Chemical Tracking– Project Overview
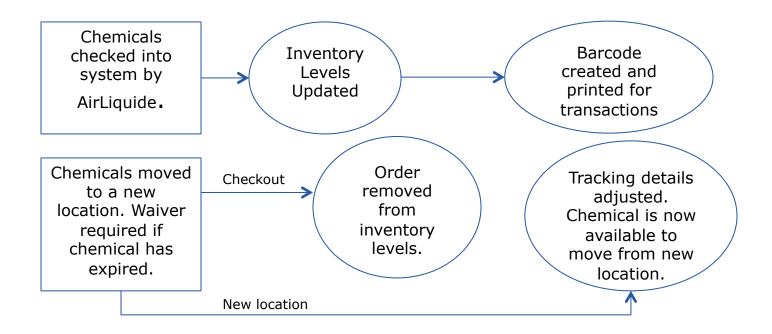
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  – 10/6/2011

Project Goals

> To allow easy access to current inventory levels of all chemicals used at X-Fab Texas

> To allow detailed tracking of where all chemicals currently are

> To allow easy creation of custom barcode labels for all chemicals
  – Barcode scanners used to quickly interact with system

> To allow greater control over which chemicals go where, to reduce human error.

> To integrate with the Solomon financial package, to allow chemicals to automatically be reordered and processed into system

> To setup chemical check-in terminals at important locations

> To train staff in usage of system

Technical Description

> Web tools have been created using ASP.NET with C# backend.

> Web tools hosted locally in Lubbock

> .NET V3.5

> Database backend is a Microsoft SQL Server

> Barcode scanners set to key-wedge mode to allow easy interaction with ASP web tools

System Flow

```
┌─────────────────┐         ┌───────────────┐         ┌───────────────┐
│ Chemicals       │         │   Inventory   │         │    Barcode    │
│ checked into    │───────▶ │    Levels     │───────▶ │  created and  │
│ system by       │         │   Updated     │         │  printed for  │
│ AirLiquide.     │         │               │         │ transactions  │
└─────────────────┘         └───────────────┘         └───────────────┘

┌─────────────────┐   Checkout   ┌───────────┐      ┌───────────────┐
│ Chemicals moved │────────────▶ │   Order   │      │ Tracking details │
│ to a new        │              │  removed  │      │   adjusted.    │
│ location. Waiver│              │   from    │      │ Chemical is now │
│ required if     │              │ inventory │      │  available to  │
│ chemical has    │              │  levels.  │      │ move from new  │
│ expired.        │              └───────────┘      │   location.    │
└─────────────────┘                                 └───────────────┘
        └──────────────── New location ─────────────────────▲
```

Barcode

Links to transaction Table. XF-ON is Transaction table primary index

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Databases
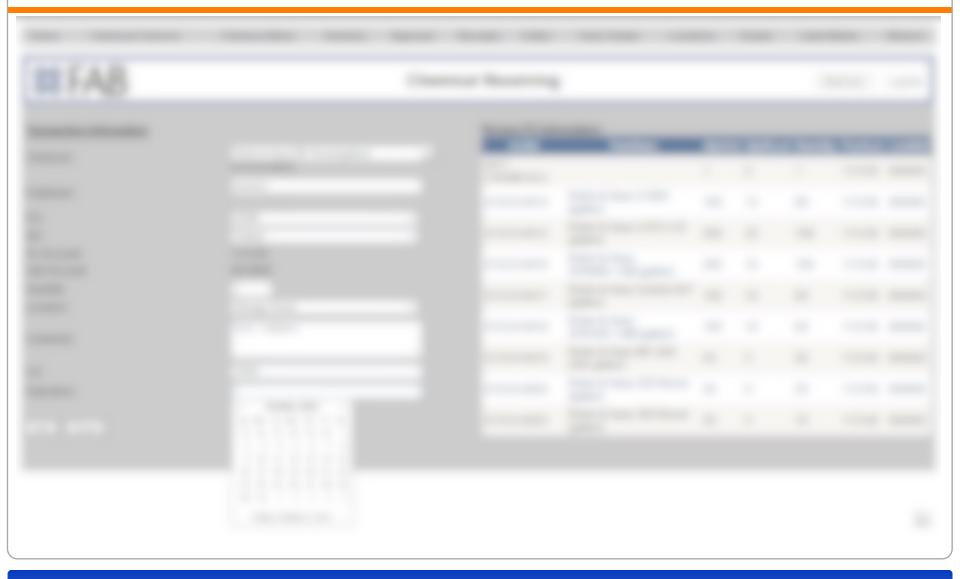
> All tracking and inventory data is stored in separate database
  - This allows the system to be independent of the financial system
> Financial system is in separate database
  - Data from chemical tracking database is processed into the financial system
  - Chemical system accesses inventory data set in financial system.

Web-Tools

> 11 different web tools have been created

- Chemical Check-In: Used at initial check-in to input order information into system
- Chemical Move: Used to move chemical order between different locations or to check-out
- Chemical Inventory: Used to see inventory levels and information related to individual chemicals.
- Order Approval: Review chemical orders before processing into Solomon.
- Receipts: Allows AirLiquide to see transaction information while filtering out sensitive X-Fab data
- Transaction Viewer: Scan barcode and see summary of chemical order
- Editor: Edit a transaction in the event of mistake
- Location Editor: Add or edit chemical locations
- Data Viewer: Quickly view various reports
- Label Maker: Design or reprint barcode labels quickly
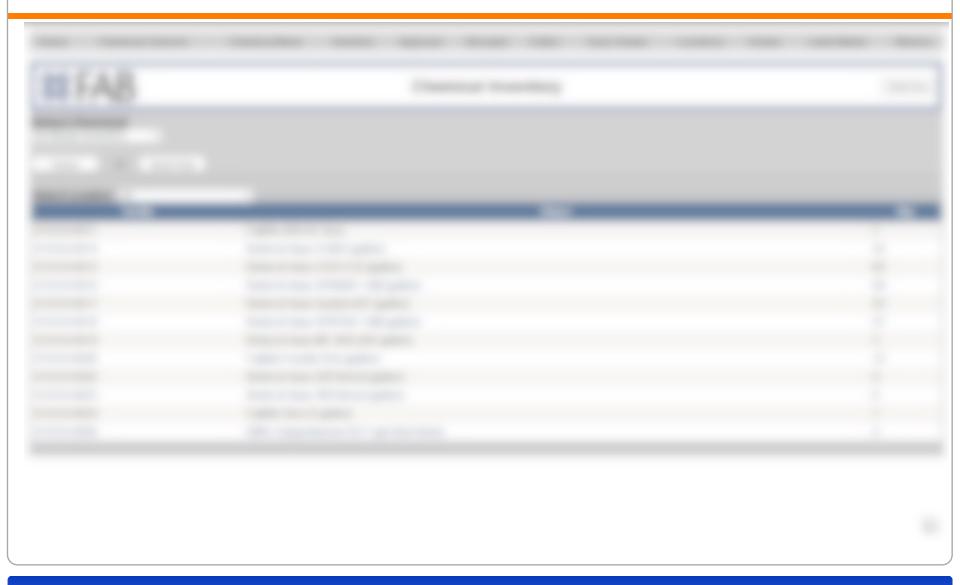- Waivers: Approve or deny requested expiration waivers
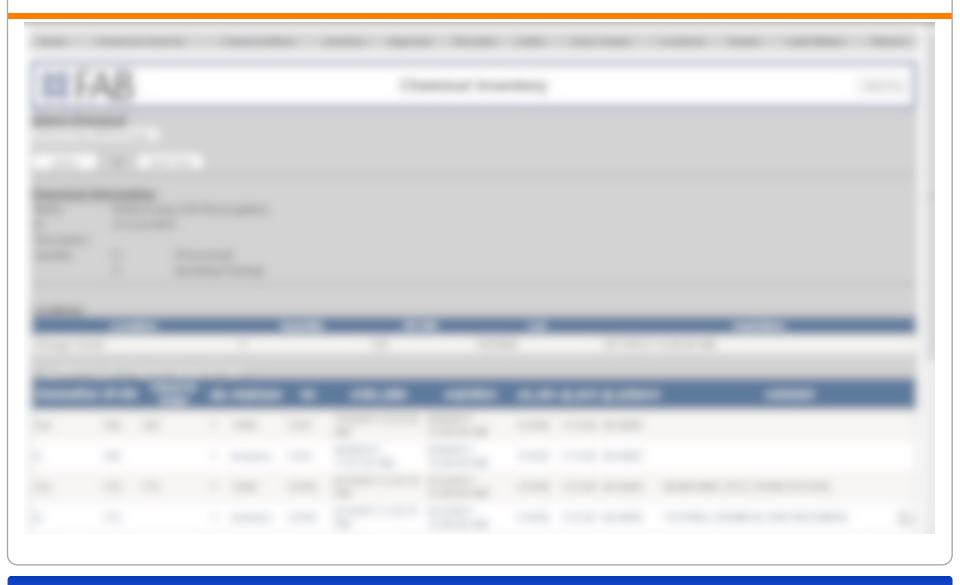
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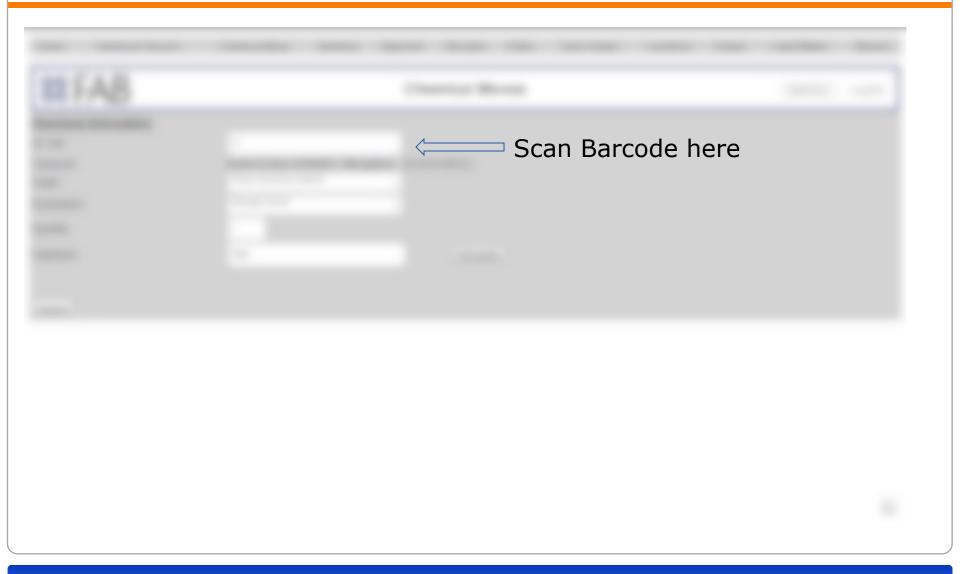
Chemical Check-In

Chemical Move

Scan Barcode here
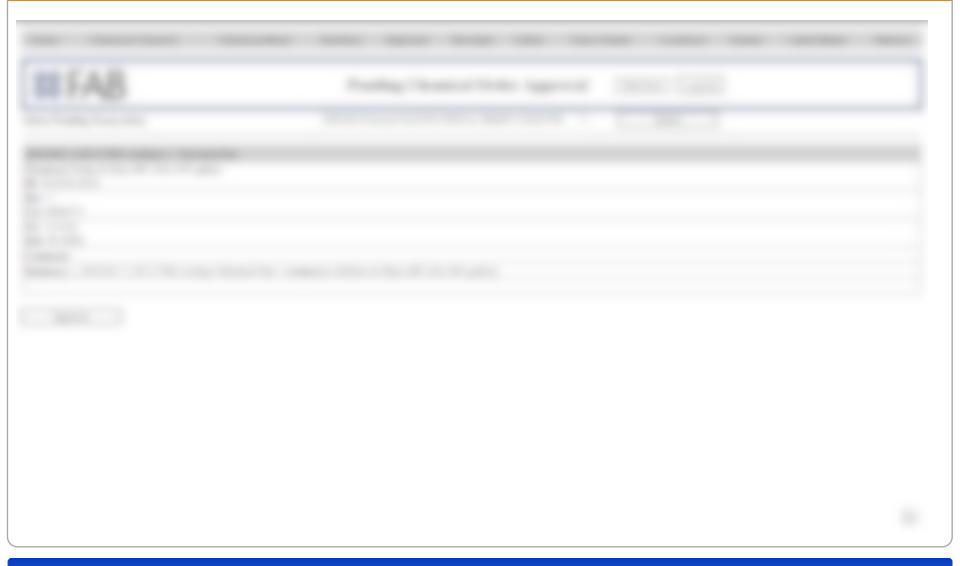
Inventory: Quick View
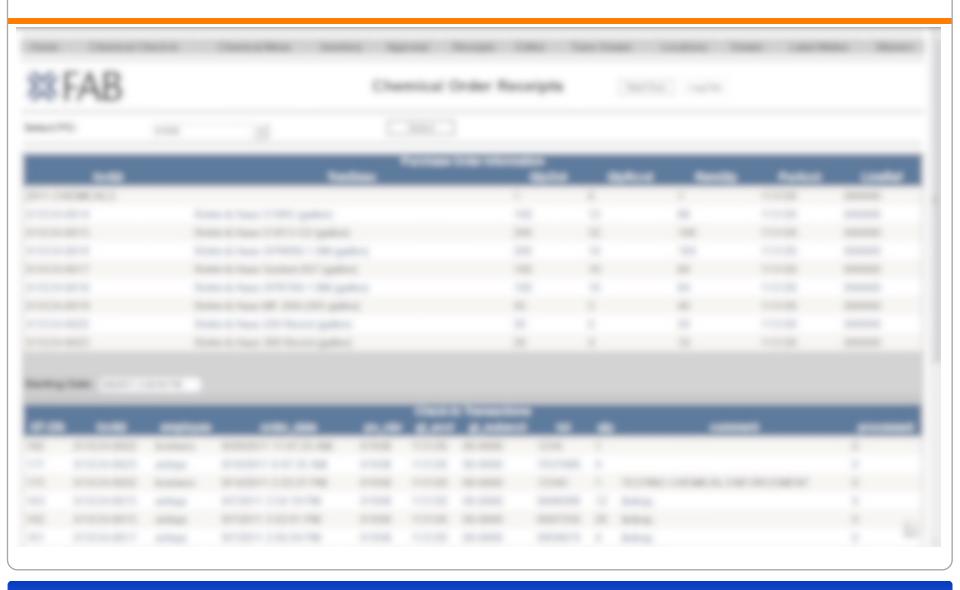
Chemical Inventory: Selected Chemical

Order Approval

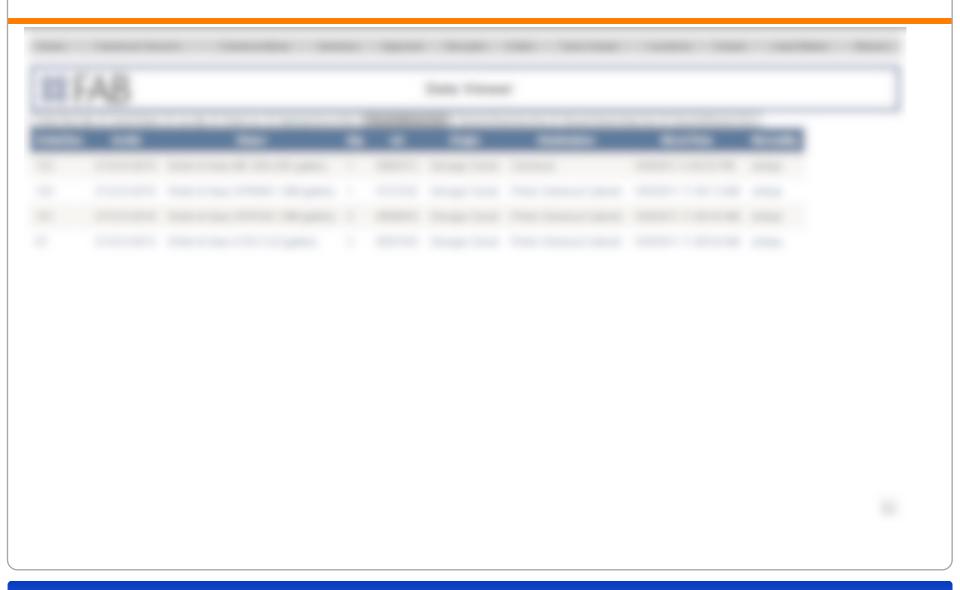# Chemical Receipts

Editor

Transaction Viewer

Location Editor

Data Viewer

Label Maker

Waivers

Project Summary

> Project Currently In Progress
> Currently in Beta use in Lubbock
> Stable use ~2mo
> Development time: TBA
> System is new to X-Fab
> Developers: 1
> Have trained AirLiquide personnel in usage of system

> To Do:
  – Integrate with Solomon
  – Install remaining check-in terminals
  – Train remaining personnel