Chevron

Global Marketing

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

September 5, 2008

Mr. Chris Hoidal
Director, Western Region
Office of Pipeline Safety
12300 West Dakota Avenue, Suite 110
Lakewood, CO 80228

RE: CPF No. 5-2008-5012M

Dear Mr. Hoidal:

On March 19, 2008, Mr. H. Nguyen of the Pipeline and Hazardous Materials Safety Administration (PHMSA) inspected Chevron Products Company's (CPC) Integrity Management Program in San Ramon, California.

On June 9, 2008, as a result of the inspection, CPS received a Notice of Amendment from PHMSA, dated June 6, 2008. On June 9, 2008 CPC requested a 60 day extension which was approved.

CPC revised its existing processes and procedures and modified the current risk assessment model to incorporate additional risk factors and variables such as Loss Prevention System (LPS) and API 653 inspection data, as indicated in the Notice. The amended procedures are included with this letter.

CPC is committed to operating and maintaining its pipeline terminals in accordance with all applicable laws and regulations, and in a manner that minimizes environmental and safety risks. We the procedural changes resolve the issues identified by PHMSA and improve our Integrity Management practices.

Comments or questions relative to Chevron Product Company's IM Program should be directed to Gene Ketcham at (503) 221-6579 or GPKE@chevron.com.

Sincerely,

Gene Ketcham for

Peter Prather
HES Manager
Chevron Product Company

Attachments:
I CPC IMP Section 3.0 Pipeline Facility Risk Assessment
II Loss Investigation/Near Loss Investigation Analysis for DOT IMP Risk Assessment
III Risk Assessment
IV Facility Risk Questions

3.0 PIPELINE FACILITY RISK ASSESSMENT

This section outlines the processes used to integrate and perform a risk assessment on all available information affecting the likelihood and consequence of failures at COMPANY covered pipeline facilities.

3.1 The Concept of Risk

The pipeline facility risk assessment is similar in nature to the line pipe risk assessment and assesses both the likelihood and the consequence of failure mechanisms that could affect an HCA. It can be expressed as a mathematical relationship:

Risk = Likelihood x Consequence

Any of the risk methods used to assess the risk of a pipeline may be applied to pipeline facilities. The data used in a facility model, however, will vary from that used to model line pipe. The more complex nature of facilities, including piping, manifolds, valves, flanged connections, control and instrumentation components, complex cathodic protection systems, dead legs/low flow piping legs, and auxiliary and instrumentation tubing can make the risk assessment a greater challenge.

The basic components of the risk score for facilities are:

- Likelihood, which includes probability variables (conditions and activities that are integrity threats, quantities of variables, and weightings) and areas of opportunity (physical equipment and its size, counts of more problematic components).
- Consequence, which includes product hazard (acute and chronic product hazards, flammability), spill size (volumes stored, leak detection capabilities, secondary containment), and receptors (population, ecological, drinking water, commercially navigable waterways).

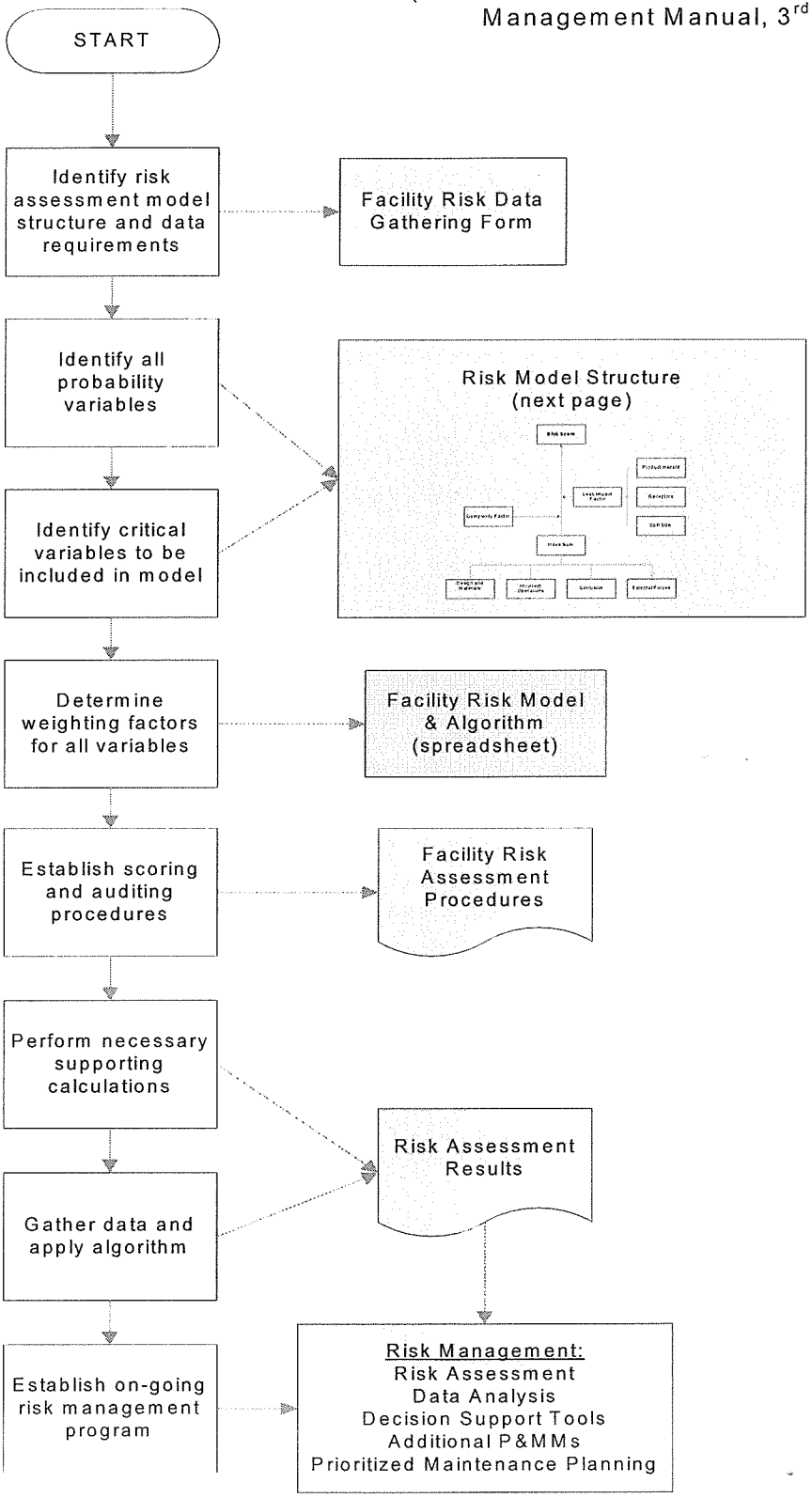
To address facility risk, COMPANY developed an index-based, Facility Risk Assessment model, based largely on W. Kent Muhlbauer's "Pipeline Risk Management Plan".

COMPANY took the following steps to develop the Facility Risk Assessment model:

- Identified risk assessment model structure and data requirements;
- Identified all probability factors and critical variables to be included in model;
- Determined weighting factors, scoring and auditing procedures for all variables;
- Performed necessary supporting calculations;
- Gathered data and applied algorithm to each covered facility;
- Established on-going risk management program.

CTPDS Facility Risk Assessment

(based on W. Kent Muhlbauer, Pipeline Risk Management Manual, 3rd Edition)



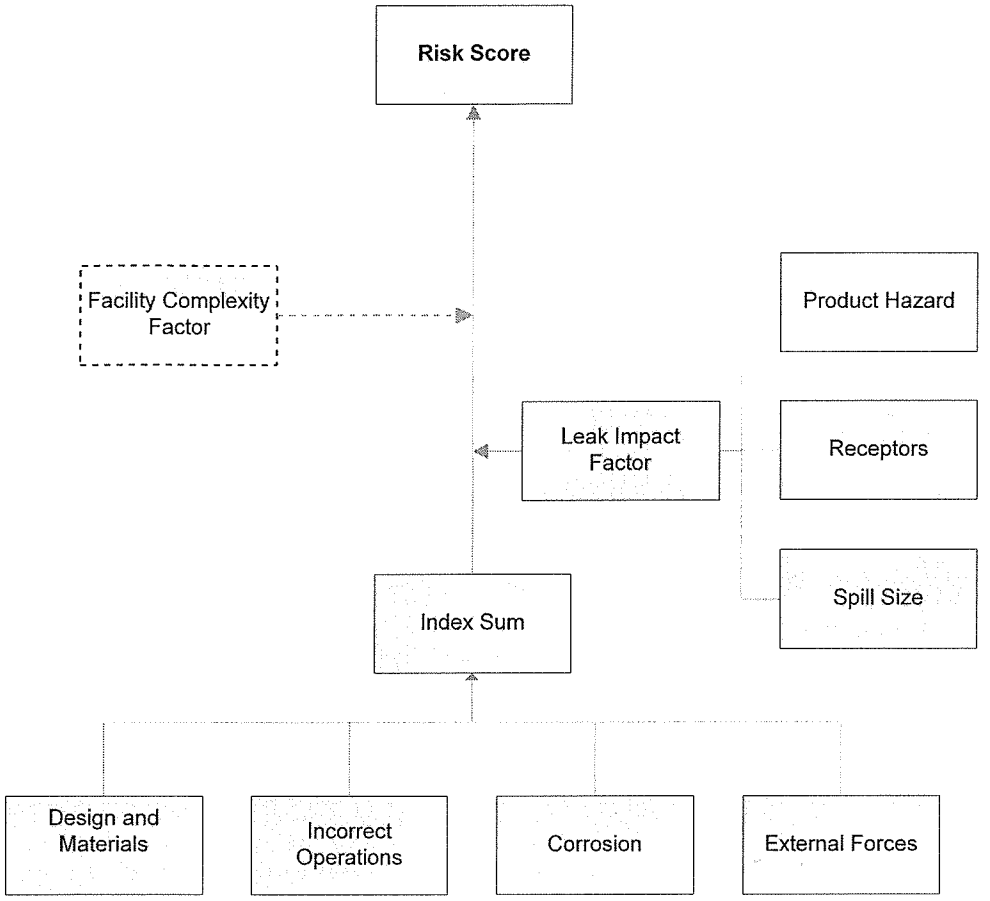
3.2 Risk Model Structure

The risk model for the COMPANY's pipeline facilities includes the following elements:

- Failure History Index (number of failures at the facility, applicable LPS incidents)
- Design and Materials Index (Design, Safety Factor, Fatigue, Surge Potential, Integrity Verification, Types of Equipment)
- Incorrect Operations Index (Construction, Operations, Maintenance)
- Corrosion Index (Atmospheric Corrosion, Internal Corrosion, Subsurface Corrosion)
- External Forces Index (Hurricanes, Earthquakes, Frost Heave, etc.)
- Tank Index (an average score of all individual tank scores in facility)
- Consequence Index (Product Hazard, Spill Size, Receptors)
- Facility Complexity Factor - Used only to compare risk between separate facilities

[**Likelihood Index**] = [Failure History]+[Design & Materials]+[Incorrect Operations]+[Corrosion]+[External Forces]

[**Risk Score**] = ([Likelihood Index]+[Tank Index])* [Consequence Index]



3.3 Risk Factors and Threats

COMPANY performed a thorough review of the incident history of the Company operated facilities, as well as industry statistics to determine the leading causes of facility-related releases. Based on industry data, such as the API Pipeline Performance Tracking System (PPTS), operating errors and equipment failure, followed by corrosion, are the top risk drivers for facilities. Non-pipe equipment failures historically include leaks from pump seals, valve stem seals, and threaded fittings. Third-party damage is rare because of limited access and security measures.

COMPANY collects and compiles data for each of the elements in the risk model, including data on likelihood contributors and consequence factors. Appendix C, "Facility Risk Data Gathering Form" includes the list the risk factors and threats (probability variables) and can be used when preparing for the risk assessment. This form can be used as a preliminary questionnaire to collect consistent data for each covered facility. It is not necessary to use this form when making annual updates to risk.

Each variable is assigned a weight (score) based on its relative contribution to the risk and whether it represents a potential threat (risk-increasing factor) or a lack of prevention/ mitigation (risk-reducing factor). The greater the score, the higher the risk.

In the initial risk assessment, the scores were assigned to variables and summed to get

category weights, each with a maximum of 100 points. Category weights were then added together to get the "Index Sum", which represents the failure (or likelihood) index. All scores are relative and do not indicate absolute risk.

This scale and algorithm, used for initial risk assessment, was further modified (as part of continuous improvement process) by COMPANY's subject matter experts based on new insights gained from conducting initial assessments. Refer to Appendix D.1, "Risk Algorithm and Scoring Procedure" for the probability variables included in the initial Risk Model and their assigned weightings. Appendix D.2 contains revised risk questions and scores.

Note: *The new Risk Model will be implemented no later than December 31, 2008.*

Any future changes to Risk Model will be documented, including the justification and impact of the change.

3.4 Potential HCA Impacts

The previous section discussed the likelihood side of the risk equation, addressing possible failure mechanisms. The Consequence Index is used to reflect the consequences of a failure.

This Index is calculated from an analysis of the potential product hazard, spill or leak size, release dispersion, and receptor characteristics. The higher point score for the index represents higher consequences and higher risk:

Consequence Index = [Product Hazard] × [Spill Size] × [Dispersion] × [Receptors]

A spill from a hazardous liquid facility can impact an HCA in different ways, depending on the type of failure and spill size, product hazard, dispersion, and receptors in the area of the release (HCAs). COMPANY focuses on understanding the significance and the magnitude of the potential release in order to properly assess the risks associated with a certain facility and design appropriate preventative and mitigative measures. The interaction between products and the surrounding receptors can be very complex and variable. The main focus of the Consequence Index is on consequences to public safety: high-population areas (HPAs) and other populated areas (OPAs), potential impact to the environment and ecological unusually sensitive areas (ECO USAs), drinking water intakes (DW USAs), and impact to commercially navigable waterways (CNWs). Additional consequence considerations, such as service interruption and clean-up costs are not considered in the current COMPANY Risk Model.

All COMPANY's facilities have several levels of pressure safety and leak monitoring systems (e.g. relief devices, tank overfill, tank bottom, seal piping, and sump float sensors or alarms), operations systems (monitoring of activities in the control room), secondary containments (e.g. seal leak piping, collection sumps, equipment pad drains, tank berms, stormwater controls), and emergency response actions. Therefore, small equipment-related leaks can normally be detected and corrective actions are taken before they can progress into large leaks and impact surrounding receptors.

Additional information on the impacts of releases can also be found in COMPANY's Facility Response Plans and OPA-90 Manuals.

Each variable component is assigned a weight (score) based on its relative contribution to the risk. The greater score represents higher consequence. The scores assigned to the Consequence Index components are summed to get variable weights. Because each variable is multiplied by all others, any individual variable can significantly impact the final

Consequence Index. For example, if any one of the components is zero, then the consequence (and the total risk) is also zero (i.e., if there are no receptors, then there is no risk). As each variable increases, the consequence and overall risk also increase, since Risk = Likelihood × Consequence.

Refer to Appendix D.1, "Risk Algorithm and Scoring Procedure", for the actual Consequence Index numerical values and weights included in the initial Risk Model. Appendix D.2 contains revised risk questions and scores.

3.5 Use of Actual Data

The special consideration is given to use as much "real" data as possible when making risk estimates. To accomplish that, COMPANY has modified the initial risk assessment model to minimize the subjective input from SMEs and increase actual data inputs.

The two areas in the risk assessment model where actual COMPANY data is utilized include "Failure History Index" and "Tank Index".

The "Failure History Index" takes into consideration data from COMPANY's LPS (Loss Prevention System) database. On an annual basis, LPS database is queried to identify incidents that are applicable to the DOT jurisdictional terminals. The risk score for "Failure History Index" is calculated by assigning a value to the incident severity classification (LPS Level 1, 2, 3a, and 3b) and multiplying that value by probability of that incident occurring at any given DOT jurisdictional facility. For example, if a certain type of valve failed at a non-DOT facility, the LPS event is reviewed and evaluated to determine is this particular valve exists at the DOT-jurisdictional facility, at what is the probability of failure at that facility, considering the differences in operating conditions, environment, maintenance history, etc.

By using this approach, COMPANY utilizes valuable information collected through LPS and applies it to the IMP-related risk assessment process.

The "Tank Index" evaluates each breakout tank at the facility and takes into consideration actual data about the tank attributes: age, type, storage capacity, safety systems, leak detection, etc. It also considers the information from the API 653 inspection records: the date of last API inspection, internal inspection interval, action items that were identified during the inspection, and compliance with API 653 interval. The "Tank Index" score is calculated for each tank separately, in order to have the ability to compare breakout tanks across CONPANY's terminals. For the overall facility risk score, the individual "Tank Index" scores are averaged and added to the "Likelihood Index". Appendix D.2 contains revised risk questions and scores.

3.6 Facility Complexity Factor

In order to compare the risk score of different terminals, COMPANY must account for the terminal's size, complexity, and density of problematic components. Using a Facility Complexity Factor (FCF), the facility size and complexity is adjusted to account for the relative increase in the "area of opportunity" for failures. For example, large and complex facilities have increased chances for corrosion, traffic impacts, equipment failure, etc. Complexity of a facility also can lead to more chances for human error. Therefore, larger and more complex terminals would be expected to show higher overall failure probabilities compared to smaller terminals. The methodology is based on the Equivalent Surface Area

(ESA) factor discussed in W. Kent Muhlbauer's "Pipeline Risk Management Manual", but has been modified to better fit COMPANY-specific facility complexity and operations.

COMPANY will calculate a FCF for each covered facility to determine their relative size and complexity. During COMPANY's evaluation of potential complexity factors, it was determined that the sum of the following factors could be used to estimate the relative risk

- Terminal throughput (in thousands of BBLS/year)
- Number of breakout tanks
- Number of DOT-jurisdictional pumps
- Number of DOT-jurisdictional valve manifolds
- Number of DOT-jurisdictional valves (not included in manifolds)
- Number of incoming or outgoing DOT pipelines
- Number of miles of DOT-jurisdictional pipe inside facility that sees mainline pressure

When comparing the relative-risk of facilities, COMPANY will calculate the FCF for each covered facility. The FCF is then multiplied by the facility Risk Score to determine the COMPANY-wide relative risk. It is important to note that during implementation, COMPANY may need to modify the FCF factor to better account for the actual release history at the specific facilities.

COMPANY shall therefore collect individual risk scores and FCF values for each of its DOT-jurisdictional facilities. The objective is to use the individual risk score to design preventative and mitigative measures for the individual facility. By incorporating the FCF, multiple facilities can then be ranked against each other to assist in risk-based resource allocation across COMPANY.

3.7 Process Steps

To assess the risk of the covered facilities, COMPANY will follow the following process steps:

- **STEP 1** - inventory all pipelines, pump stations, terminals, tank farms, metering and delivery stations and gather necessary data, as specified in Appendix C, "Facility Risk Data Gathering Form". COMPANY shall inventory all data sources and determine if significant data deficiencies exist. Additional actions and field data collection efforts may be necessary in order to have all of the specified data elements available to perform an assessment for each threat. If such data are not available, COMPANY will document the data gap and make conservative assumptions regarding how the particular threat applies to the facility being evaluated. COMPANY must be careful not to allow overly conservative assumptions that result from data gaps, to dilute known threats for which data does exist.
- **STEP 2** – for each facility, input data into the Risk Assessment Algorithm, using scoring procedures detailed in Appendix D, "Risk Algorithm and Scoring Procedure". The Facility-designated IMP Coordinator shall maintain the completed scoresheets, and document any adjustments or deviations from the assigned weightings.

- **STEP 3** – for each facility, apply algorithm and validate the results. It is important to ensure that the risk assessment has produced reasonable results, consistent across COMPANY's operated facilities. If a final number is not meaningful in practical, real-world sense, it is necessary to review input data, risk model assumptions, assigned weightings, and algorithm calculations to determine possible inaccuracies.
- **STEP 4** – After performing each facility risk assessment, COMPANY will analyze the data to determine the most significant risk drivers for each facility, including contributors to both likelihood and consequence. This information will be used to design preventative and mitigative measures for the individual facility. COMPANY will then apply the Facility Complexity Factor (FCF) in order to compare the relative-risk among separate facilities. The Risk Assessment results shall be documented and communicated to appropriate COMPANY organizational elements, including management, operations and maintenance personnel, and emergency responders. COMPANY will use the results to take corrective actions and select appropriate preventative and mitigative measures to reduce the risk.

3.8 Annual Risk Updates and Periodic Reassessments

To ensure current understanding about the condition of covered facilities, COMPANY shall periodically update all relevant data and information, and reassess the risk. When COMPANY acquires sufficient additional data from routine inspections, maintenance activities, completed risk assessments, or other sources, that affect the outcome and corresponding rankings, the risk assessment model must be updated with the new information. Specific activities that can initiate a reassessment are provided in Section 7.2, "Management of Change Process".

COMPANY shall conduct the periodic risk assessments and information analysis for each covered facility in order to determine the need for additional or revised preventative and mitigative measures. The methods used for reassessment will be reviewed and modified, as necessary, based on new insights and availability of improved risk management tools.

The minimum risk reassessment interval will be every 5 years unless a greater or shorter interval is determined to be appropriate during the SME meeting. This is a minimum interval for "Full Risk Assessment", which consist of evaluating all risk factors and full-spectrum of P&MMs. However, annually COMPANY will review LPS data, facility inspection records, and operational changes, and will update affected sections of risk model, if necessary. Specific P&MM activities can also be identified during the annual cycle. To determine the appropriate reassessment interval for "Full Risk Assessment", COMPANY will conduct SME meetings during the annual performance review to evaluate the following:

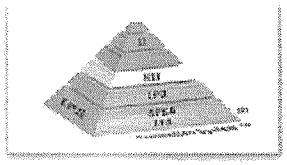
- Existing or scheduled preventative and mitigative activities
- Results from the previous risk assessment
- Changes in facility conditions or operating parameters
- Leak history
- Changes in receptors

COMPANY shall document the results of the SME meeting, including reassessment interval basis, technical justification, threats considered, and risk factors evaluated.

Any substantial changes that occurred since last risk assessment will be evaluate to determine their impact on IMP. The SMEs will re-schedule the risk assessment, if necessary, based on the new information. If no changes have occurred, and the current measures and IMP processes are effective in managing the facility risk, COMPANY may extend facility risk assessment interval beyond 5 years. However, this decision has to be justified by the Facility designated IMP Coordinator, including documented review and validation of previous risk assessment results.

The Facility designated IMP Coordinator must notify HES Manager of reassessment schedule and post it on COMPANY's intranet.

As the IMP develops over time, COMPANY will need to review risk variables and/or revise the assigned weightings. All changes made to the Risk Model and its algorithm must be documented in accordance with the requirements detailed in Section 8.0 of this IMP Plan, "Recordkeeping and Management of Change".



Loss Investigation/ Near Loss Investigation

Analysis for DOT IMP Risk Assessment
To be completed annually

Chevron

LPS Control No.	Loss Date	Terminal Name	Short Description of LPS event

LPS Level

- ⊙ Level 1
- ○ Level 2
- ○ Level 3a
- ○ Level 3b

Failed Component(s)

- ☐ Tank - shell
- ☐ Tank - bottom
- ☐ Tank - overflow protection
- ☐ Tank - fire
- ☐ Tank - other
- ☐ Valve - body
- ☐ Valve - flange
- ☐ Pressure safety system (PRV, PRV)
- ☐ Pump - seal
- ☐ Pump - pressure switch
- ☐ Pump - motor
- ☐ Pipeline - incoming or outgoing
- ☐ Facility piping - above ground
- ☐ Facility piping - buried
- ☐ Couplings & fittings
- ☐ Sump or separator
- ☐ Strainer or filter
- ☐ Meter or other SCADA component
- ☐ Auxiliary tubing
- ☐ Procedure

Classification of failure(s)

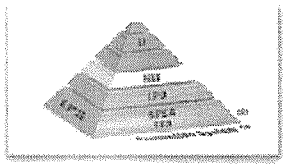
- ☐ Tank - all failures
- ☐ Pipe failures due to Operating Stress
- ☐ Pipe failures due to Cyclic stress or fatigue
- ☐ Pipe failures due to Corrosion
- ☐ Third party or other damage
- ☐ Natural force
- ☐ Vibration
- ☐ Equipment – Pump
- ☐ Equipment – Valve
- ☐ Flange
- ☐ Auxiliary Tubing
- ☐ Control & Instrumentation
- ☐ Valve Failures
- ☐ Flange Failures
- ☐ Sump/Separator
- ☐ Human Error

Failure Event

- ☐ Small non-reportable leak (contained)
- ☐ Reportable leak (contained)
- ☐ Large release (outside containment)
- ☐ Fire
- ☐ Abnormal Operating Condition (AOC)

What agency has a jurisdiction over failed system/process?

- ☐ DOT (PHMSA)
- ☐ USCG
- ☐ EPA
- ☐ OSHA



Loss Investigation/ Near Loss Investigation

Analysis for DOT IMP Risk Assessment

Chevron

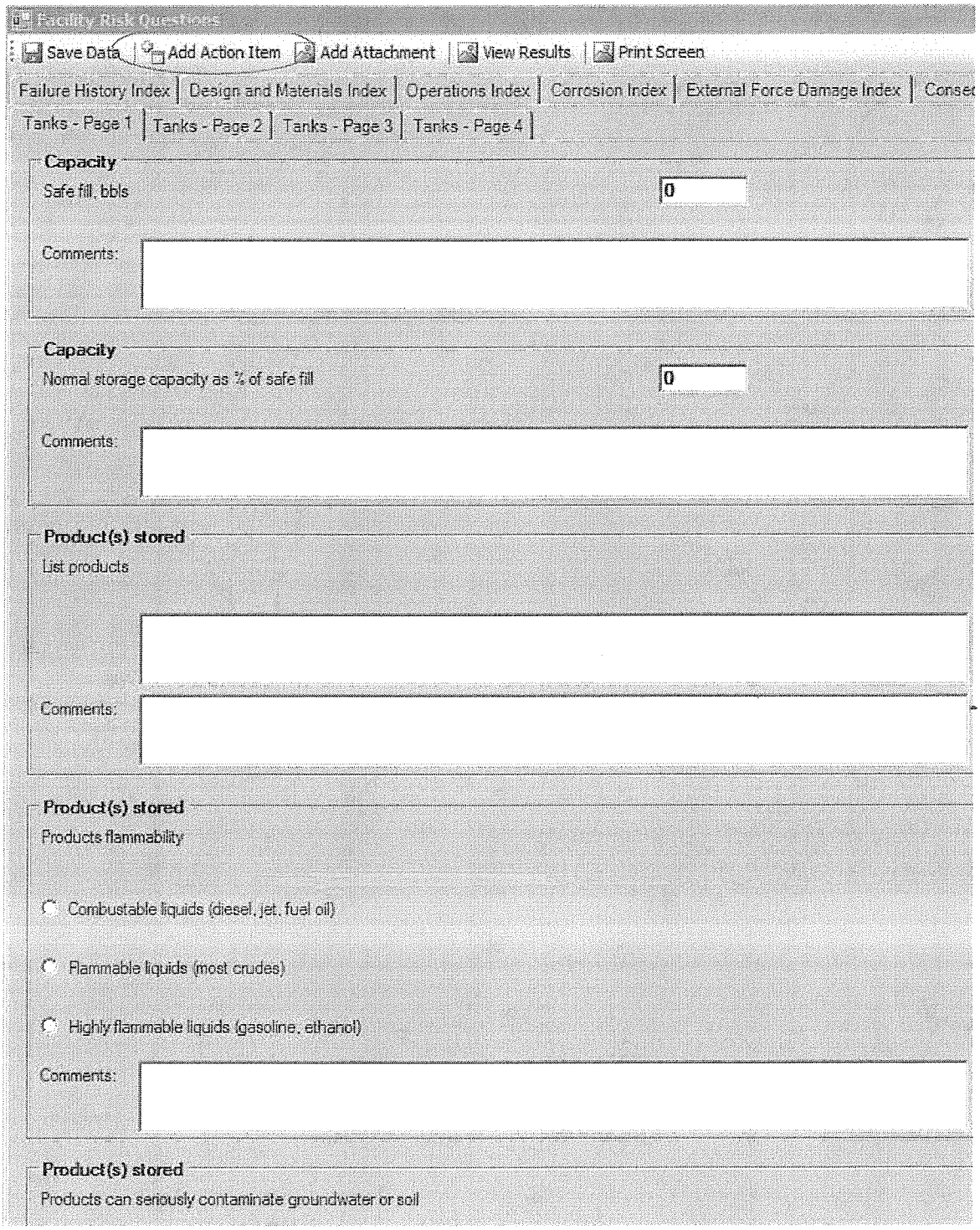
LPS applicability to other terminals:

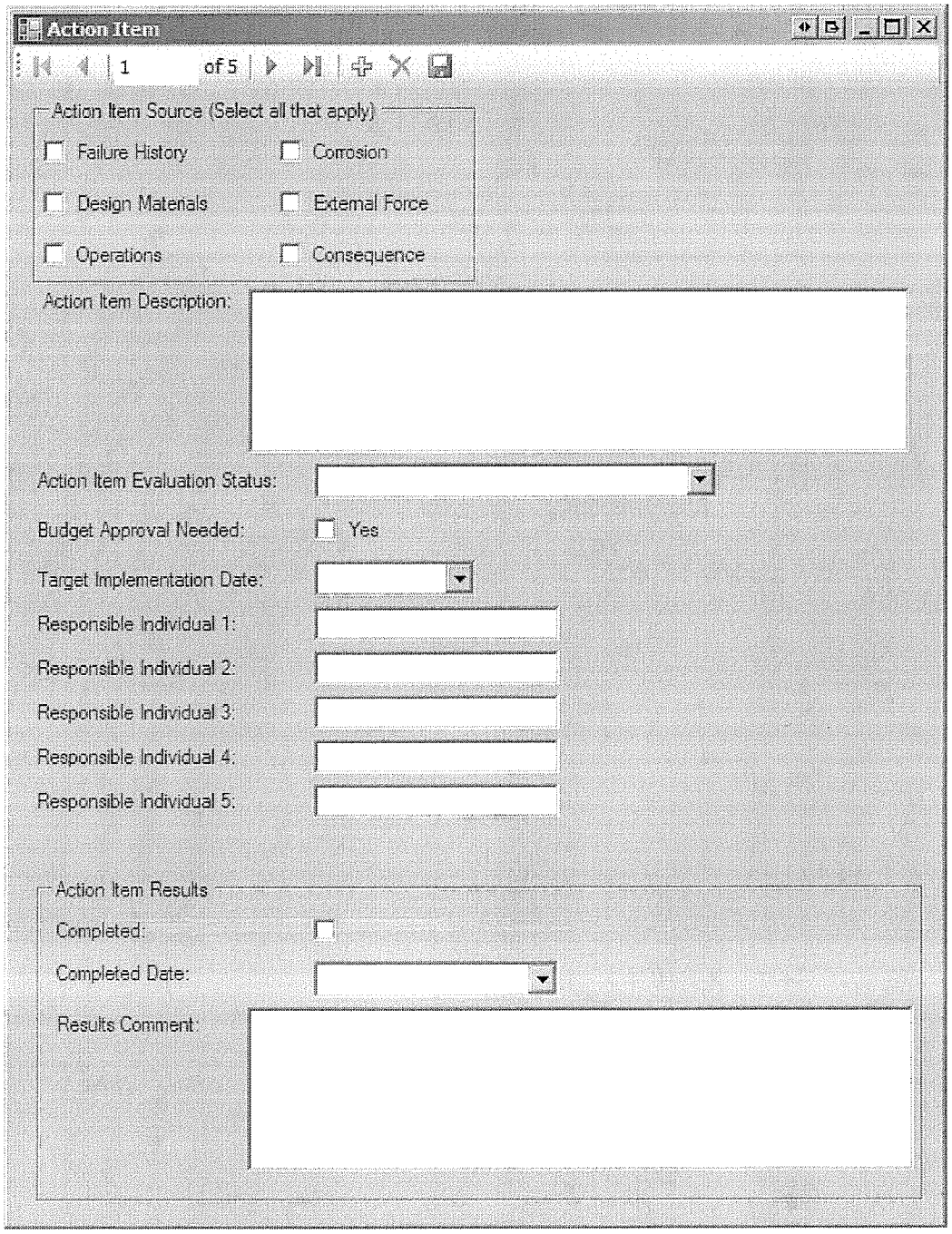
Which DOT terminals can LPS event be applied to?	How likely is the event to occur at this terminal?	Where additional measures taken to prevent the LPS event at this terminal?
Willbridge	☐ Very likely (50-100% chance) ☐ Likely (25-50% chance) ☐ Unlikely (5-25% chance) ☐ Very unlikely (0-5% chance)	☐ Yes ☐ No Describe measures:
Louisville	☐ Very likely (50-100% chance) ☐ Likely (25-50% chance) ☐ Unlikely (5-25% chance) ☐ Very unlikely (0-5% chance)	☐ Yes ☐ No Describe measures:
HMT	☐ Very likely (50-100% chance) ☐ Likely (25-50% chance) ☐ Unlikely (5-25% chance) ☐ Very unlikely (0-5% chance)	☐ Yes ☐ No Describe measures:
Hilo	☐ Very likely (50-100% chance) ☐ Likely (25-50% chance) ☐ Unlikely (5-25% chance) ☐ Very unlikely (0-5% chance)	☐ Yes ☐ No Describe measures:
SFO	☐ Very likely (50-100% chance) ☐ Likely (25-50% chance) ☐ Unlikely (5-25% chance) ☐ Very unlikely (0-5% chance)	☐ Yes ☐ No Describe measures:
Albuquerque	☐ Very likely (50-100% chance) ☐ Likely (25-50% chance) ☐ Unlikely (5-25% chance) ☐ Very unlikely (0-5% chance)	☐ Yes ☐ No Describe measures:

Category Label	Question Number	Question Label	Answer Text	Value	Min	Max	Calculation
Capacity							
	1	Maximum storage capacity, bbls					
			[Number, no decimals]	1-10	1	10	=bbls/10000 (1 pt min, 10 pts max)
	2	Normal storage capacity (safe fill) as % of maximum					
			[Number, no decimals]	1-10	1	10	=normal%/10
Product(s) stored							
	3	List products					
			[text input]	n/a			
	4	Products flammability					
			Combustable liquids (diesel, jet, fuel oil)	1	1		
			Flammable liquids (most crudes)	5			
			Highly flammable liquids (gasoline, ethanol)	10		10	
	5	Products can seriously contaminate groundwater or soil					
			Yes	5		5	
			No	1	1		
	6	Products are very dificult to clean-up					
			Yes	5		5	
			No	1	1		
	7	Significant bottom sediments and water are present in the product					
			Yes	5		5	
			No	1	1		
Design & Condition							
	8	Year built					
			[Number, no decimals]	1-15	1	15	=if (yearbuilt>1970,(current year - year built)/10,1.5*(current year - year bulit)/10)
	9	Year bottom replaced (enter year built, if n/a)					
			[Number, no decimals]	1-20	1	20	=if (yearreplaced>1980,(current year - year built)/10,2*(current year - year bulit)/10)
	10	Shell type					
			Full fusion butt-welded (BW)	1	1		
			Riveted welded (RW)	5			
			Riveted (RI)	10		10	
	11	Bottom type					
			Double bottom with liner (DBL)	1	1		
			Double bottom no liner (DB)	2			
			Single bottomwith liner (SBL)	5			
			Single bottom no liner (SB)	10		10	
	12	Roof type					
			Fixed roof	0	0		
			External floating roof	5		5	
	13	Roof Drain type					
			Not applicable (fixed roof)	0	0		
			Articulated pipe	3			
			Hose	5		5	
	14	Designed according to a recognized industry standard (API 620/650)					
			Yes	1	1		
			No	10		10	
Inspection							
	15	Annual tank inspections performed and documented?					
			Yes	1	1		
			No	10		10	
	16	API 653 Compliant (documented inspection w/acceptable interval and external inspections; all recommendations in API 653 report have been reviewed and implemented, if necessary)					
			Yes	1	1		
			No	5		5	
	17	Were there action items or additional repaires required by API 653 in order to qualify for the recommended interval?					
			Yes	10		10	
			No	0	0		
	18	Year of last internal API 653 Inspection (enter year built, if n/a)					
			[Number, no decimals]	1-19	0	20	=(current year-year inspected), max 20 pts
	19	Inspection interval recommended by most recent API 653 report	(if no inspection conducted, enter 10)				
			[Number, no decimals]	1-20	0	20	=(20-interval), max 20 pts
	20	API 653 status - Is the tank overdue for inspection? (calculated field)					
			Yes [calculated value less than 0]	20		20	=(years since last inspection - interval)
			Yes [calculated value eqals/greater than 0]	0	0		

Operations & Safety						
	21	Tank safety valve				
			Yes	1	1	
			No	5		5
	22	Tank gauging				
			Two stage instrumented level gauging, independent alarms	1	1	
			Two stage instrumented, not independent	3		
			One stage instrumented level gauging	5		
			Manual gauge	10		10
	23	Alarms and Monitoring				
			Local and remote	1	1	
			Local alarms only	5		
			None	10		10
	24	Level of attendance during normal fill operations				
			Full time	1	1	
			Personnel on site	5		
			Unattended	10		10
	25	Automatic shutdown on overfill				
			Yes	1	1	
			No	10		10
	26	Fire protection (fixed fire supression systems)				
			Yes	1	1	
			No	5		10
	27	Bottom leak detection				
			Yes	1	1	
			No	5		10

Min	Max
20	270
7%	100%


Facility Risk Questions
Save Data
Add Action Item
Add Attachment
View Results
Print Screen
Failure History Index
Design and Materials Index
Operations Index
Corrosion Index
External Force Damage Index
Tanks - Page 1
Tanks - Page 2
Tanks - Page 3
Tanks - Page 4
Capacity
Safe fill, bbls
0
Comments:
Capacity
Normal storage capacity as % of safe fill
0
Comments:
Product(s) stored
List products
Comments:
Product(s) stored
Products flammability
Combustable liquids (diesel, jet, fuel oil)
Flammable liquids (most crudes)
Highly flammable liquids (gasoline, ethanol)
Comments:
Product(s) stored
Products can seriously contaminate groundwater or soil


Action Item
1
of 5
Action Item Source (Select all that apply)
Failure History
Corrosion
Design Materials
External Force
Operations
Consequence
Action Item Description:
Action Item Evaluation Status:
Budget Approval Needed:
Yes
Target Implementation Date:
Responsible Individual 1:
Responsible Individual 2:
Responsible Individual 3:
Responsible Individual 4:
Responsible Individual 5:
Action Item Results
Completed:
Completed Date:
Results Comment: