

Colorado Department of Health & Environment



OIL & GAS MINOR SOURCE AIR PERMITTING KAIZEN EVENT

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**Colorado Department
of Public Health
and Environment**



Introduction



- What is Kaizen
- What are the Benefits
- What Kaizen Does Not Do
- Details of the Kaizen Event at APCD

What is Kaizen



- Japanese philosophy of continual improvement
- Lean management tool intended to improve the efficiency of any process by eliminating waste

What Are the Benefits



- Improve process flow and reduce lead times
- Identifies and focuses work on value added activities
- Enhance quality of work output
- Eliminate waste (i.e. reworks, loop-backs, waiting, excessive hand-offs)

What Kaizen Does Not Do



- Affect regulatory stringency
- Force hasty inadequate work
- Cut corners
- Seek to fault staff
- Work against the agency mission

Details of the Kaizen Event at APCD



- The APCD hosted a Kaizen Event the week of June 2 – June 6, 2008
- Focused on improving the process of permitting Oil & Gas Industry minor sources

Team Members



- Sponsor: Paul Tourangeau
- Consultant: Tom Morin
- Chris Laplante (Engineer)
- Scott Patefield (Inspector)
- Kathy Drulard (Admin)
- Korby Bracken (Anadarko)
- Dawn DeVries (Williams)
- Ashley Campsie (Encana)
- Roy Doyle (Inventory)
- Adam Wozniak (Tech)
- Matt Burgett (T5 Engineer)
- Chip Hancock (Engineer)
- Dana Podell (Inspector)
- Larry Granato (IT)
- Jon Torizzo (Modeling)

Our Approach



Kaizen Breakthrough Experience

Team-based energy and creativity drives immediate process improvement



At the end of the week, each Kaizen team has achieved dramatic operational improvements

Key Principles



- Clear objectives
- Team process
- Tight focus on time (one week)
- Quick and simple, action first
- Necessary resources available right away
- Immediate results (new process functioning by end of week)

Time-Based Strategies



Lead-Time Reduction

Identify and eliminate waste

- Defects and loop-backs
- Hand-offs
- Over-producing
- Unnecessary processing
- Decisions in process
- Excess transportation
- Waiting



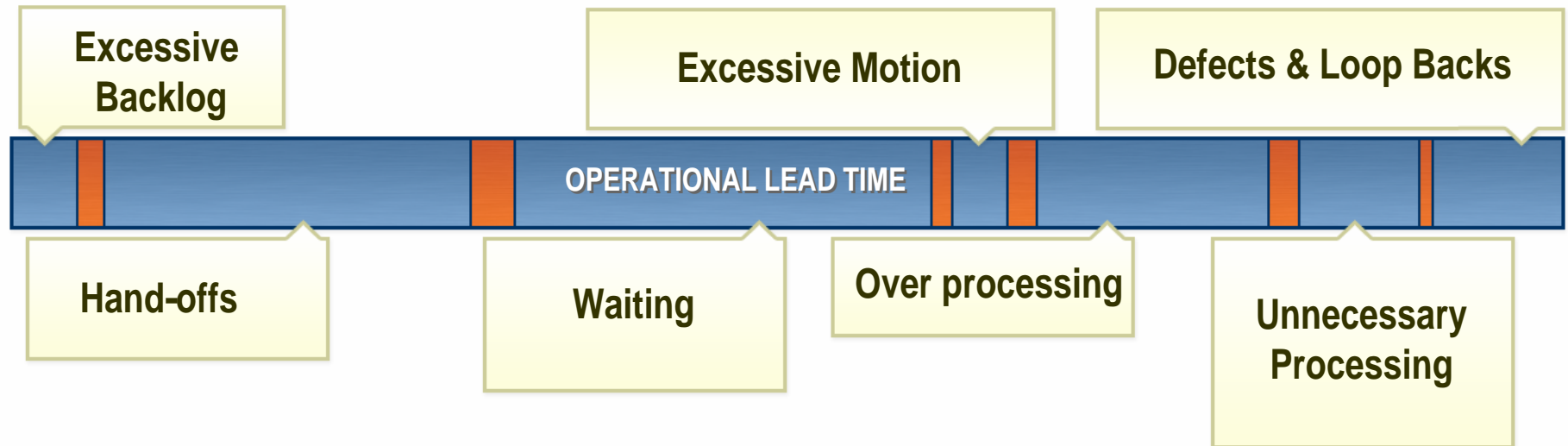
Time-Based Strategies



Lead-Time Reduction

The Key is to Reduce Your Processes to Core Value

■ Wasted Time and Activity
■ Core Process Value



The key is to reduce your processes to “core value”

Scope



From the writing of the application for a permit to the issuance of final approval for minor source permits for oil & gas industry

Out of Scope



- Major source applications & major modifications
- Regulatory & formal policy changes
- Permit conditions
- General permits

Feedback Themes



- Customer feedback – length of time to get permits issued
- Internal feedback – eliminate backlog and better utilize resources
- Reduce variation and increase consistency



Annual Demand



Annual applications for Oil & Gas Air Permits = 1,000 to 1,500
or
4 to 6 per work day

Objectives



- Reduce lead time (receipt of complete app → date of issuance of initial approval permit) to statutory limits (90 to 135 days)
- Reduce lead time (receipt of complete self-certification → date of issuance of final approval) to 60 days

| Measure | Current Level | Target | Gap |
|----------------------------------|---------------|---------|---------|
| Reduce Lead Time (# days) by 50% | 160 Days | 80 Days | 80 Days |
| Reduce Backlog by 50% | 541 | 271 | 270 |

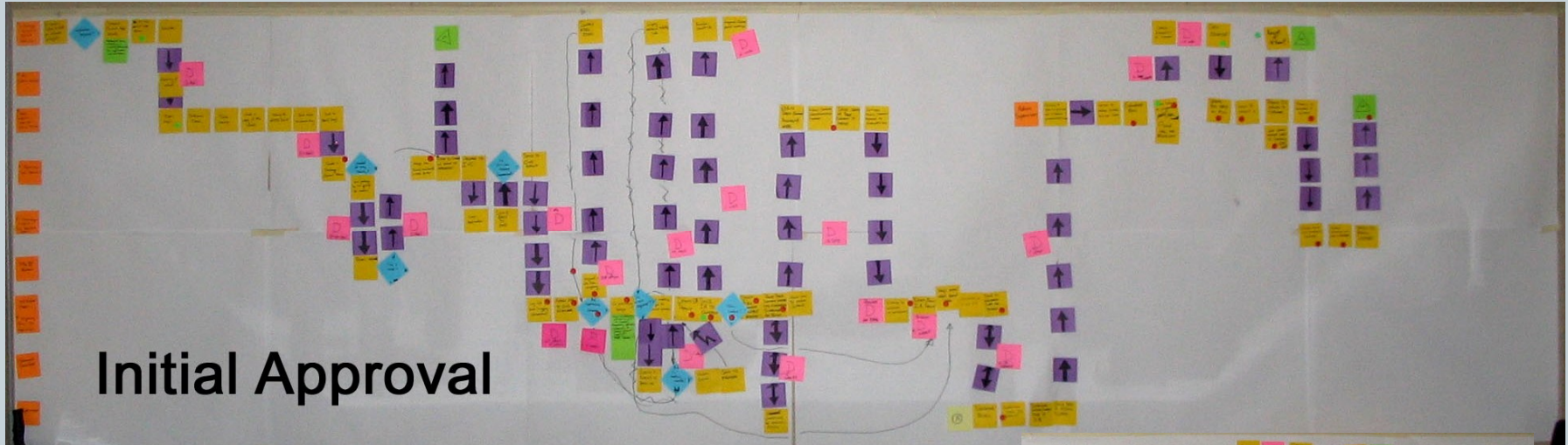
Hit targets by August 1, 2009

Goals

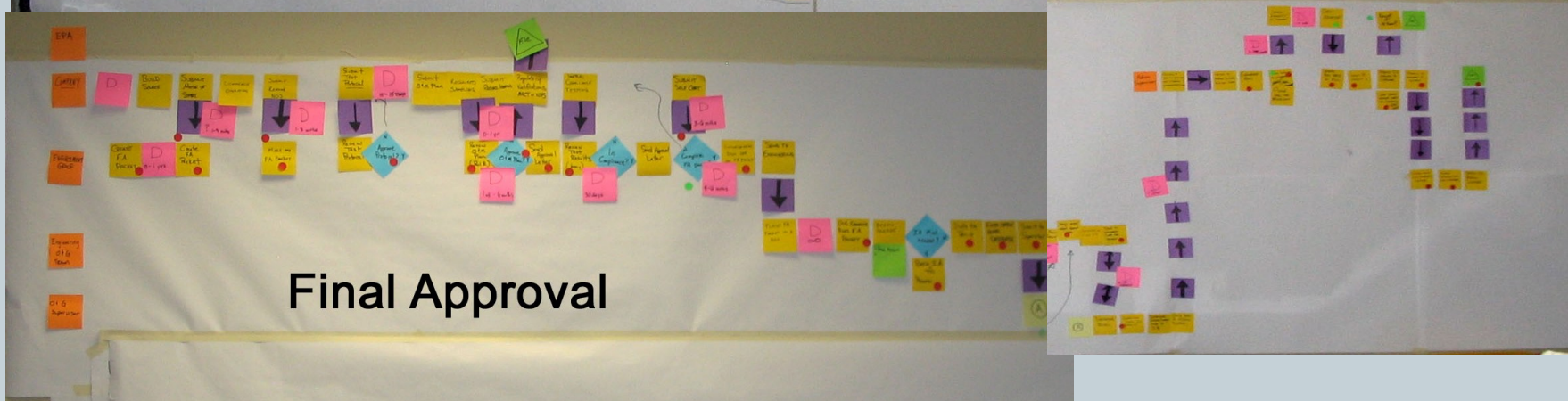


- Eliminate initial approval backlog
- Eliminate incomplete applications
- Issue permits within regulatory timeframe
- Improve communication between industry and Air Division
- Increase understanding of needs & expectations

Current State Flow Map



Initial Approval



Final Approval

Voice of the Air Agency



- Incomplete applications
- Companies frequently revising applications mid-process
- Lack of appropriate application forms
- Unnecessary final approval permitting process
- Lack of guidance for what represents a complete application
- No process for rejecting incomplete applications
- Lack of training on oil and gas processes
- Too many application hand-offs

Voice of the Industry



- Permit process too slow
- Define deadlines to allow for accurate planning
- Lack of appropriate application materials
- Non-value added steps are too lengthy
- Final approval permit not necessary
- Lack of consistency of permit conditions
- Inability to determine review engineer and permit tracking
- Lack of notification that the permit process has begun
- Confusing invoicing / billing
- 15 day post start-up notice to provide accurate information

Brainstormed Ideas



- Move “application completeness” determination to the beginning of the process & return incomplete applications
- Create “application completeness” checklist
- Develop appropriate application forms (APENs) to assure complete information is provided
- E-mail engineer assigned to permit & application status to company contact
- Require Notice of Start-up (NOS) to be filed within 30-days of commencement of operation rather than 30-days prior
- Create guidance documents to accompany application forms

Brainstormed Ideas (cont'd.)



- Submit all “Self-Certification” paperwork simultaneously
- Provide specific “Self-Certification” checklist with permit to guide operator through required steps
- Standardize O&M plans and include as an attachment to the permit
- Eliminate need to re-issue permit as Final Approval
- Require complete facility emissions inventory with permit applications

Improvements Being Made



- Reduce hand-offs & delays
- Eliminate re-issuance of a final approval permit while preserving self certification process
- Incorporate O&M plan into permit
- Created a permit specific self certification checklist
- Developed an application completeness checklist
- Improving application forms

Improvements Being Made



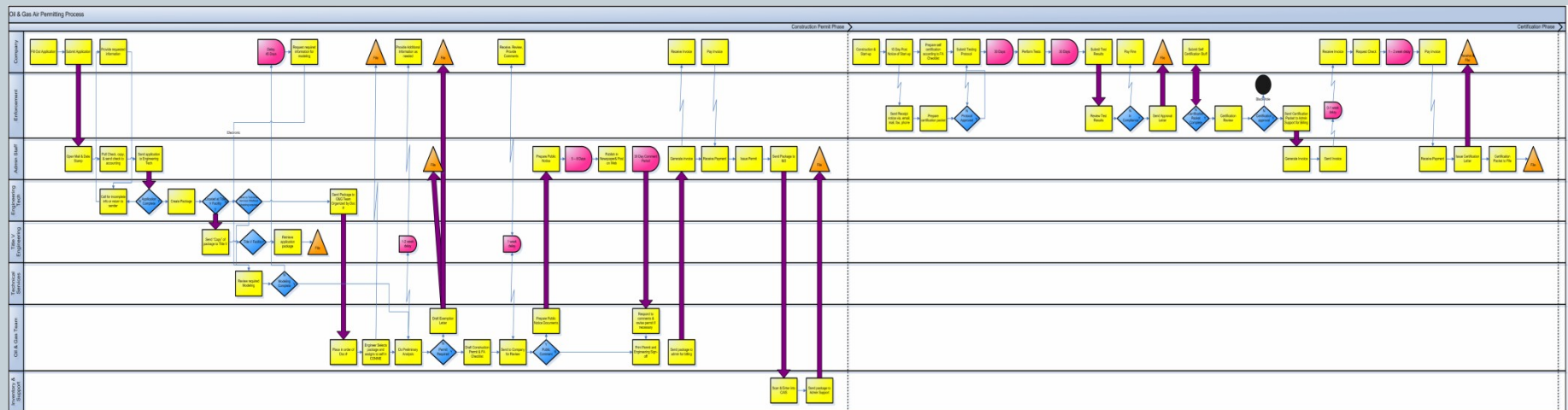
- Improving consistency of permits
- Enhancing communication between permit engineers and inspectors
- Standardized organization of permit applications
- Expanded billing & permit issuance options
- Implementing electronic notification of permit application assignments

New Process



Construction permit phase

Compliance certification phase



Key Changes for Stakeholders



- Applications must be accurate & complete
- Applications must include “Application Completeness Checklist” and all required attachments must be included.
 - Air Pollutant Emission Notice(s) (APEN)
 - APEN Filing Fees
 - Company Contact Information
 - Process description and flow diagram
 - Facility wide emissions inventory
 - Emissions calculations are supporting documentation
 - Ambient air impact analysis
 - Operation & Maintenance plan (Synthetic minor & major sources)
 - Regulatory applicability determinations (Not mandatory)

Key Changes for Stakeholders



- New application forms are being developed and must be used where appropriate
 - Equipment specific APEN forms
 - Facility wide emissions summary
 - Notice of Startup (NOS)
 - Company Contact Information Form
- Requirement to submit Operating & Maintenance plans with synthetic minor or major permit applications.
 - Based on standard guidelines or site-specific provided by the operator
 - O&M plan will be incorporated into the permit

Key Changes for Stakeholders



- Standard organization for permit applications (i.e. “attachments”)
- APEN filing fees must be submitted with applications
- New Oil & Gas permitting website under development for “one stop shopping” for forms, guidance
- Notice of Startup will be required 30 days post commencement of operation to ensure accurate information provided (i.e. start-up date and equipment details)
- Company Contact Information Form will be required to ensure bills are sent to appropriate person and technical contacts are available to engineers

Key Changes for Stakeholders



- Permits will be issued with source specific “Self Certification Checklist” to clearly inform operator what steps must be taken to certify compliance
- Eliminate the Initial Approval/ Final Approval concept
 - Permits will be issued once as a “Construction Permit”
 - Self-Certification will still be required and approved via a letter to the operator
- Permitting lead times will be reduced

Summary of Results



| Measure | Before | Goal | After | % Change |
|---|----------|------|-------|----------|
| # of Steps | 114 | | 56 | 51% ↓ |
| # of Hand-offs | 48 | | 24 | 50% ↓ |
| # of Decisions | 14 | | 10 | 29% ↓ |
| # of Delays | 34 | | 9 | 74% ↓ |
| # of Functions | 10 | | 8 | 20% ↓ |
| Lead-time <i>Construction permit</i> | 160 days | 50% | TBD | |
| Backlog | 541 | 50% | TBD | |
| Value Adding Steps | 8 | | 8 | |

Lessons Learned



- There is always room for improvement and efficiencies
- The value of communicating expectations
- The power of single piece flow – once you pick it up, don't put it down until it's complete
- Better appreciation for industry and Division challenges

Lesson Learned (cont'd.)



- Encourage how industry and the Division worked together to develop an improved process
- Realized the benefit of making the process visible using process flow mapping
- Importance of bringing affected stakeholders (internal and external) together to understand respective challenges

Additional Information



- The anticipated implementation date of the new oil and gas permitting process is **August 2008**
- APCD will be delivering notifications of the availability of new resources (forms, website, etc.) via the ColoradoAirNews listserve
- To sign up for listserve notifications, please visit

www.cdphe.state.co.us/ap/Listservesubscribe.html

Questions?

