Report 1-page

Existing Excel Tool → ETL

ETL: Extract/Transform/Load using Stored Procedure/Knime

75%

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