
# Use of a Work Cell Model to Successfully Manage Large Projects

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# The Problem

A busy lab that processes thousands of samples through it's organics extraction lab, needs to accommodate another thousand extractions a week for an indefinite period of time.

# The Premise

- Additional trained and qualified personnel not readily available for hire
- Additional space not available or practical
- All quality systems and expectations must be maintained

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- “Normal” workload must be maintained
- Client specific request for 72 hour TAT on group submission must be met.

# The Solution

Borrow practices and concepts from Lean Manufacturing

- Work Cells
- Cross Functional Teams

# What is a Work Cell?

A manufacturing system or an arrangement of resources in a manufacturing environment to improve quality and efficiency.

# What is a Work Cell?

While the lab is not strictly a manufacturing system there are concepts that apply

- Improve efficiency
- Reduce lag time
- Eliminate waste
- Improve Quality

# Concept

Establish a work cell (manufacturing line) that would operate within the larger lab and could focus exclusively on this client's project.

- Meet 72 TAT requirement
- Meet quality objectives
- Operate without disruption to other lab operations

# Steps of the Process

- Sample Receipt
- Sample Login
- Sample Storage
- Sample Scheduling and Retrieval
- Perform Sample Extraction(s)


# Steps of the Process

- Deliver Sample Batches to Analytical Groups
- Instrument Scheduling
- Calibration and Analysis
- Process Data
- Overcheck and report

# Work Cell Process

- Reduce the number of steps in processing
- Eliminate sample holding or “inventory” areas
- Close gaps between sample receipt, sample extraction, sample analysis and reporting of results


# Work Cell Process

- Sample Receipt/Login
- Perform Sample Extractions
- Deliver Samples for Analysis
- Process Data
- Overcheck and report

# Work Cell Process

Sample Receipt/Login

- Samples pre-logged into LIMS system
- Sample Administration employee dedicated to separating 25-40 coolers from rest of shipment
- Samples labeled and placed on carts for direct transport to lab

# Work Cell Process

Perform Sample Extraction

- Samples moved straight to extraction lab bypassing storage
- Cross-functional team of technicians perform extractions (several) on 2nd and 3rd shift
- Entire day's receipt extracted within first 24 hours

# Work Cell Process

Deliver Samples for Analysis

- Close coordination between extraction technician and chemist for exact batches being extracted
- First sets of extracts placed on instruments late into 3rd shift of first 24 hours
- Multiple instruments for each discipline dedicated to this client's project

# Work Cell Process

Process Data/Overcheck/Report

- Cross-functional team of chemists
- Team worked across the span of 24 hours
- Individuals able to perform several tasks each so could adjust to accommodate work flow

# Results

- Thousands of samples processed for multiple analytical parameters
- >99% of samples processed and reported within 72 hour benchmark
- One of analytical parameters was alkyl PAH and biomarker analysis, a traditionally higher end, longer TAT analysis

# Reasons for Success

- Use of Work Cell Model
- Single Client Service Representative (CSR) on lead with client
- Management team had huddles daily, including CSR to discuss resources
- Communication


# Questions ?