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2013 Annual System Integrity Plan  
Self-Audit Report  
For  
Magellan Midstream Partners, L.P.  
Longhorn Pipeline  
November 12, 2014



## Table of Contents

1.0	Definitions.....	4
2.0	Introduction .....	5
3.0	Self-Audit Methodology .....	8
4.0	Significant System Developments in 2013 .....	9
5.0	Summary of Findings from the Self Audit.....	10
5.1	A synopsis of the most important integrity issues being addressed on the Longhorn Pipeline System and the status of activities and programs used to manage these risks....	10
5.2	Important insights, results, and lessons learned from the previous year. ....	10
5.3	Insights from new integrity management processes or technologies, or innovative applications of existing technologies. ....	11
5.4	Performance measurement results. ....	11
5.5	New integrity management programs or activities that will be conducted or significant improvements to existing programs and activities.....	12
6.0	Findings for the LMP Management Commitments.....	13
6.1	MC1: Longhorn Pipeline System Integrity “Process Elements” .....	13
6.2	MC2: Data Gathering and Identification and Analysis of Pipeline System Threats .....	13
6.3	MC3: Integration of System-Wide Activities .....	14
6.4	MC4: Incorporation of Engineering Analysis.....	14
6.5	MC5: Integration of New Technologies .....	14
6.6	MC6: Root Cause Analysis and Lessons Learned.....	14
6.7	MC7: Industry-Wide Experience.....	15
6.8	MC8: Resource Allocation .....	15
6.9	MC9: Workforce Development .....	15
6.10	MC10: Communication to Longhorn and Operations Management .....	16
6.11	MC11: Management of Change.....	16
6.12	MC12: Performance Monitoring and Feedback .....	16
6.13	MC13: Self Audit.....	16
6.14	MC14: Longhorn’s Continuing Commitment .....	16
7.0	Findings for the 12 LPSIP Process Elements.....	17
7.1	PE1: Longhorn Corrosion Management Plan.....	17
7.2	PE2: In Line Inspection and Rehabilitation Program .....	17
7.3	PE3: Key Risk Areas Identification and Assessment .....	18
7.4	PE4: Damage Prevention Program .....	18
7.5	PE5: Encroachment Procedures .....	19
7.6	PE6: Incident Investigation Program .....	20
7.7	PE7: Management of Change .....	20
7.8	PE8: Depth of Cover Program .....	21
7.9	PE9: Fatigue Analysis and Monitoring Program .....	21
7.10	PE10: Scenario Based Risk Mitigation Analysis.....	21
7.11	PE11: Incorrect Operations Mitigation.....	22
7.12	PE12: System Integrity Plan Scorecarding and Performance Metrics Plan .....	22
8.0	Recommendations .....	23
8.1	Recommendation - Training .....	23



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9.0	Conclusions .....	24
10.0	Appendices .....	25
10.1	Summary of key metrics for 2013 .....	25
10.2	Key documents reviewed for the 2013 SIP self-audit .....	28
10.3	Personnel Interviewed.....	29
10.4	Statements of Qualifications for the Auditors .....	30
	Stephen E. Gilliam .....	30
	<b>Deborah J. Brunt, P.E.</b> .....	<b>32</b>



## **1.0 Definitions**

CMS: Compliance Management System

Longhorn: the entire pipeline system and all parties including MMP

LOPA: Layer of Protection Analysis

LMP: Longhorn Management Plan

LPSIP: Longhorn Pipeline System Integrity Plan

MMP: Magellan Midstream Partners L.P. (the asset operator and owner as of August 27, 2009)

PHMSA: Pipeline and Hazardous Materials Safety Administration

PSSR: Pre-Startup Safety Review

SIP: Magellan Midstream Partners, L.P. System Integrity Plan

Operator: Magellan Midstream Partners, L.P. (MMP)

SBRMA: Scenario Based Risk Mitigation Analysis



## 2.0 Introduction

The Longhorn Pipeline System (Longhorn) was initiated in the mid-1990s, with the intent of converting an existing West Texas crude oil pipeline into refined products service, and reversing the flow to take refined products from the Houston Gulf Coast area to markets in West Texas and the Southwest US. The project encountered opposition from various groups, resulting in a lawsuit and eventual settlement as described in Table 1: History of the Longhorn System, below.

**Table 1: History of the Longhorn System**

1949 – 1995	Exxon constructed the 18"/20" pipeline, Crane to Baytown, to transport crude oil; operated and maintained / refurbished until pipeline was idled and purged with nitrogen.
Oct 21, 1997	Longhorn acquired the existing (idled) pipeline from Exxon.
April 1998	National Environmental Policy Act (NEPA) lawsuit filed in Federal Court in Austin.
1998/1999	<ul style="list-style-type: none"> <li>• Cleaning and refurbishment of the existing pipeline;</li> <li>• Construction of new pump stations (Galena Park, Satsuma, Cedar Valley, Kimble County, Crane, and El Paso)</li> <li>• Construction of El Paso Terminal</li> <li>• Construction of pipeline extensions: 18" Crane to El Paso; 8" Crane to Odessa; 20" GATX to Tie-In; and 8" and 12" pipelines from El Paso Terminal to tie-ins with other systems.</li> </ul>
March 1999	Settlement Agreement requires Environmental Assessment, which ultimately leads to the Longhorn Mitigation Plan.
November 2000	Finding of No Significant Impact issued and Longhorn Mitigation Plan published.
2001 – 2004	Pre-Startup Mitigation Commitment Activities Performed
January 27, 2005	Official startup date for the Longhorn pipeline system.
August 2006	Flying J acquires Longhorn Partners Pipeline, L.P.
August 27, 2009	Magellan Pipeline Company, L.P. purchased the Longhorn pipeline.
March 2013	Flow direction reversed and product transported changed to crude oil (East Houston to Crane).

Longhorn agreed to implement a Longhorn Mitigation Plan (LMP) as part of the original Environmental Assessment (EA) conducted. The LMP was supplemented twice, immediately after it was originally developed. The LMP includes 40 “Mitigation Commitments” that addressed various integrity issues on the Longhorn system both before and after startup. The LMP also committed Longhorn to implement the Longhorn Pipeline System Integrity Plan (LPSIP), which includes three main elements:



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1. Management Commitments (14 total), addressing various integrity management programs for the pipeline system, including a commitment to conduct a self-audit of the LPSIP each year,
2. LPSIP Process Elements (12 total), addressing various risk management processes for the pipeline system, and
3. An Operational Reliability Assessment (ORA), providing an independent technical analysis of various integrity threats on the pipeline system.

Magellan contracted with RCP Inc., a regulatory and engineering consulting firm, to perform the Longhorn Pipeline System Integrity Plan annual self-audit. This 2013 self audit report is written to comply with this requirement. The Mitigation Commitments and the Operational Reliability Assessment reports are addressed in a separate reporting process and are not included as part of this effort.

The overall structure of the LMP, Mitigation Commitments, LPSIP, Management Commitments, Process Elements, and Operational Reliability Assessment are depicted in Figure 1: LMP Organization. In this report, the 14 Management Commitments will be referred to sequentially as MCxx. Likewise, the 12 LPSIP Process Elements will be referred to sequentially as PExx. The Table of Contents for this document provides an easy reference, as the section numbers for the Management Commitments and Process Elements correspond with the appropriate MCxx or PExx number. For example, MC13 refers to the Management Commitment to perform a self-audit, and is discussed in section 13 of “Findings for the LMP Management Commitments”. Likewise, PE7 refers to the Management of Change Process Element, and is discussed in section 7 of “Findings for the 12 LPSIP Process Elements”, and so forth.

# LONGHORN MITIGATION PLAN [LMP]

[INCLUDING SUPPLEMENTS 1 AND 2]

## Mitigation Commitments

40 very specific “to-do” activities to mitigate specific risks on the pipeline system

## System Integrity Plan [LPSIP]

### Management Commitments

14 Management-Level Commitments:

- Includes a commitment to implement the 12 System Integrity Process Elements (below)*
- Includes a commitment to perform an annual self-audit of the LPSIP*

### System Integrity Process Elements

12 programs designed to manage system integrity

### Operational Reliability Assessment (ORA)

A detailed, independent technical assessment of key risk management activities for the system

Figure 1: LMP Organization



### **3.0 Self-Audit Methodology**

The self-audit team was composed of 2 representatives from RCP Inc., both experienced auditors with over 50 years of combined experience in the industry. The auditors' statements of qualifications are given in the appendix to this report. Auditors reviewed the LMP, the LPSIP, and the SIP as well as various documents from Longhorn as listed in the appendix, including policies and procedures, work activity reports, agreements with third parties, performance tracking spreadsheets, and other relevant compliance documents. They also interviewed personnel from MMP in Austin, Houston, Tulsa, and El Paso, including personnel in field operations and corporate management. The facilities at the El Paso terminal were included as part of the field inspection process. A complete list of personnel interviewed is given in appendix 10.3 to this report. If more than one person had held the same position during 2013, the auditors generally interviewed all those personnel at once. All the field activities for the audit were performed in March – May 2014.

The auditors developed the opinions and findings in this report based on the interviews and documentation, using their best professional judgment and experience. Interim audit findings were reviewed with MMP to ensure that they were factually correct and considered all appropriate information. However the findings and conclusions in this report are the independent work of the audit team and are based on requirements defined in the Longhorn Mitigation Plan, System Integrity Plan, and in Federal Pipeline Safety Regulations.





## **4.0 Significant System Developments in 2013**

During 2013, Magellan continued to implement system integrity activities as required by Federal Pipeline Safety regulations and the LMP.

The Longhorn Reversal Project was started in 2012 and the Longhorn Pipeline was out-of-service from August 2012 to March 2013 as part of this project. Phase I, completed in 2013, encompassed changes to existing pump stations, removal of check valves, and other work required to enable the pipeline to flow 135,000 BPD of crude oil from Crane to East Houston. Phase II of the Reversal Project, the addition of six new stations and modifications at six existing stations, allowed an increase in flow rate to 225,000 BPD. Phase II was completed at the end of 2013.



## 5.0 Summary of Findings from the Self Audit

As mentioned above, the LMP requires that a self-audit of the LPSIP be completed each year. The LMP specifically requires that the self-audit address 5 “core areas” of system integrity. Each of the 5 listed core areas is addressed below. Subsequent sections of this report address each of the 14 Management Commitments and the 12 Process Elements in the SIP.

### 5.1 A synopsis of the most important integrity issues being addressed on the Longhorn Pipeline System and the status of activities and programs used to manage these risks.

The activities and programs used to manage risk on the Longhorn system are addressed individually in the Management Commitments and Process Elements sections of this report. The activities and programs used to manage risk on the Longhorn system are mature, and the audit indicated that these programs are effective and appear to be functioning as designed. Process improvements for the programs are described in the Recommendations section of this report.

Longhorn Pipeline’s Reversal Project and changing from the shipment of refined products to crude oil has created additional challenges for Integrity Management. Internal Corrosion is now one of the most important risk issues to be addressed and the complexity of operations has added a requirement for additional training. Increased maintenance pigging and the addition (in 2012) of a corrosion technician focused on internal corrosion provides additional processes that addresses internal corrosion risk. Compliance with procedures in the SIP, increased training, and an additional two technicians will also minimize the second risk.

An additional integrity risk is natural forces such as flooding and earthquakes. MMP is implementing new programs to address these risks (see 5.5).

### 5.2 Important insights, results, and lessons learned from the previous year.

MMP issued 11 “Lessons Learned” bulletins in 2013. Lessons Learned bulletins issued were not initiated by incidents that occurred on the Longhorn System.

The success of the Reversal Project was dependant on good communication, planning and employment of experienced personnel. During the interview process some indicated if MMP employees rather than contractors had been used as Project Managers, project management and communication with construction contractors could have been improved.

In recent years, the Longhorn Pipeline and MMP have experienced tremendous growth and employees are now operating an increasingly complex system. This has resulted in the need to ensure adequate training and quality checkouts when placing new equipment in service or changing operations.



The Public Awareness effectiveness survey indicated changes are needed to clarify the material and emphasize the most important points, particularly for emergency responders.

### **5.3 Insights from new integrity management processes or technologies, or innovative applications of existing technologies.**

The risk model for the Longhorn Pipeline was updated to a “Probabilistic Model” as opposed to the previous model which was a “Relative Risk Model”. The new model uses significantly more data and the data can now be imported rather than manually entered into databases.

As a segment of the Corrosion Prevention Program during 2013 the following surveys were conducted: (1) a close interval survey (interrupted and native) and (2) an AC Potential survey. These surveys will be repeated every five years.

An inline inspection of the Longhorn pipeline using a hard spot inspection tool was conducted in 2013. Two locations were identified and were excavated for further analysis in 2014 but no hard spots were found.

The Reversal Project Environmental Assessment required a new Material Documentation Plan that was implemented in 2013. This plan includes the following documentation; (a) material documentation indicating all pipe segments meet API 5L standard, (b) cut-outs for material testing, (c) non-destructive testing of pipe for at least 50% of all annual pipe excavations associated with in-line inspection anomaly evaluations or remediation, (d) documentation of pressure ratings of valves, fittings, etc. and (e) inclusion of any undocumented pipe segments in MMP’s integrity management plan.

To enhance Public Awareness and Damage Prevention, MMP participated in a new collaborative mailing to farmers in Texas. Information about pipelines was mailed to 81,000 farmers.

### **5.4 Performance measurement results.**

The “scorecard” for 2013 is given in appendix 10.1 to this report. There were 2 DOT-reportable releases in 2013. The release at Warda Station in a Tier 1 area was due to contractor human error. The pipeline release at MP 172 was also due to contractor human error.

There were two One Call violations. In one instance the contractor installing a driveway had not called for locates. In the second instance, the contractor had contacted One Call but did not correctly indicate the entire excavation area. The area indicated on the One Call ticket excluded the Magellan right-of-way. No damages occurred as a result of these One Call violations. MMP sent letters to both excavators.



**5.5 New integrity management programs or activities that will be conducted or significant improvements to existing programs and activities.**

As required by the Material Documentation Plan, non-destructive testing of pipe segments in at least 50% of the excavations or remediations required by ILI results will start in 2014.

A spare parts inventory to address reliability and redundancy will be implemented.

An automated notification system, using data from the U.S. Geological Survey, was implemented in early 2014 to notify critical employees when seismic activity occurs. MMP is also considering a similar system for notifications when flooding occurs.

Improvements in data integration with the new PODS database will continue in 2014.

The Management of Change (MOC) form is being revised.

The Public Awareness/Damage Prevention program for the Houston school system will be re-evaluated in 2014 to improve participation. MMP is also using a focus group to evaluate their Public Awareness/Damage Prevention materials used for mailings.

In Operations, knowledge gaps are being identified so that training can be scheduled to address them. Maintenance Technicians will receive training from Rockwell on pumps and variable speed drives (VSDs).



## 6.0 Findings for the LMP Management Commitments

The 14 Management Commitments described in the LMP are addressed below.

### 6.1 MC1: Longhorn Pipeline System Integrity “Process Elements”

The first of the 14 Management Commitments addressed in this section of this report commits Longhorn to implement a System Integrity Plan (SIP) consisting of 12 “process elements” that are “over and above” the federal and state regulatory requirements. The 12 SIP elements are addressed in the next section of this report.

### 6.2 MC2: Data Gathering and Identification and Analysis of Pipeline System Threats

There is a significant program in place to accumulate and integrate a wide array of information related to the operation and integrity of the Longhorn system, as described in LMP section 3.2.2. MMP has dedicated a full time person to this task, who receives information from many different data sources that is compiled and entered into the Longhorn risk model on a monthly basis. This information is also forwarded to the Operational Reliability Assessment contractor, who performs their own evaluation of the data. MMP has also dedicated a full time Risk Engineer for the Longhorn system to work with all Subject Matter Experts (SMEs) related to the Longhorn system to evaluate risks and ensures compliance with the SIP, LMP and Federal Regulations. Additional material information was collected and organized into the PODS database to comply with a requirement of the Reversal Project’s Environmental Assessment.

MMP continued to perform Incident Investigations during 2013. There were 8 incident investigations completed in 2013. These investigations are not limited to incidents that are reportable to government agencies, and include other types of operational incidents such as near misses. The results of these incident investigations are shared broadly throughout MMP. Likewise, MMP captures information concerning Incorrect Operations (IOs), and summarizes this information on a spreadsheet on a quarterly basis to identify trends and potential areas for improvement. Incorrect Operations data is drawn from Abnormal Operations (AOs), incident investigations (IIs), and Hazard / Near Miss (HNM) cards (described in item 11 of the SIP process elements). MMP manages changes to the Longhorn system through SIP process Element 11 – Change Management. Management of Change Requests (MOCR) are listed on a report which is widely distributed throughout MMP to personnel responsible for Longhorn operations. This report provides a quick reference as to whether the MOCR is either open or closed.

The LMP also commits Longhorn to conduct an annual Third Party Damage Prevention Program Assessment. The draft assessment for 2013 was conducted and the draft was reviewed.



### **6.3 MC3: Integration of System-Wide Activities**

Using information from the data gathering processes mentioned above and the data tracking and scorecard processes mentioned in PE 12, Longhorn conducts system-wide reviews of activities to ensure that all relevant information about the operation and integrity of the system is considered and evaluated on a routine basis.

A Mitigation Plan Scorecarding and Performance Metrics document is prepared and reviewed quarterly. Incidents are reviewed on a quarterly basis by Operations Directors, VP of Operations, and VP of Technical Services.

Lastly, the Operational Reliability Assessment (ORA) provides a comprehensive, independent technical review of all types of threats to the Longhorn system on an annual basis.

### **6.4 MC4: Incorporation of Engineering Analysis**

Longhorn consistently obtains the assistance of engineering experts (both inside the organization, and from third parties) to help identify, manage, and resolve potential integrity issues on the pipeline system. The results of each in-line inspection are reviewed by independent pipeline assessment experts who perform an independent analysis and identification of any additional areas for physical inspection of the pipe based on statistical analysis of the results (known as the “*probability of exceedance*”, or POE, review). The results of ILI tool runs are also sent to a third party to conduct seam or girth weld assessments, depending on the type of assessment tool used.

### **6.5 MC5: Integration of New Technologies**

Longhorn continues to incorporate new technologies for the operation of the system, and to evaluate the use of additional technologies as appropriate.

A new program to non-destructively test pipe segments where pipe grade is unknown in at least 50% of the excavations or remediations required by ILI results will begin in 2014. In 2013, this was piloted to compare the results of the non-destructive tests with laboratory analysis of pipe cutouts. The non-destructive test results were consistent with the lab results and pipe documentation.

### **6.6 MC6: Root Cause Analysis and Lessons Learned**

This Management Commitment refers to the implementation of a formal incident investigation program for actual and near miss events, and for repairs that are made to correct deficiencies in system integrity. This program is described in PE6.



MMP uses a “Lessons Learned” program to share information and key learnings throughout the company. MMP issued 11 “Lessons Learned” bulletins in 2013, addressing various issues.

MMP conducts monthly SIP meetings in Austin, El Paso, Houston, and Crane/Odessa, where SIP procedures, HNM cards, other accidents and lessons-learned are reviewed with operating personnel.

### **6.7 MC7: Industry-Wide Experience**

Longhorn continues to benefit from the industry-wide sharing received by participation in industry and governmental committees. MMP personnel, including senior executives, continue to participate in industry organizations and committees. These committees and organizations include those such as the API/AOPL Pipeline Performance Excellence Team (PET), DOT’s Technical Hazardous Liquid Pipeline Safety Standards Committee (THLPSSC), Pipeline Information Exchange (PIX), API’s Environmental Health and Safety Group, the American Society of Safety Engineers, and the NE Oklahoma Damage Prevention Council.

### **6.8 MC8: Resource Allocation**

Funds and personnel are made available as required to implement the requirements of the SIP. Allocation of resources is done on an MMP-wide basis. Discretionary expenditures are reviewed and approved by the Maintenance Capital Expense Management Team (MCEMT), composed of the VP of Technical Services and the VP of Operations.

MMP uses a Project Assessment Tool (PAT) to risk-rank proposed projects for health, safety, environmental, and commercial risks. Phase II of the Reversal Project was completed in 2013. While there are no dedicated funds for Longhorn discretionary expenditures, all personnel who were interviewed during the auditing process expressed their belief that Longhorn has adequate resources from a financial standpoint. The Longhorn system still has dedicated resources, including a full time integrity engineer and a full time risk model and data/ORR coordinator. There was some personnel turnover for Longhorn in 2013 due to attrition. One new Technician position was added in 2013 at El Paso Terminal with responsibility for Controls. Two new pipeline Maintenance Technician positions will be added in 2014 to address long response times.

### **6.9 MC9: Workforce Development**

MMP continues to use their new employee “on-boarding” process. This process includes an orientation on the SIP.

All Longhorn controllers receive annual training on the simulator for abnormal operating conditions and “Code Red” response (leaks). Controllers also receive annual leak detection training. Controllers also participated in a field trip (Crane, Cedar Valley, East Houston and block valve sites) in 2013 and another field trip is planned for 2014.



Training for technicians is primarily conducted by local Operations management. Supervisors prepare Individual Training Plans (ITPs) for their employees.

#### **6.10 MC10: Communication to Longhorn and Operations Management**

This commitment is no longer relevant, since MMP both owns and operates the Longhorn pipeline system and there is no separate Longhorn management structure with which to communicate outside of MMP itself.

#### **6.11 MC11: Management of Change**

This management commitment refers to the implementation of a Management of Change Program. The LMP requires that all documents and files affected by the change be identified and modified on a timely basis. MMP's management of change process is described in SIP Element 11 and is addressed in section PE7 of this report.

#### **6.12 MC12: Performance Monitoring and Feedback**

This management commitment is addressed in PE12.

#### **6.13 MC13: Self Audit**

The LPSIP self-audit has been prepared each year as required. This report is in response to the 2013 LPSIP self-audit. The auditors' recommendations are given in the "Recommendations" section of this report.

#### **6.14 MC14: Longhorn's Continuing Commitment**

Longhorn continued to implement the programs required by the LMP in 2013. All personnel interviewed by the auditors indicated that financial and personnel resources were adequate to ensure the integrity of the Longhorn pipeline.





## 7.0 Findings for the 12 LPSIP Process Elements

The 12 process elements described in the LMP are addressed below.

### 7.1 PE1: Longhorn Corrosion Management Plan

A close interval survey was performed as required by the Environmental Assessment. Results were that almost 68% of the mileage tested met the -850mV criteria and more than 98% of the mileage surveyed met the 100mV shift criteria. All locations met at least one industry-accepted criterion for adequate cathodic protection.

An AC potential survey was conducted in 2013. Twenty (20) locations were identified with readings greater than 5 volts. These locations were tested per MMP's procedure on Testing for Induced AC and Remedial Measures and found to not require AC Mitigation due to AC current densities being less than 20 A/m<sup>2</sup>. However, MMP is planning to install AC mitigation in 2014. This project will include additional ground beds and zinc grounding with DC decouplers to provide additional grounding in the area where AC readings were greater than 5 volts.

Atmospheric corrosion inspections were performed as required and no locations were identified as needing repairs.

One API 653 internal inspection was completed at the El Paso terminal in 2013.

Internal corrosion is monitored through the use of corrosion coupons, which are inspected three times a year. The coupon results have not indicated any internal corrosion problems. Corrosion inhibitors are used to ensure minimal internal corrosion. There were some problems with installations of coupons and improper processing of coupons in 2013. The procedures were reviewed with Operations personnel to address these problems.

### 7.2 PE2: In Line Inspection and Rehabilitation Program

Sixty-five (65) digs were performed for the 2011 EGP/MFL run and the 2009 and 2010 UT tool runs. Additionally, 4 digs were performed for the material documentation requirement of the Reversal Project EA. The Probability of Exceedance (POE) digs indicated expected corrosion growth rates or less than expected rates. MMP applies HCA remediation timeframes even to Longhorn pipe segments outside of HCAs. All rehabilitation was conducted in the necessary timeframe.

A deformation and metal loss inline inspection tool was run in 2013 and results received in 2014.

MMP follows recent industry standards to ensure the quality of ILI runs, and uses conservative methods to re-calibrate ILI results when determining what ILI indications to dig. The ORA contractor performs a statistical analysis of the ILI data to identify any additional areas for



physical inspection, beyond those that would normally be inspected, as an extra precaution. The ORA process provides a detailed, independent analysis of all ILI data. The schedule for recent ILIs has been driven by the mitigation commitments, and has not been altered by ORA technical analysis.

Results of in-ditch material testing for the Material Documentation Plan compared favorably to laboratory tests of cutouts.

### **7.3 PE3: Key Risk Areas Identification and Assessment**

It should be noted that the Longhorn system is regulated under the PHMSA pipeline integrity management regulations in 49 CFR 195.452, which includes requirements for the identification and management of High Consequence Areas, including populated areas. The populated area information and resulting pipeline integrity management programs are periodically updated as required by this regulation.

### **7.4 PE4: Damage Prevention Program**

One (1) new exposure was identified by the Right of Way maintenance crew and it was inspected and matted in 2013. Six (6) existing exposures were monitored and are stable. Three (3) washouts were repaired in 2013 and will continue to be monitored.

The aerial patrol program is well organized, and surveillance occurs more frequently than required. Flights are conducted in both directions (up the pipeline one day, and back in the other direction the next). That gives the aerial patrol observer the ability to spot potential issues from both perspectives on a regular basis. An operations person flies with the pilot annually to make sure the flight is taking the correct path.

An aerial photo survey is conducted every 5 years to look for scouring of 13 water crossings. The last survey was conducted in 2010.

There are locations of shallow pipe in agricultural areas, and no-till agreements are obtained when possible for those areas. These agreements give a financial incentive to farmers to not use the ROW for farming activities. COMs (Coordinators of Operations and Maintenance) are reminded on an annual basis about the no-till agreements in their area, and they confirm and document that the land use has not changed. The agreements are renewed every 5 years. There are a total of 10 no-till agreements, and 6 areas where they have been pursued but not obtained. There were no new no-till agreements obtained in 2013.

There were two ROW near misses. In one instance, a contractor had called One Call but incorrectly described the excavation area as not including the Longhorn ROW when it did. A Magellan Technician saw the contractor near the ROW and stopped the work. In the second instance, a contractor was installing a driveway over the pipeline without notifying One Call.



Execution of the public awareness program for Longhorn was implemented as required by the LMP. An annual mailing was conducted for residents and other establishments within 2 miles of the pipeline in rural areas and ¼ mile of the pipeline in metropolitan areas, excavators and farmers within 10 miles of the pipeline, and emergency responders and public officials within the county plus 20 miles. A supplemental mailing was sent to all parties involved in unauthorized encroachments. Response cards have been included in the mailings since 2007. Since 2011, the mailings have been in envelopes which have resulted in a larger number of returned response cards. In 2010, there were 81 responses, in 2011, there were 638, in 2012, there were 824 responses, and in 2013, responses were received from 669 mailings. The percentage of replies that state that they know how to identify a pipeline was very high at 92%. Those who claim that they were aware of the need to call One Call before digging increased from about 80% to 93%. In 2013, a large percentage of respondents, 85%, indicated that they are confident in their ability to recognize a leak and know how to respond to a leak. Respondents also believe that Magellan has done a good job of informing people about pipeline safety, with 90% agreeing with this statement and only 5% disagreeing.

MMP participated in an additional jointly sponsored mailing that was sent to 81,000 Texas farmers. Response cards were received back from about 1,100 recipients.

Door-to-door visits will be conducted in 2014 over the entire pipeline.

Longhorn COMs participated in group emergency responder and excavator meetings in 25 counties. Face-to-face meetings were conducted with 120 emergency responder locations, covering all 25 counties. There were an additional 11 group meetings with emergency responders along the ROW.

Longhorn continues to operate a school outreach program targeted at 4<sup>th</sup> and 5<sup>th</sup> grade students, but has had difficulty getting schools to participate. In the Austin area, 17 schools were targeted and 5 participated, reaching 563 students. In the Houston area, 1 school participated in the “Safe at Home” program, reaching 116 students.

MMP sponsored an 811 billboard near the Longhorn pipeline between Austin and Bastrop, ran an ad in the Spanish language newspaper “El Mundo”, placed ads in the Odessa and Pecos newspapers and in the “Texas 811” magazine, and participated with a collaborative group on an 811 media day on 8/11/2013. The farm store kiosk program was continued in 2013. The “Call Before You Dig” banner on the fence at Satsuma Station remained in place until April 2014.

## **7.5 PE5: Encroachment Procedures**

Operations personnel are keenly aware of the need to prevent unauthorized encroachments and to properly manage authorized encroachments. An encroachment agreement is executed for every authorized encroachment. MMP uses two different encroachment agreements: a “short form” that is used for routine activities (such as installing utility lines across the ROW), and a “long



form” that is used for more complex situations such as land development. The land representative is informed of every encroachment agreement, and reviews them to ensure that they are appropriate. These are retained permanently in the TRACT land files.

There were a total of 116 encroachment agreements in 2013. One new encroachment agreement for a school driveway was executed in 2013. There were no unauthorized encroachments, as compared to 3 in 2009, one in 2010, none in 2011, and two in 2012. MMP gathers ROW near miss and unauthorized encroachment data in the Mitigation Plan Scorecarding & Performance Metrics report. Although unauthorized encroachments are not uncommon for any pipeline, near misses and unauthorized encroachments reinforce the need for an active ROW patrol program, in addition to the public awareness programs.

## **7.6 PE6: Incident Investigation Program**

To promote awareness of hazards and to ensure “near misses” are identified, MMP uses a hazard/near miss (HNM) card (note that these operational “near misses” are not the same as the ROW “near misses” described in PE4). All operations employees are encouraged to complete these cards (a lot of HNM cards is better than just a few). There were 4 HNM reports for 2013, versus 3 in 2012 and 7 in 2011.

The LPSIP requires that incident investigations (IIs) be performed for accidents, incidents, repairs, and near misses (“close calls”). The Incident Data Report form (13-FORM-1301) includes checkboxes to identify the event as Minor, Serious, or Major. Longhorn did 8 Incident Investigations in 2013, versus 9 in 2012 and 13 in 2011. Three incidents were due to equipment failures, three were due to human error, one was an abnormal operating condition, and one was a One Call near miss. Note that IIs for the Longhorn system are reviewed on a monthly basis.

Incident Investigations and Hazard/Near Miss reports are analyzed and Lessons Learned bulletins (see MC7) are generated if any lessons learned can be applied globally.

MMP conducts a quarterly review of all incident data with the VP of Operations, the Operations Directors, and the VP of Technical Services. The auditors did not investigate the level of detail or trending that is reported to management or the outputs that may come from these reviews.

MMP has an action item (AI) tracking process that tracks IIs, HNM cards, and SIP meeting action items. The AI tracking process excludes action items that are performed immediately. The Safety Specialists participate in Hazard Near Miss Action Item meetings with the Manager of Operations, Area Supervisors, Asset Integrity personnel, and the Compliance Coordinator. They modify the Action Items as needed and trend Hazard Near Misses company-wide.

## **7.7 PE7: Management of Change**

MOCRs for the Reversal Project were tracked separately.



MMP's management of change process is described in SIP Element 11. The LMP requires that all documents and files affected by the change be identified and modified in a timely basis.

The LMP requires that all changes on the Longhorn system "be evaluated using an appropriate hazard analysis (HAZOP, what-if, LOPA etc.)." The MMP MOCR form includes a yes / no checkbox to indicate whether a Process Hazard Analysis is required, and MMP's procedures provide that the asset integrity engineer should determine the appropriate PHA methodology for change requests. Longhorn did not perform any Layer of Protection Analysis (LOPA) analyses in 2013.

The SIP requires that Pre-Startup Safety Reviews (PSSR's) occur prior to bringing new equipment into operation or prior to bringing modified equipment back online. The MOCR form includes a signature line in the MOCR Closure Approvals section that confirms whether a PSSR was completed.

#### **7.8 PE8: Depth of Cover Program**

The depth of cover program is tracked as part of the Asset Integrity (AI) report. The last depth of cover survey was conducted in 2007. Ten locations on the Longhorn Pipeline were noted in the AI report as shallow or exposed. Eight (8) sites have been repaired and are no longer exposed.

In-line inspections to-date have not identified any correlation between shallow pipe and excavation damage, which indicates that this threat is being adequately managed.

#### **7.9 PE9: Fatigue Analysis and Monitoring Program**

The fatigue analysis and monitoring program is conducted as part of the ORA. The results of this program are described in the ORA report.

#### **7.10 PE10: Scenario Based Risk Mitigation Analysis**

The scenario based risk mitigation analysis (SBRMA) is conducted annually, after the results of the Annual Third Party Damage Prevention Program Assessment (ATPDPPA) and the results of the relative risk model are available. In 2013, the risk model used by MMP was enhanced by developing a new probabilistic risk model. The SBRMA for the 2013 operating year could not be performed. The results of the risk models are in two different scoring systems so a comparison could not be made between the results from the old relative risk model and those from the new probabilistic risk model. The SBRMA for the 2014 operating year will be performed in 2015.



### **7.11 PE11: Incorrect Operations Mitigation**

MMP has found that, in the past, operator error has been a significant contributing factor to incidents and near misses on the Longhorn system. MMP has taken steps to address that issue, and uses an incorrect operations (IO) tracking spreadsheet which is updated and reviewed monthly. IOs include Abnormal Operations (AOs), IIs, and Hazard/Near Miss (HNM) cards. There were 110 AOs in 2013, as compared to 11 AOs in 2012. This large increase in AOs was due the startup of the line after completion of the Reversal Project. There were 4 HNMs in 2013, compared to 3 in 2012. Action Items are also reviewed monthly.

### **7.12 PE12: System Integrity Plan Scorecarding and Performance Metrics Plan**

This element commits Longhorn to establish and track general program performance measures, specific program performance measures, and to conduct an annual system integrity plan audit. These measures have been established and are being tracked as required, and the annual system integrity plan audit has been conducted each year as required. Longhorn has also established several other performance measures and tracking systems, including the Mitigation Plan Scorecarding & Performance Metrics report and incorrect operations scorecard. The scorecard metrics are reviewed monthly.

There were no unauthorized encroachments in 2013. There were two DOT-reportable releases in 2013. See Appendix 10.1 for a description of key metrics on the system in 2013.



## **8.0 Recommendations**

While the LPSIP is being implemented effectively, there are opportunities for continued process improvement in the opinion of the auditors.

### **8.1 Recommendation - Training**

The audit revealed that the training program for Technicians does not have a required curriculum. The Operations Supervisor at each facility determines the various subject matters and training modules required for a Technician. This practice could lead to a difference in the level of training for each area.

To ensure compliance with Management Commitment 3.2.9, Workforce Development, we recommend that a formalized training program be developed for Technicians to include a requirement for the program to contain specific areas of training. The training program could contain certain requirements, including required Operator Qualifications, for each Technician Level, (Technician 1, 2 & Senior). A specific job description for each level with a progression plan for advancement could be developed.

Additionally, there were 3 incident investigations which indicated that the incidents or near misses were the result of contractor human error. The increased complexity of the Longhorn pipeline operations and these human errors indicate that an added focus on training and contractor oversight may be needed.



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## **9.0 Conclusions**

The SIP was effectively implemented in 2013, and served its function of managing risks on the Longhorn system. Personnel at all levels of the organization are aware of and committed to comply with the requirements of the SIP. Comprehensive programs are in place to manage risks on the pipeline system and to implement the commitments in the SIP. These programs are mature, and are being improved on a continual basis. Recommendations for additional improvement have been identified for further consideration by Magellan.





## 10.0 Appendices

### 10.1 Summary of key metrics for 2013

Category	Measure	2013 Results
Incident Data	Releases in each Tier (DOT Reportable only)	Tier 1 = 1
		Tier 2 = 0
		Tier 3 = 1
	Releases in sensitive & hypersensitive areas (DOT Reportable only)	1
	Releases by cause (DOT Reportable only)	TPD = 0
		Corrosion = 0
		Design = 0
		Incorrect Operations = 2
	Releases by volume (BBL) (DOT Reportable only)	Tier 1 = .47
		Tier 2 = 0
Tier 3 = 7.6		
Near Misses	Tier 1 = 0	
	Tier 2 = 0	
	Tier 3 = 1	
Risk Awareness	Identification of new and/or previously unrecognized risks	2
	Number & type of projects completed that are not required by prescriptive code	2
Public Customer Service	Number of validated complaints on safety or environmental issues	0
	Number of landowner contacts related to pipeline safety and land use	27
Operator Resources and Innovation	Number of new technologies, alternative methodologies and innovative approaches to control risk	0
Damage Prevention Program	Number of third party damage incidents due to One-Call Process not being practiced (One-Call Violations)	0
Unauthorized Encroachments	Number of unauthorized encroachments	0
Facility Inspections	Number of facility inspections	16
Corrosion Management Plan – Smart Pig Results	Dents with any of the following: metal loss, corrosion, exceeds 6% of the outside diameter, or located on the longitudinal seam or girth weld	9



Remaining strength of the pipe results in a safe operating pressure that is less than the current MOP at the location of the anomaly using a suitable pressure calculating criterion (e.g. B31 G, modified B31 G, RSTRENG or LAPA)	0
Casing shorts with associated metal loss	0
Girth weld anomalies	1
Corrosion with 3" of either side and/or across girth welds	See ORA Report
Preferential corrosion of or along seam welds	See ORA Report
Gouges or grooves greater than 50% of nominal wall thickness	0
Cracks located in the pipe body, girth weld, and longitudinal seam that are determined to be injurious to the integrity of the pipe	See ORA Report



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<b>Leading Measure</b>	<b>Definition</b>	<b>Standard</b>	<b>Score</b>
Number of Releases	Number of Releases from company assets or projects that are managed by area employees in quantities exceeding 1 Gallon.	Zero (0)	3
Number of Recordable Releases	Number of DOT Reportable releases experienced on the Longhorn system.	Zero (0)	2
Number of Line Hits	Number of contacts with pipeline by first, second or third parties. Contact with pipeline includes coating contact or damage.	Zero (0)	0
Number of Near Misses	Number of events that in slightly different circumstances could have resulted in damage to the pipeline by first, second or third parties.	Zero (0)	1
Number of Markers Repaired or Replaced		Actual Number	539
Number of Unauthorized Encroachments	Number of activities that resulted in a structure being placed on the ROW that was not authorized by Longhorn Pipeline.	Zero (0)	0
Number of LMP Emergency Drills Conducted			1
Number of Facility Inspections Completed			16



## 10.2 Key documents reviewed for the 2013 SIP self-audit

#	Doc. Name
	Magellan Organization Chart
	2013 Mitigation Plan Scorecarding & Performance Metrics
	2013 Mitigation Plan - Commitment Implementation Status Report
	2012 Self Audit Recommendations & Action Plan
	Incorrect Operations Mitigation Report & Data
	Hazard Near Miss (HNM) - Closed List
	Hazard Near Miss (HNM) - Open/New List
	Closed Action Items (AI)
	Open Action Items (AI)
	Abnormal Operating Condition (AOC) Report
	Incident Investigation Reports
	Summary Report of 2012 ORA Developments
	Summary of ILI results and planned inspections
	Asset Integrity Report - 2013
	Public Awareness Summary Report - 2013
	Management of Change Data, including <ul style="list-style-type: none"><li>- Example MOCR Reports</li><li>- Open MOCR list</li><li>- Closed MOCR list</li></ul>
	Encroachment Report Date - 2013
	Valve Inspection Report data - 2013
	Corrosion Control Records – 2013, including: <ul style="list-style-type: none"><li>- MPL Longhorn Rectifier Maintenance Activity Report</li><li>- MPL Longhorn Test Point Exception Report</li><li>- Atmospheric Maintenance Report</li><li>- Close Interval Survey Results for Tier III</li></ul>
	PHMSA / MMP correspondence - 2013
	2013 Third Party Damage Prevention Program (TPDPP) Annual Assessment
	System Integrity Plan - 2013

Note: The auditors have performed this audit for many years, and also relied upon program descriptions and documentation from prior years when they also apply to this year's audit. Those documents are described in our prior audit reports.



### 10.3 Personnel Interviewed

#### Austin Interviews:

Danny Stokes – Field Supervisor  
Jim Griffin – Landman  
Darcy Madsen – Field Records, Compliance Coordinator  
Clyde Sublett – COM Technician  
Matt Welker – Maintenance Technician

#### Tulsa Interviews

Melanie Little – VP Operations  
Pat McKenzie - Director of Operations  
Chad Cole – Supervisor - Longhorn console  
Jason Smith – Director, Asset Integrity  
Matt Argo – Supervisor, Pipeline Integrity (Data Analysis / Risk Model)  
Jamie Graves – Facility Integrity Engineer  
Rick Wooldridge – Manager Asset Integrity (Corrosion & Tanks)  
Jimmy Puckett – Corrosion Supervisor  
Dennis Vasicek – Supervisor Asset Integrity (Pipeline)  
Deandra Chancellor – Regulatory Compliance Coordinator  
Dyan Gillean - Supervisor One Call  
Kevin Howell –Manager of Engineering and Construction, Crude Assets  
Dennis Crawford – Safety Specialist, Texas

#### El Paso Interviews

Cole Ballard – Area Supervisor - El Paso Area  
Roy Van Tine – Terminal Operations Supervisor - El Paso  
Greg Melton – El Paso COM  
Brad Martin – El Paso Senior Tech  
Phil Simpson – Manager of Operations, Refined Products

#### Houston Interviews

Ed Fuchs –Operations Manager  
Lee Langley – Terminal Supervisor – East Houston  
Thadd Willison – Terminal Operations Supervisor



## 10.4 Statements of Qualifications for the Auditors

### **Stephen E. Gilliam Senior Advisor III**

#### **Executive Summary**

Mr. Gilliam brings a wealth of detailed knowledge and experience in the area of pipeline regulatory and operational requirements. He has developed and implemented programs that have delivered outstanding performance improvements including cost reduction, spill reduction, and process system improvements.

#### **Accomplishments / Experience**

With over 30 years of experience in the oil and gas industry, Mr. Gilliam has established a significant list of achievements and accomplishments. During his tenure with RCP, his accomplishments include:

- Performed gap analysis of regulatory compliance programs for numerous pipeline operators.
- Performed regulatory compliance pre-audit inspections for numerous pipeline operators.
- Assisted in the development of DOT required Operations and Maintenance Manuals for pipeline operators.
- Coordinated and performed a detailed Corrosion Compliance audit for pipeline operators.
- Conducted detailed Maximum Allowable Operating Pressure analysis for gas transmission pipeline operators.

▪

#### *Other industry Experience:*

- Ensured that procedures, performance documents and physical assets complied with State and Federal Regulatory Codes.
- Developed Internal Audit protocols and managed the internal audit process.
- Developed a Regulatory Compliance database to provide guidance for document control, compliance tracking and establishment of RAA (Responsibility, Authority, and Accountability).
- Assisted the Office of Pipeline Safety and the National Transportation Safety Board (NTSB) as the Company representative during lab investigations of failed pipe at the NTSB lab in Washington, D.C.
- Responsible for documentation provided to the Office of Pipeline Safety, NTSB in response to compliance actions/recommendations.



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- Coordinated, planned and assisted in compliance inspections by the Office of Pipeline Safety.
- Tracked compliance issues and developed response documents to resolve issues in an expedited time frame.
- First responder member of the Emergency Response Team as DOT Coordinator during pipeline accidents. Facilitated communication with regulators.
- Reduction of compliance violations issued by the Office of Pipeline Safety.
- Supervised the development of the Integrity Management Plan.
- Managed the development of the Damage Prevention Program.
- Performed due diligence for regulatory compliance documents for a pipeline acquisition.
- Developed a computerized maintenance tracking program.
- Developed procedures for the performance of preventative maintenance.
- Ensured that required preventive maintenance was completed and documented.
- Development of Sequence Control wiring diagrams for pipeline control systems.
- Development of fabrication drawings for Control Consoles, including the graphic control panels and wiring diagrams.
- Coordination with vendor fabrication of systems to ensure quality and scheduled delivery.
- Oversaw the field installation of control systems and control consoles.

**Military Experience:**

U.S. Army 1968 to 1971 – Chemical Staff Specialist – Viet Nam 1968 to 1969

**Honors and Awards**

Eagle Scout

Colonial Pipeline Company – 25 year service award without injury

**Education**

Associate Degree, Mechanical Technology – South Georgia Technical School

B.A., Business Management – Georgia State University



**Deborah J. Brunt, P.E.  
Executive Consultant**

**Executive Summary**

Deborah Brunt has 25+ years of experience in natural gas utility operations and engineering. Her expertise is focused on gas distribution and transmission engineering, operations, and compliance with PHMSA pipeline safety regulations. She is experienced in testifying before the New Mexico Public Regulation Commission (NMPRC), National Labor Relations Board (NLRB), and representing companies to the community and local governments.

**Accomplishments/Experience**

In Ms. Brunt's career in the natural gas industry, she has held the positions of: Director of Operations, Engineering, Gas Engineering & DOT compliance; member of a gas asset sale transition team; and manager for various operations functions. Some of her accomplishments in these roles, and as a Distribution Engineer, include:

- Directed/coordinated measurement, compression operations, environmental, right-of-way and GIS functions for gas transmission and distribution systems throughout New Mexico.
- Directed/coordinated engineering functions for gas transmission and distribution systems throughout New Mexico.
- Directed/coordinated the operation, maintenance, and construction of electric and gas distribution systems for Santa Fe, Las Vegas, Espanola and Taos, NM.
- Project management for new SCADA system installation.
- Worked on preparation of Descriptive Memorandum to describe assets to potential buyers of natural gas assets of Company. Assisted in presentations to potential buyers, prepared written responses to questions about the gas assets and provided tours of facilities. Once buyer was selected, work shifted to separating gas functions from electric functions, identifying all needs for stand-up gas-only company, and planning for physical moves.

**Education**

Bachelor of Science – Mechanical Engineer, Oregon State University, Corvallis, OR, 1986

- B.S. Mechanical Engineering with Honors
- Tau Beta Pi Engineering Honor Society
- Pi Tau Sigma Mechanical Engineering Honor Society

**Professional Awards and Accomplishments**

- Registered Professional Engineer, New Mexico (#11369), 1991
- YWCA “Woman on the Move” Award, 1992
- Society of Women Engineers “Distinguished New Engineer” Award, 1996
- New Mexico Society of Professional Engineers “Engineer of the Year” Award, 2003