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

October 21, 2015

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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	• Cleaning and refurbishment of the existing pipeline; • Construction of new pump stations (Galena Park, Satsuma, Cedar Valley, Kimble County, Crane, and El Paso) • Construction of El Paso Terminal • 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.
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:

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 2014 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.

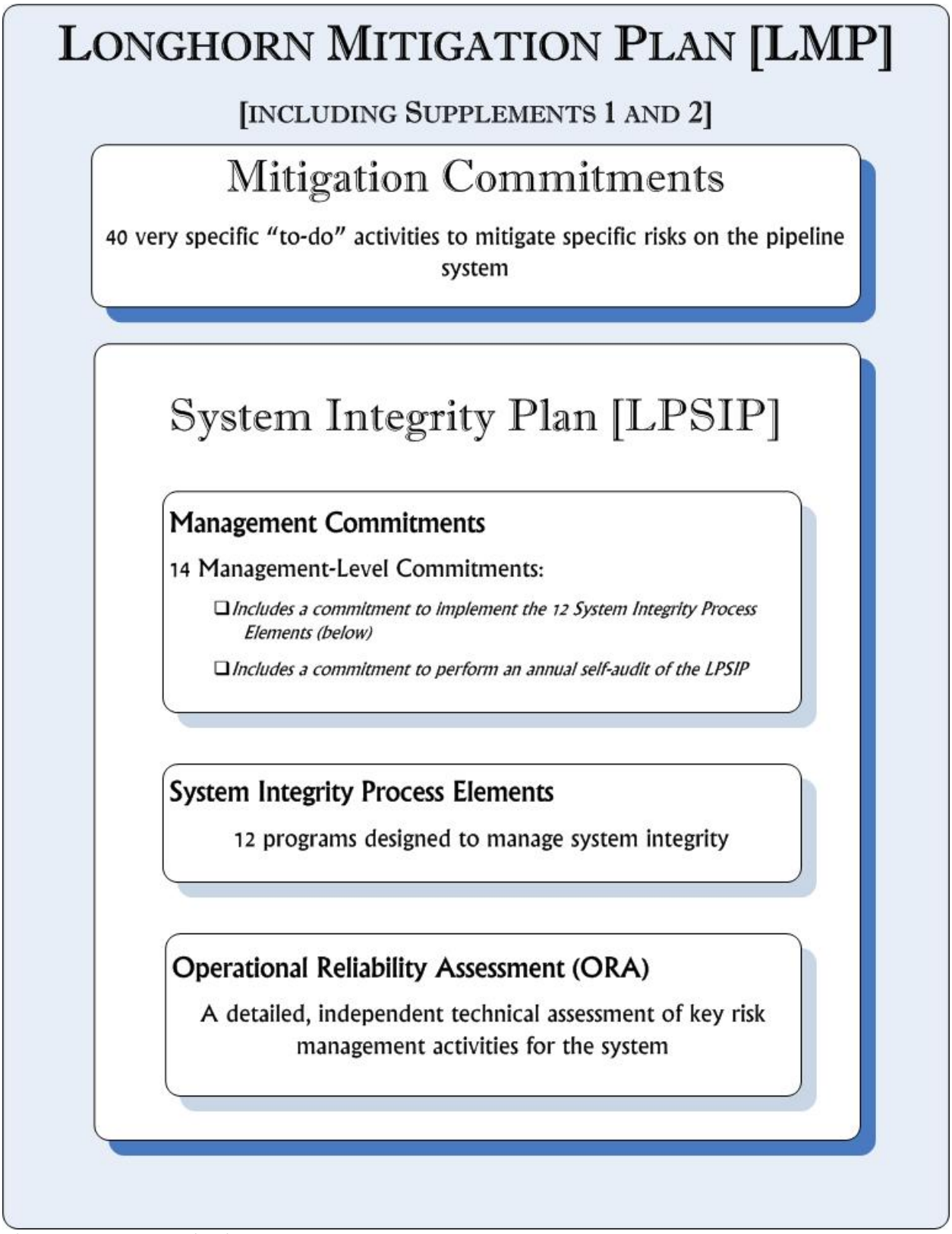

Figure 1: LMP Organization

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 Crane, including personnel in field operations and corporate management. 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 2014, the auditors generally interviewed all those personnel at once. All the field activities for the audit were performed in March – May 2015.

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 2014

During 2014, Magellan continued to implement system integrity activities as required by Federal Pipeline Safety regulations and the LMP.

2014 was the first full year of operation of the Longhorn Pipeline in the “reversed” configuration and at full Phase II volume.

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.

An issue with valve stems was identified as the result of two minor release incidents. The manufacturer of the valves had a problem with plating of the material and, as a result, corrosion can occur on the valve stems. This can lead to minor leaks as occurred in 2014 at two locations on the Longhorn Pipeline. MMP is in the process of changing these valve stems based on a prioritization of drain up, location to HCAs, and severity of leakage. Until the valve stems are replaced, the affected valves are inspected weekly to ensure they are not leaking.

Human error as a contributing factor or cause of incidents and near misses was noted in four (4) incident investigations. This human error included occasions where employees did not follow procedures that are designed to prevent errors and incidents. Additionally, documentation errors and lack of required valve inspections were found in the audit when random records were chosen for review. These instances of human error, missed inspections, and documentation errors may indicate a need for additional and/or standardized training for employees and contractors.

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

MMP issued 4 "Lessons Learned" bulletins in 2014. Lessons Learned bulletins issued were not initiated by incidents that occurred on the Longhorn System.

In recent years, the Longhorn Pipeline and MMP have experienced tremendous growth and employees are now operating an increasingly complex system. In addition, there were 4 incident investigations in 2014 that indicated human error was a cause or contributing cause to the incident or near miss. Additionally, there was an abnormal operating condition (AOC) where a portion of the line (Holland to 9th Street) was operated without leak detection for 9 hours that was also due to human error. The increased complexity and the fact that human errors contributed to several incidents indicate the need to ensure adequate training, increased emphasis

on following procedures, and quality checkouts when placing new equipment in service or changing operations.

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

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 also implemented a similar system for notifications when flooding occurs.

The Material Documentation Plan requirement of non-destructive testing of pipe segments in at least 50% of the excavations or remediations required by ILI results was started in 2013.

Operational knowledge gaps were identified and training was scheduled. Maintenance Technicians will receive training on pumps and variable speed drives (VSDs) from Rockwell Equipment and Supply Co.

5.4 Performance measurement results.

The “scorecard” for 2014 is included in appendix 10.1 to this report. The scorecard indicates 2 DOT-reportable releases in 2014. These two were attributable to human error, one at Cottonwood Station in a Tier 1 area, and one release at El Paso Terminal in a Tier 1 area.

There were no One Call violations in 2014.

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

A photogrammetry survey of the line is scheduled for 2015.

Individual Training Plans (ITPs) for all employees will incorporate damage prevention awareness. Technician training will include training by external subject matter experts (SMEs).

The annual mail out educational materials will be revised and revamped in 2015.

Documentation for testing and maintenance of overpressure protection devices is under review and is in the process of being revised.

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 meet or exceed 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. 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 2014. There were 10 incident investigations completed in 2014 for incidents that occurred on facilities subject to the LMP. 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 quarterly in a spreadsheet 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 entered in 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 open or closed.

The LMP also commits Longhorn to conduct an annual Third Party Damage Prevention Program Assessment. The assessment for 2014 was conducted and 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 and girth weld assessments,

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 began in 2014 to non-destructively test pipe segments in at least 50% of the excavations or remediations required by ILI results where material test reports are not available.

An automated notification system was implemented in 2014 to notify critical employees when seismic activity or flooding occurs that could impact the Longhorn Pipeline.

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 4 “Lessons Learned” bulletins in 2014, addressing various issues. None of the Lessons Learned bulletins were the result of issues on the Longhorn Pipeline.
One of the Lessons Learned Bulletins addressed job planning and the importance of following procedures. There were several incidents on the Longhorn Pipeline that were at least partially due to employees or contractors not following procedures.

Overpressure protection (OPP) and the importance of documentation of inspections and maintenance of OPP devices was the subject of another of the Lessons Learned Bulletins.

MMP conducts monthly SIP meetings in Austin, El Paso, Houston, and Crane/Odessa, where SIP procedures, Hazard/Near Miss Reports (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. 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/ORA coordinator. There was some personnel turnover for Longhorn in 2014 due to attrition.

6.9 MC9: Workforce Development

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

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 2014 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 2014. 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

Atmospheric corrosion inspections were performed as required. Several locations were noted as having no coating at interface areas and were scheduled for repair in June 2015. One location had disbondment at the transition and was repaired.

No API 653 internal inspections were conducted in 2014. External inspections of tanks at El Paso resulted in minor repairs to refined product tanks 2, 4, and 17.

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 help prevent internal corrosion.

7.2 PE2: In Line Inspection and Rehabilitation Program

Three (3) digs were performed for the previous year MFL tool runs. Additionally, 2 digs were performed to investigate potential hard spots identified by the hard spot tool run but no hard spot indications were found. MMP applies HCA remediation timeframes even to Longhorn pipe segments outside of HCAs. All rehabilitation was conducted in the necessary timeframe.

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.

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 during ROW assessments. The exposure was repaired by adding additional cover. Four (4) existing exposures were monitored and were repaired when additional erosion was found. Five road crossings had additional gravel cover installed and one section of shallow line was lowered.

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 MMP operations person flies with the pilot annually to make sure the flight is taking the correct path and audit the pilot's notes to ensure they are identifying items as expected by MMP.

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. The areas where no-till agreements were not obtained have been determined to be not at risk and are monitored on an annual basis. There were no new no-till agreements obtained in 2014.

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, in 2013, responses were received from 669 mailings and 608 responses were received in 2014. The percentage of replies that state that they know how to identify a pipeline was very high at 90%. Those who claim that they were aware of the need to call One Call before digging decreased slightly from 93% to 92% but is consistent with past years results. The percentage of respondents who indicated that they are confident in their ability to recognize a leak and know how to respond to a leak increased slightly from 85% to 86%. Respondents also believe that Magellan has done a good job of informing people about pipeline safety, with 89% 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 846 recipients.

Door-to-door visits were conducted in 2014 over the entire pipeline in Tier II and Tier III areas.

Longhorn COMs participated in group emergency responder and excavator meetings in 25 counties. Face-to-face meetings were conducted with 123 emergency responders, covering all 25 counties. There were an additional 14 group meetings with emergency responders along the ROW.

Longhorn continues to operate a school outreach program targeted at 4th and 5th grade students, but has had difficulty getting schools to participate. In the Austin area, 292 students and 13 teachers participated. Three schools in the Houston area participated in the "Safe at Home" program reaching 381 students and 19 teachers This is an increase from 2013.

MMP 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 8/11/2014. Magellan also participated in sponsoring "Call 811" messages on the jockey for California Chrome in the Triple Crown races and did an 811/ALS ice bucket challenge that generated a lot of YouTube views and was featured in the Common Ground Alliance newsletter. The farm store kiosk program was continued in 2014 at 17 locations. 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 88 encroachment agreements in 2014. One new encroachment agreement for housing development was executed in 2014.There were no unauthorized encroachments, as compared to 3 in 2009, one in 2010, none in 2011, two in 2012, and none in 2013. 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 2 HNM reports for 2014, versus 4 in 2013, 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. MMP did 10 Incident Investigations for facilities covered by the LMP in 2014, versus 8 in 2013, 9 in 2012 and 13 in 2011. Four incidents were due to equipment failures and four were due to human error. An instance of operation without PLM, which appears to be due to human error, was classified as a hazard near miss and investigated. Three of the "human error" incidents were due to employees or contractors not following procedures.
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

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. MMP performed two Layer of Protection Analysis (LOPA) analyses and seven Process Hazard Analyses (PHAs) pertaining to the Longhorn facilities in 2014.

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.

As noted in previous audits, there continued to be large time lags between when an MOCR is proposed to be complete and the actual completion and closure of the MOCR.

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 with 2 exposures at one of these locations. All sites have been mitigated.

To-date, in-line inspections 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 2012 and 2013 operating years 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 75 AOs in 2014, as compared to 110 AOs in 2013. There were 2 HNMs in 2014, compared to 4 in 2013. Action Items are also reviewed monthly.

Operator error continues to be a significant contributing factor to incidents and near misses. In the 10 Incident Investigations performed in 2014, it was listed as a cause for four (4) of the incidents.

In reviewing selected maintenance records, the auditors discovered several valves that had been inspected only once in the calendar year. Federal regulations require inspections at intervals not exceeding 7 ½ months, but at least twice each calendar year. Another error found in the records concerned a tank at El Paso Terminal. The tank was noted as "removed" in the September and November reports but inspection results were indicated in the December report. These errors in documentation have since been corrected.

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 2014. There were two DOT-reportable releases in 2014. See Appendix 10.1 for a description of key metrics on the system in 2014.

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 consistency in training for each area and potential gaps.

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.

There were 3 incidents (2 minor releases and one instance of product pumped to the wrong tank) due to employees not following procedures. This may be an indication that training needs to be more formalized. 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. Training should be standardized so that all employees are aware of the required procedures and documentation.

9.0 Conclusions

The SIP was effectively implemented in 2014, 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 2014

Category	Measure	2014 Results
Incident Data	Releases in each Tier (DOT Reportable only)	Tier 1 = 2
		Tier 2 =0
		Tier 3 = 0
	Releases in sensitive & hypersensitive areas (DOT Reportable only)	0
	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 = 5
		Tier 3 = 0
	Facility Near Misses	Tier 1 = 2
		Tier 2 = 0
		Tier 3 = 0
Risk Awareness	Identification of new and/or previously unrecognized risks	1
	Number & type of projects completed that are not required by prescriptive code	0
Public Customer Service	Number of validated complaints on safety or environmental issues	0
	Number of landowner contacts related to pipeline safety and land use	25
Operator Resources and Innovation	Number of new technologies, alternative methodologies and innovative approaches to control risk	1
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	2
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	0

	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	0
	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

Leading Measure	Definition	Standard	Score
Number of Releases	Number of Releases from company assets or projects that are managed by area employees in quantities exceeding 1 Gallon.	Zero (0)	2
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 ROW 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)	0
Number of Markers Repaired or Replaced		Actual Number	141
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			2
Number of Facility Inspections Completed			2

10.2 Key documents reviewed for the 2014 SIP self-audit

2014 LPSIP Self Audit Backup Docs - Appendices

#	Doc. Name
	Magellan Organization Chart
	2014 Mitigation Plan Scorecarding & Performance Metrics
	2014 Mitigation Plan - Commitment Implementation Status Report
	2013Self 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 2013 ORA Developments
	Summary of ILI results and planned inspections
	Asset Integrity Report - 2014
	Public Awareness Summary Report - 2014
	Management of Change Data, including - Example MOCR Reports - Open MOCR list - Closed MOCR list
	Encroachment Report Date - 2014
	Valve Inspection Report data - 2014
	Corrosion Control Records – 2014, including: - MPL Longhorn Rectifier Maintenance Activity Report - MPL Longhorn Test Point Exception Report - Atmospheric Maintenance Report - Close Interval Survey Results for Tier III
	PHMSA / MMP correspondence - 2014
	2014 Third Party Damage Prevention Program (TPDPP) Annual Assessment
	System Integrity Plan - 2014

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
Lee Moore –Technician

Tulsa Interviews
Melanie Little – VP Operations
Pat McKenzie - Director of Operations
Chad Cole – Supervisor - Longhorn console
Jason Smith – Director, Asset Integrity
Rick Wooldridge – Manager Asset Integrity (Corrosion & Tanks)
Jimmy Puckett – Corrosion Supervisor
Clyde Clausen – Manager Asset Integrity
Dennis Vasicek – Supervisor Asset Integrity (Pipeline)
Dyan Gillean - Supervisor One Call
Amber Kistler – Health & Safety Specialist

Crane Interviews
Mike Blankendaal – Area Supervisor - Odessa Area
Danny Lampe –Operations Supervisor - Crude

Houston Interviews
Ed Fuchs –Operations Manager
Rusty Holman – Area Supervisor – East Houston Maintenance & Projects
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.

- 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 Engineering, 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