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Implementing On-Line Reporting Capability Using CERS
(California Environmental Reporting System)

FINAL

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Document Review

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1. Introduction:

Implementation of CUPA programs requires regulated businesses to assemble and submit information on hazardous materials, hazardous waste, underground tanks and other information required under various State and local laws/regulations. Some of this information is available in electronic form through various information systems maintained by local agencies but business access to submit this information on-line is not widely available in California.

Local CUPAs and PAs (UPAs) are charged with the collection and review of UPA Program information/data submitted by businesses within their jurisdiction. Much of this information is currently collected in paper form though some UPAs have systems that allow electronic submission of program information/data to the State of California. Most UPAs convert at least a portion of the paper submissions into electronic form by manual entry into their local systems/databases.

2. Purpose:

The purpose of this document is to provide guidance for UPAs with the implementation of Assembly Bill 2286 (Chapter 51, Statutes of 2008 and HSC 25404, Chapter 6.11). AB2286 mandates that all UPAs implement an electronic reporting system within 3 years of the establishment of the statewide information management system. Key elements of AB2286 include:

- "…increase the oversight surcharge by an amount necessary to establish the data system, but not to exceed $25 each year for 3 years, to establish the statewide information management system, and would provide that not less than 75% of that funding shall be provided to certified unified program agencies and participating agencies through grant funds for the purposes of the system."
- "…require certified unified program agencies and participating agencies to report program data electronically not later than 3 years after the information management system is established."
- "…require the secretary to provide technical assistance to regulated businesses to comply with the electronic reporting requirements and authorize the use of funds from the oversight surcharge for that purpose."

Additionally, this document outlines common information technology issues for UPAs to consider when implementing on-line business submission of UPA Program information/data to Cal/EPA. Some issues for consideration include, but are not limited to, UPA approval of business submissions, permitting, invoicing, and inspection tracking through electronic databases. Elements of this information will contribute to a statewide system of environmental information. UPAs have the flexibility to choose to use a local system, a statewide system, or a combination of both to implement on-line reporting. In any case, the data must feed into the statewide system even if the information is initially collected at the local level only.

Someone suggested adding some text regarding 'reporting'…once we figure out what reporting means in the context of this document, and then we can fill this in.

3. Scope:

The scope of this document includes those capabilities a UPA will need to address when implementing their on-line reporting system. The capabilities include: conducting a needs assessment; submission and storage of program data; data synchronization; permitting; billing/invoicing; inspection; public record access; and training. This document also addresses management reporting capabilities.

4. References:

a. Health and Safety Code, Section 25404
b. Assembly Bill 2286 (Chapter 51, Statutes of 2008 and HSC 25404, Chapter 6.11)
c. http://www.calepa.ca.gov/CUPA/LawsRegs/
d. http://www.calepa.ca.gov/Publications/Title27/

5. Stakeholders:

a. California Secretary for Environmental Protection – The head of Cal/EPA.

b. CalEPA – California Environmental Protection Agency – The state agency that oversees the implementation of the state Unified Program.

c. CUPA – Certified Unified Program Agency ; the local agency certified by Cal/EPA to implement the Unified Program at the local level.

d. EcoInteractive - EcoInteractive is a privately held company that provides software and consulting services to government and industry clients; EcoInteractive developed and supports CERS.

e. Regulator - The state, CUPA or PA.

f. Inspector – Field staff that visit regulated facilities and inspect for regulatory compliance.

6. Implementation Plan:

This section addresses IT and business activities UPAs and local agencies should consider when implementing AB2286.

6.1.   Conduct Needs Assessment

To effectively prepare for the implementation of CERS, it is essential for UPAs to analyze how the use of information technology i.e. CERS, will impact they way they perform their work and their business processes. To gain this understanding, we recommend that UPAs conduct a 'needs assessment' or Current State Analysis of their business processes as the first step in implementing CERS.

Refer to Appendix B – How to Conduct a Needs Assessment for additional information.

a. Use Local System with CERS?
  i. Does the UPA have its own data management system (DMS)?
  ii. If so, they may choose to use their DMS to electronically report their UPA Program information/data to Cal/EPA, i.e., Title 27 Data Dictionary; Business Information, Business Owner/Operator Identification, Hazardous Materials, UST, Inspection, Compliance, Enforcement, etc.
  iii. Businesses Enter Information in CERS; will businesses be asked to enter and maintain business information, and hazardous material/hazardous waste information/data in CERS?
  iv. Combination of Both Business and CUPA; will both the CUPA and businesses enter and maintain CUPA Program information/data?
b. Use CERS Exclusively
  i. Will CERS be used exclusively as the means of electronically reporting UPA Program information/data to Cal/EPA?
  ii. If using CERS exclusively, consider the impact on fee calculation, billing/invoicing and permitting of businesses in your jurisdiction. See Sections 6.4, 6.5 and 6.6.
  iii. Consider training requirements for local regulatory staff.

c. Local System Exclusively
    UPAs may choose to use their local system exclusively to manage the requirements of AB 2886 (Chapter 51, Statutes of 2008). This option requires the UPA to develop an interface for businesses within their jurisdiction to enter and manage their hazardous material inventory and waste information/data.
    NOTE: This option is NOT recommended for use with multi-jurisdictional businesses operating within the state of California.

    NOTE: UPAs considering the use of their local system exclusively for meeting the requirements of AB2286 must anticipate the need to avoid duplicate data entry for corporations which report Tier II information to Cal/EPA but are headquartered outside of California. There is potential for these UPAs and corporations to report the same or similar information to Cal/EPA, resulting in duplicate submissions. UPAs should take the lead to encourage these businesses and their corporate partners to establish explicit policies and guidelines for reporting hazardous material inventory and waste information/data.

6.2.   Submitting and Storing Unified Program Related Information

    CERS allows on-line submission of mandatory UPA Program information/data. If a UPA is currently collecting local information not specified in the Title 27 data dictionary, CERS will allow the collection and storage of locally collected information.

Maintaining UPA Program information/data locally will vary from one UPA to another. UPAs planning to use CERS as a point for businesses to submit all or part of the Title 27 information should carefully consider all of the following:

6.2.1. Facility ID or Alternative Numbering Methodologies:

CERS does not accommodate local agency Facility ID assignment for new businesses. The current UNIDOCS system assigns a temporary Facility ID to each new business as they apply for an account on-line. Once the business is 'approved' by the regulator in that jurisdiction, a permanent Facility ID is assigned to that business. If you already have a local system of permit numbering that you wish to maintain, the UPA will need to renumber the "new" business within CERS. The ability to renumber the business exists within UNIDOCS and the expectation is that this function will be carried forward into CERS.

Once the correct Facility ID is established within CERS, this number will establish a common point for data exchanges between CERS and any local system.

6.2.2. Duplicate Submissions:

As all agencies are aware, with a paper submission system or an on-line system it is not uncommon to receive duplicate submissions for the same site. Common reasons for this are;

- Lack of communication between business and business contractors
- Business is known under multiple addresses
- Business is known under more than one name
- Variations in data; name, address, phone number
- Multi-jurisdictional submissions; submissions made by business and by businesses corporate headquarters

In any case, local agencies already have procedures in place to screen for these duplicate submissions. Agencies should carefully consider how these procedures would be applied if they elect to use CERS for permit management.

Be advised that there are no immediate plans for the following within CERS:

- GIS mapping of permits available to local regulators
- Parcel number assignment
- Alias address assignments for a permit (permit associated with multiple addresses)

- Parsed address fields (address broken up into address components where the street number, street name, street direction, or suite appear as individual data fields)

If any of these screening tools are integral to your verification process in screening for duplicate submissions, you will have to consider how this information will be obtained outside CERS.

6.2.3. Local Data System Requirements:

Certain local data systems will create multiple underlying data links and functional links whenever a "permit" is created within the local system.

If the agency elects to use CERS for new permits, the agency will have to ensure that these data links and functional links are also created when these "new permits" are downloaded into the local system.

Such a download would be required if this information was needed to initiate invoicing, permit issuance, track permit expirations, inspection scheduling, inspection tracking or other items not specific to Title 27 requirements.

6.2.4. Other Points to Consider:

i. As with UNIDOCS, uploading of UPA Program information/data to Cal/EPA will be via tab-delimited file. Cal/EPA is currently working to develop an XML-based interface standard for use by UPA to report UPA Program information/data.
ii. UPAs must consider the impact on existing interfaces between the UPA and UNIDOCS when implementing CERS; i.e. does the interface require modification to communicate with CERS.
iii. Use of single or multiple servers for both CUPA and PA
    1. Data security and firewalls
    2. Wireless access to data for automated inspections
iv. Hosted system vs. locally supported system (not CERS); which is best for your organization.
    1. Data security and firewalls
v. Wireless access to data for automated inspections and first responders while in the field.

6.3. Data Synchronization

Keeping UPA information/data synchronized with CERS data and CERS data synchronized with UPA information/data deserves significant consideration. Regardless of how a UPA plans to use CERS, the following items should be evaluated by the UPA to ensure local information/data is accurately maintained.

- Site addressing
- Mailing addresses

- Change of owner
- Businesses moves
- Local agency correction of data errors
- Data uploads and downloads
- Live data links (real-time interface) vs. agency approval of submissions
- Facility ID Changes with new Business Owner

6.4.   *Data Integrity and Standardization*

6.4.1. Common Standards:

This section of the Implementation Plan addresses the need for data standardization. For the purpose of mutual understanding, data standardization refers to ensuring that a data record conforms to a predefined, expected format. The format may be defined by an official organization or as simple as a de facto convention; such as the use of hyphens to separate the pieces of a US telephone number - as opposed to other national formats, which might use commas or periods.

Regardless of which system a UPA chooses to employ, the use of electronic systems to capture information is enhanced when the data has a level of standardization and verification against existing standards.

An example of this standardization exists within the current UNIDOCS system through the use of approved chemicals within a chemical data dictionary. Selection of an approved chemical imposes use of a standard chemical name, hazard properties, and other information which is intrinsic to the chemical. Other information like quantities, storage containers and the "common name" are variable. In addition, certain required fields must be entered before the item can be saved. This system provides a level of standardization which enhances the system overall.

Standardization of chemical names means that UPAs may have to change terminology that may be prevalent in their current implementation. An example of this is something as common as gasoline. For chemical inventory reporting, some agencies may be differentiating between different grades of gasoline (regular, mid grade, premium). Others may be using the name as supplied by the retail gasoline company as many have their own names and proprietary CAS numbers. Currently, Unidocs has one approved "gasoline" chemical item with a standard CAS number. Additional name information can be entered under the common name field but the chemical name would remain as "gasoline". This example shows how standardization will require some level of compromise for using a common system among many agencies.

6.4.2. Site Address and Mailing Address Issues

Another area of standardization and verification is the facility site address. As agencies are already aware, businesses submitting address information in paper or

electronic form are not consistent in address formatting and, in some cases, even the address information is not consistent.

Many agencies are already verifying site addresses using their knowledge of local areas and through electronic systems designed to match addresses against known standards. This may be through parcel address lists or electronic systems designed to verify addresses. It is not unusual for business submissions to omit the street type (is it an avenue, a street, or a boulevard) while this information is important as their may be several streets with same name but different street types. In addition, some sites actually have more than one address (multiple buildings) and you will see variation in addresses on business submissions.

In addition, most agencies using local electronic systems are matching submissions against standard street names and established addresses. These systems may also match to known parcels and/or GIS systems to establish the site location within the local system. These types of system usually include conformance with specific addressing standards already developed by the local agency. In many data systems the address is parsed into components to allow advanced search functions and provide additional data standards. Data standards would include things like:

Street Types – How are streets abbreviated (example, street type is always a two character abbreviation such as RD, PL, BL, HY, CR)
Street Direction – Is the "N" for N Harbor Bl part of the street name or a separate field
Suites – Are suites part of the address field or a separate field
Standard Street Names – Most agencies have streets or highways where there are many variations on how it might be written. What standard should be used? (Examples, Hotel Circle South or S. Hotel Cir., Highway 94 or HY 94 or 94 HWY or S94)
Address Fractions – Is the address fraction a separate field in your local database
Zip plus 4 – How is your zip plus four data formatted 92117-1234 as one field or two fields 92117, 1234

For businesses submitting address information through Unidocs and the planned State system, there are no immediate plans for any kind of address validation or standardization of address input. In addition, the Title 27 data standard does not parse the address beyond a separate field for City, State, and Zip code. If addresses are to be downloaded from CERS, the downloaded addresses may have to be parsed to fit your local data structure. Parsing address fields into components can be quite complex and error prone.

Agencies who will be using site address and mailing address information for invoicing and permitting through existing local database systems should carefully consider how this address information will work with CERS. It may be advisable to process new permits through your current address review and validation

systems before accepting these directly from CERS. If the address information submitted through CERS must be altered to meet local standards, some synchronization of the systems will be needed to have the addresses in CERS agree with those in your local system (see section on Data Synchronization).

6.5.   *Management of Data Changes/Updates*

One of the serious drawbacks to paper submissions of information is the requirement to compare previous submissions with current submissions to see what changes are being reported. This process can be very time consuming. Without this comparative approach, agencies have to accept submissions at face value and the time spent verifying a previous submission is essentially lost.

This same issue exists with electronic submission if the submission system does not provide tools to identify changes to the agency reviewers.

Currently UNIDOCS has functionality to compare the latest hazardous materials business plan inventory submission with the last agency accepted inventory. This tool will highlight additions of new items, changes to basic information (e.g., quantity, containers) and a separate report shows deleted items. This function can really expedite submission review as submissions with little or no changes require little time as long as the agency has confidence in the adequate review of the previous submission.

This means that the time spent on a detailed initial review is not wasted on subsequent reviews. Agencies can focus review time on those sites with significant changes and new sites where the review time is most warranted.

In addition UNIDOCS tracks submissions of hazardous materials business plan inventory data sets and has a notification system to inform agencies of hazardous materials business plan inventory submissions.

Currently UNIDOCS does not have a management of change tool to track changes or notify agencies of submissions outside of hazardous materials business plan inventory. Changes to other data elements like emergency contacts, mailing address, business activities, and facility information are not tracked; there are also no notifications to agencies when these items are changed.

It is unclear what level of change tracking CERS will incorporate into the initial release of the product. Ideally the system will have functionality similar to that already existing in UNIDOCS for hazardous materials business plan inventory. This may be applied on a virtual form by form basis with individual tracking for "pages" where forms have multiple pages (e.g., UST Monitor Plan).

Agencies designing new systems or with access to systems that may already have some or all of these features should consider the value of these features given that CERS is still in development.

6.5.1. Data Changes

UPAs currently have the ability to make changes to information/data submitted by the businesses within their jurisdiction. As part of their implementation of CERS, each UPA must determine how they will utilize this capability.

i. Make updates in cooperation with the business. This could occur during an inspection in a number of ways:
   a. Mobile inspection/wireless access to CERS
   b. Have business owner/representative make changes with inspector assistance
   c. Have business owner/representative make changes without inspector assistance
ii. Make updates independent of the business; the Regulator identifies 'minor' changes and makes the changes on behalf of the business. The UPA must make a determination of what is a 'minor' change and communicate that policy to all regulated businesses within their jurisdiction.

If the UPA chooses to make updates to a businesses submission, they should communicate the changes to the business and have the business acknowledge and accept the changes.

6.6.   Inspections

Due to variations in how UPAs and local agencies perform their inspections they need to consider the impact of using CERS on their inspection processes/procedures.
   i. Paper/pencil inspection and transcribe into local system; send information data via tab delimited file.
   ii. Paper/pencil inspection and transcribe into CERS
   iii. Will businesses be inputting UPA Program information/data; UPA will need to validate during inspections
   iv. Inspectors capture UPA Program information/data electronically; notebook or laptop

6.6.1.Inspection Scheduling and Scope of Inspections:

CERS does not provide any ability to schedule inspections. However, certain Title 27 elements may be needed to assess inspection frequency and assign the type and scope of needed inspections. These elements would include those that require differing inspection frequencies and/or specialized inspections. This might include:

- Business activities (USTs, Hazardous Materials, Hazardous Waste, Tiered Permitting, ASTs, CalARP, and others)
- Other Title 27 data that would establish the business is subject to specific inspections (UST data, Haz Mat data)

6.7.   *Permitting and Permit Issuance*

Due to variations in how UPAs and local agencies issue permits for CUPA Program information/data they need to consider the impact of using CERS on their permitting processes/procedures. **NOTE:** CERS does not provide for issuing or tracking permits.

    i. If using CERS exclusively, how will the information be used in association with permitting process?

   ii. Tracking, management, and reporting of violations (Class I and II and Minor), Return to Compliance

  iii. If your local system is dependent on Title 27 data elements for issuing permits and permit distribution (mail addresses, Email, etc.), this data will need to be downloaded from CERS. Title 27 data elements for permit issuance would include:

- Business activities (USTs, Hazardous Materials, Hazardous Waste, Tiered Permitting, ASTs, CalARP, and others)
- Facility information including business name, owner name, and UST information
- Distribution information such as mail and Email information

6.8.   *Billing/Invoicing*

Due to variations in how UPAs and local agencies generate the billing invoices, they need to consider the impact of using CERS on their billing/invoicing procedures. **NOTE:** CERS does not provide for billing or invoicing.

    i. If the local system is dependent on Title 27 data elements for calculating permit invoice amounts and /or invoice distribution (mail addresses, Email, etc.), this data will need to be downloaded from CERS. Title 27 data elements for invoice calculation might include:

- Business activities (USTs, Hazardous Materials, Hazardous Waste, Tiered Permitting, ASTs, CalARP, and others)
- Hazardous Materials data like numbers and quantities of materials
- Hazardous Waste data like numbers and quantities of wastes (if the local agency is collecting this data below the Business Plan disclosure levels this will have to considered and coordinated with the local businesses using the State on-line system)
- Distribution information such as mail and Email information

   ii. Validate business information; business name, owner, address

  iii. Generate invoices; by hand or using local system (Excel, Access, Envision, Accela, KIVA, etc)

  iv. Reporting Capability:

      1. Billing

      2. Collection

             3.   Amount Remitted to State
        v.   Payment Status

6.9.   *Use of CERS Data by UPA*

The reporting capability of CERS is currently limited in functionality. Future releases of CERS may contain enhanced reporting capability.

What information will Cal/EPA extract from CERS?
        a.   Annual Single Fee Summary Report
        b.   Annual Inspection Summary Report
        c.   Annual Inspection Summary Report
        d.   Semi-annual UST Program Report

What requirements will Cal/EPA impose on the UPAs?
How will locally collected information be accommodated in CERS?
How will Public Records Act (PRA) requirements be met with CERS?

7. Support Activities

This section addresses support activities a UPAs or local agency must address to successfully implement AB2286 and ensure continued compliance with requirements to support the reporting of program information to Cal/EPA. Support activities include, but are not limited to, Training, Change Management.

7.1.1. Security/System Permissions:

7.1.1.1. Regulator Access

Identify UPA staff that will have Regulator access
      a.   Who is responsible for approving access requests
         a. UPA Program Manager
         b. Regulator
         c. Inspector
         d. Business
      b.   Who is responsible for approving inventory submissions?
         i. Data Manager/Program Manager
        ii. Supervisor
       iii. Inspector
      c.   Who is responsible for validating other UPA Program information/data?

7.1.1.2. Inspector Access

This section may not be applicable to all UPAs
Identify UPA staff that will have Inspector access
      a.   Who is responsible for approving inventory submissions?
         i. Data Manager/Program Manager
        ii. Supervisor

      iii.   Inspector

7.1.1.3. Business Access

    a. As needed, identify the access needed for a business to enter and maintain their hazardous material inventory/data.

7.1.2. Training:

7.1.2.1. Staff Training

Local agencies need to identify and develop training for UPA staff; the plan should include management, inspection staff and administrative personnel.

7.1.2.2. Participating Business Training

Local agencies need to identify and develop training for business within their jurisdiction; the plan should include outreach to local businesses to assist them in understanding how AB2286 affects them; what businesses need to do to comply with the new regulations.

7.1.3. Change Management:

Cal/EPA, UPAs, and local agencies need to develop Change Management Plan. This plan would be a means for documenting, evaluating, and recommending changes or enhancements to CERS.

Appendix A: List of Forms

a. Business Activities
b. Business Owner/Operator Identification
c. Hazardous Materials Inventory - Chemical Description
d. Operating Permit Application – Facility Information (UST)
e. Operating Permit Application – UST Information
f. Certification of Installation /Modification (UST)
g. Underground Storage Tanks - Monitoring Plan (not the Response Plan)
h. Recyclable Materials Report
i. Onsite Hazardous Waste Treatment Notification - Facility Page
j. Onsite Hazardous Waste Treatment Notification - Unit Page
k. Conditionally Exempt Small Quantity Treatment (CESQT) Page
l. Conditionally Exempt - Specified Wastestreams (CESW) Page
m. Conditionally Authorized (CA) Page
n. Permit By Rule Page
o. Conditionally Exempt - Limited (CEL) Page
p. Certification of Financial Assurance
q. Remote Waste Consolidation Site Annual Notification
r. Hazardous Waste Tank Closure Certification

Appendix B: How to Conduct a Needs Assessment

The purpose of this section is to provide a high-level set of guidelines for a UPA to use in conducting their needs assessment. This content is not intended to be exhaustive, but provide information for UPAs to begin to perform their assessment.

As a starting point, UPAs should consider the following when beginning their needs assessment; what is the process for a setting up a new, updating an existing or closing/inactivating an existing business?

1. Identify and document current business processes – Inspections, Permitting Billing, Reporting, etc
   a. Describe process activities/steps
   b. Identify and document process inputs and outputs, including data, hand-offs to other process stakeholders
   c. Diagram process flows – can use paper and template, PowerPoint, Visio, open source Visio equivalent (OpenOffice.org); use swim lanes to show organizational hand-offs; see 'Process Diagramming'.
2. Identify and document roles and responsibilities
3. Identify and document organizational policies

Process Diagramming:

Processes can be diagrammed using a variety of techniques, flowcharts, workflow diagrams, data flow diagrams, however an effective way of diagramming processes is with the use of swimlane diagrams.

A swim lane diagram is a graphical representation of a process flow that shows the interaction of different parties on the process and how the process progresses naturally through the different phases of the project. An example of swim lane diagram is shown in Figure 1 – Sample Swim lane Diagram.

Swim lane diagrams include the following information:

- *Process:* The actual process and flow that is being tracked through its identified progression steps.
- *Actors:* The people, groups, teams, etc, who are performing the steps identified within the process.
- *Phases:* These might reflect the phases of the project, different areas of the project, or any secondary set of key elements that the process flow needs to traverse to successfully complete this process.
- *Symbols:* These are the physical symbols used to graphically represent what is happening in any given step of the process. See Figure 2 - Process Symbols, for a basic list of symbols and description of their use.
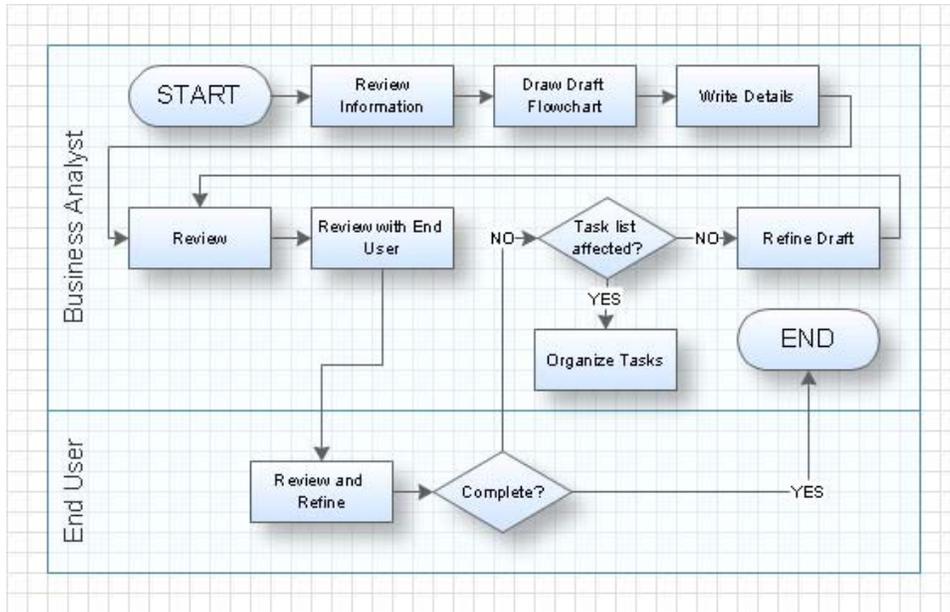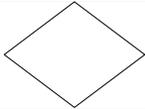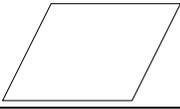
Figure 1 – Sample Swim Lane Diagram

Symbol	Description
	Process Step – A rectangle indicates an activity or task being performed as part of the process flow. It can be expanded to span multiple swim lanes (if using this diagramming method) to indicate performance by multiple parties.
	Decision Point – The diamond identifies a point in the process where a decision must be made before the process can continue on.
	Documentation – This symbol is used to indicate any type of paper based documentation that may come out of the process, such as a report, check list, memo, etc.
	Stored Data – This symbol indicates an area in the system where data is being stored or retrieved from.
	Start/End – This symbol is used to show the Start and End points in a process.
	Connector - This symbol is used to connect process objects/symbols and indicates the physical flow within the process.

Figure 2 - Process Symbols