



Longhorn Pipeline System
2021 Annual System Integrity Plan
Self-Audit Report

January 20, 2023



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1.0. Introduction

This *Annual System Integrity Plan Self-Audit Report* documents the 2021 annual self-audit of the Magellan Midstream Partners, L.P. (Magellan) Longhorn Pipeline System (LPS) System Integrity Plan (SIP). As detailed in Section 1.3, the SIP specifies various requirements and protocols incumbent upon Magellan in the management and operation of the LPS.

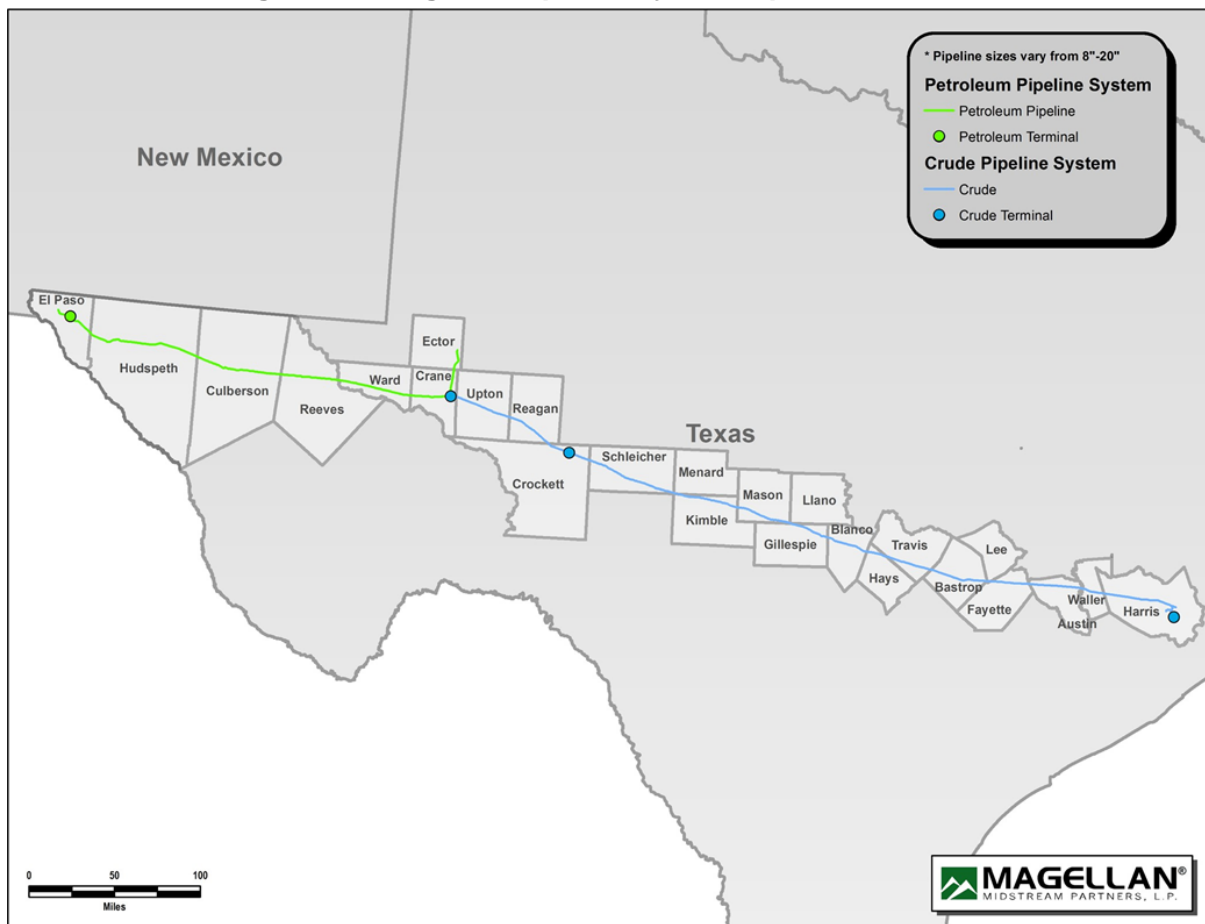
Appendix A provides a list of the primary acronyms used in this report.

1.1. Pipeline Background

The process that ultimately resulted in the operation of the current LPS began in the mid-1990s, when Longhorn Partners Pipeline, LP acquired the original, idled pipeline. Following several investigations and activities, the LPS was first returned to service in January 2005. Magellan took over operations and ownership of the LPS in August 2009. Refer to Section 1.2 for additional details.

Originally, the LPS transported refined products westward across almost the entire breadth of Texas, from East Houston/Pasadena (in Harris County) to El Paso. Currently, refined products continue to flow westward from Odessa (in Ector County), first travelling south through Crane and then on to El Paso. The remainder of the LPS had its flow reversed (eastward, from Crane to Pasadena) and was converted to West Texas Intermediate crude oil service. Figure 1 shows the overall current product service for the LPS.

Figure 1: Longhorn Pipeline System Operational Network



1.2. Pipeline History

Table 1 summarizes the history of the LPS.

Table 1: History of the Longhorn Pipeline System

Year	Events
1949–1995	Exxon constructed the original, predecessor 18"/20" pipeline to transport crude oil from Crane, Texas to Baytown, Texas and operated and maintained it until the pipeline was idled and purged with nitrogen.
October 21, 1997	Longhorn Partners Pipeline, LP acquired the existing (idled) pipeline from Exxon, with the intent to place it back into service.
April 1998	National Environmental Policy Act (NEPA) lawsuit filed in federal court, Austin, Texas.
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: <ul style="list-style-type: none"> • 18" Crane to El Paso • 8" Crane to Odessa • 20" GATX to Tie-In • 8" and 12" pipelines from El Paso Terminal to tie-ins with other systems
March 1999	NEPA Settlement Agreement requires an environmental assessment, which ultimately leads to issuance of the <i>Longhorn Mitigation Plan</i> .
November 2000	Finding of No Significant Impact issued and <i>Longhorn Mitigation Plan</i> published.
2001–2004	Pre-start-up Mitigation Commitment activities performed.
January 27, 2005	Official start-up date for the LPS.
August 2006	Flying J acquires Longhorn Partners Pipeline, LP.
August 27, 2009	Magellan purchases the LPS from Flying J.
March 2013	Flow direction of eastern two-thirds of LPS reversed, with product service in that portion of the line changed to crude oil (flows from Crane, Texas to East Houston).
July 2017	Crude oil spill (approximately 50,000 gallons) in pipe section in Bastrop County.

1.3. System Integrity Plan

Longhorn Partners Pipeline, LP's 1997 project to return the LPS to service was opposed by various groups, resulting in a lawsuit and eventual settlement in March 1999. Longhorn Partners Pipeline, LP agreed to implement the *Longhorn Mitigation Plan* as part of the original NEPA Settlement Agreement. Following two early revisions, the *Longhorn Mitigation Plan* includes 40 Mitigation Commitment tasks that address various integrity concerns on the LPS, both before and after start-up. The *Longhorn Mitigation Plan* also committed Longhorn Partners Pipeline, LP to implement an SIP, which is now Magellan's responsibility. Magellan's SIP includes three main elements:

1. Management Commitment tasks (14 total), addressing various elements of the integrity management program (IMP) for the pipeline system, including a commitment to conduct an annual self-audit of the Magellan SIP for the LPS
2. Magellan SIP process elements (15 total), addressing various operational management processes for the LPS
3. An Operational Reliability Assessment (ORA), providing an independent technical analysis of various integrity threats on the pipeline system

The Management Commitment tasks (except for IMP elements as noted below) and the ORA reports are addressed in separate reporting processes and are not included as part of this SIP self-audit. However, certain aspects of these (such as ORA feedback, as discussed in Section 5.7) are intertwined with the overall management of the SIP.

Magellan's SIP is designed to be consistent with the company's comprehensive Pipeline Safety Management System. The SIP was first issued in 2004 and has been updated on several occasions since then.

- The IMP elements included in the original 14 Management Commitment tasks—as well as the original 12 LPS SIP elements—have been consolidated in the 15 process elements in the Magellan SIP.
- The Magellan SIP contains a requirement for a formal annual review, validation, and updates, which also ensures compliance with current regulatory requirements. Process performance measurement, assessment, and continual improvement objectives are incorporated within the SIP.
- In 2015, the American Petroleum Institute (API) published API Recommended Practice 1173, *Pipeline Safety Management Systems* (API 1173). API 1173 provides operators with a framework to 1) identify and manage risk, 2) promote a learning environment, and 3) continually improve pipeline safety and integrity. Magellan's SIP is aligned with the objectives of API 1173 and Magellan has formally joined other pipeline operators in committing to implementation of API 1173.

In this report, the 15 LPS SIP process elements are referred to sequentially as PE1 through PE15. Section 5.0 presents the findings for these 15 process elements. Section 6.0 outlines the recommendations to address the findings from this year's self-audit.

2.0. Self-Audit Methodology

Magellan's self-audit methodology is based on contracting a team of qualified outside consultants (herein referred to as the "auditors" or the "audit team") to conduct a review of the *Longhorn Mitigation Plan*, the SIP, and various associated documents and to interview relevant Magellan personnel. From this information, the auditors gain an understanding of the self-audit requirements and how Magellan has performed in relationship to those requirements—and all applicable regulatory requirements—during the audited year.

- Documents reviewed include policies and procedures; work activity reports; agreements with third parties; performance-tracking metrics; and other relevant compliance documents.
- Interviews included personnel from Magellan facilities in El Paso, Crane, Austin, and Tulsa, and included personnel from both field operations and the corporate office.
- Appendix B provides a list of the documents reviewed and the personnel interviewed for this year's audit.

The 2021 self-audit team was composed of two representatives from Integrity Solutions® Ltd, both of whom are skilled auditors with over 60 years of combined experience in the industry. Their statements of qualifications are presented in Appendix C. Using their best professional judgment and experience, the auditors developed the opinions and findings that are documented in this report.

Prior to finalizing this report, the auditors reviewed all interim findings with Magellan to ensure that the information documented herein is factually correct and considers all appropriate information; however, the findings and conclusions stated in this report are the independent work of the audit team based on requirements defined in the *Longhorn Mitigation Plan* and the Magellan SIP, as well as on the applicable pipeline safety regulations of the Texas Railroad Commission and the U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA).

3.0. Significant Developments for 2021

During 2021, Magellan continued to implement system integrity activities as required by PHMSA pipeline safety regulations, the *Longhorn Mitigation Plan*, and the SIP. The year 2020 was impacted by the Coronavirus Disease 2019 (COVID-19) pandemic and face-to-face interactions were limited. During 2021 face-to-face interactions began again, allowing Magellan personnel to resume normal training and public awareness activities.

Also for 2021, the Austin area public awareness representative retired and those duties were assigned to the Area Supervisor.

Due to the maturity of Magellan's programs, no significant system developments occurred on the LPS in 2021.

4.0. Summary of Findings

As described in Section 1.3, the *Longhorn Mitigation Plan* requires an annual self-audit of Magellan's LPS SIP. The *Longhorn Mitigation Plan* specifically requires that the self-audit address five core areas of system integrity, and their 15 supporting process elements, of Magellan's SIP.

4.1. Synopsis of Integrity Issues

The 2021 audit, conducted in 2022, reviewed the activities and programs used to manage risk. These activities and programs were mature, functioning as designed, and were well understood by employees. The activities and programs used to manage risk on the LPS are addressed individually in Section 5.0. Section 6.0 describes potential improvements for the programs.

In 2014, two minor, non-PHMSA-reportable release incidents occurred resulting from faulty valve stem coating applied during the manufacturing process. As a result, Magellan initiated a replacement program for all similar valve stems. Replacements are evaluated based on the following criteria:

1. Risk prioritization of a potential leak
2. Valve locations in relation to high consequence areas (HCAs)
3. Potential severity of valve stem leak

Magellan did not replace any valve stems in 2021. Until all the defective valve stems have been replaced, LPS personnel have placed a secondary containment system around each seeping valve stem and continue to inspect and monitor the remaining valves.

Magellan issued a single company-wide "Safety Alert" bulletin in 2021 and two company-wide serious injury or fatality (SIF) bulletins addressing three incidents—none of which occurred on LPS assets. Each SIF bulletin addressed incidents involving employees performing routine tasks. The first SIF involved an amputation and the second SIF could have resulted in a significant explosion with loss of life. In two of the three incidents, human error—particularly complacency and situational awareness—were contributing factors. Human error incidents remain a continued focus for the organization.

LPS personnel conducted four incident investigations during 2021. These investigations included the following:

- Damage to a cathodic protection cable that was cut during a planned excavation. The rectifier cables were not marked and one was inadvertently cut during the excavation. No injuries occurred.
- A Magellan employee mistakenly located (marked) a connected AC mitigation cable instead of the pipeline. The pipeline was damaged during the excavation and needed to be repaired. No injuries or releases occurred.
- A landowner installed a fence over the pipeline without making a One-Call. The fence blocked ROW access and a fence pier was installed directly over the top of the line.
- One small-volume release, not reportable, related to maintenance activities.

Table 2 summarizes the incident investigation classifications.

Table 2: 2021 Incident Investigation and Accidents

Cause	Classification					
	PHMSA Reportable	Hazardous Near Misses	Human Error	Equipment Failure	One-Call Violations	ROW Near Misses
Employee	0	0	2	0	0	0
Other Personnel	0	0	1	0	1	
Equipment Failure	0	0	0	0	0	0

4.2. New Integrity Management Processes or Technologies

Magellan enhanced its Facility Integrity Management Program (FIMP) by conducting more rigorous integrity evaluations for its surface facilities and equipment. Facility Risk Assessments (FRAs) focused on leak detection, mechanical integrity, prime equipment, corrosion control, operating pressure programs, fire safety, and reinspection intervals. All findings from the FRAs are captured in a company database and any associated action items are tracked to completion. Results are used for updating and improving the FIMP each year. In 2021, one FRA was completed at the LHMP 12 valve site. Table 3 summarizes the recommendations from the inspection.

Table 3: 2021 FRA Inspection Recommendations

Facility	Recommendation
Mesa Road / LHMP 12 Valve Site	Evaluate the benefit of installing H ₂ S detectors at the valve site.
	Evaluate the electrical area classification
	Remove or inactivate the Mesa Road designation in the TIES database so that LHMP 12 is the only name used for this facility.

In 2020 Magellan began research and testing to determine if better leak detection technology is available than the leak detection cables currently used. As of the end of 2021, no determination has been made and the research continues. Alternative technologies will not be utilized unless they provide equal or better detection with increased reliability.

In 2021, Magellan continued upgrading uninterruptible power supply (UPS) backups on select, remote-operated valves on the LPS to ensure better reliability, availability, and reduced response time during power outages. The priority for the UPS upgrades is based on risk, with environmental impact acting as the primary driver. The remaining unexamined remote-operated valves will be evaluated for UPS backup in future years.

Based on the suggestions from the 2020 self-audit, Magellan’s corrosion control team installed remote monitoring at 16 critical bond locations. The remote monitoring devices provide direct and continual access for monitoring critical bonds at foreign pipeline crossings, allowing corrosion personnel to know when a bond has malfunctioned or if current readings are outside normal operating parameters.

4.3. Improved IMP Elements and Activities

4.3.1. Safety Engagement Meetings

LPS personnel continued the enhancement of their monthly safety meeting format. The Health, Safety and Environmental (HSE) and Operations groups utilize the redesigned the safety meetings to increase employee participation and meeting effectiveness. These Safety Engagement Meetings (SEMs) encourage all attendees to actively participate and share safety observations, lessons learned, and last-minute risk assessments (LMRAs).

The HSE and Operations groups selected a total of 12 safety topics, with one of these topics discussed at each of the monthly SEMs based on 2020 safety performance data. The HSE group provides structured videos, handout materials, etc. to be used in all safety meetings across LPS operational areas.

During the 2021 self-audit interviews, feedback regarding the monthly SEMs remained just as positive as in 2020. Personnel continued to state that the meetings are relevant, and employees feel engaged and hold more ownership throughout the process. Leadership of the monthly SEMs continues to be rotated among HSE staff, operational leaders, and technicians.

With the increased focus on human-error events, the LMRA process was identified and introduced into the workplace as a last-minute stopgap for employees to identify possible risks before beginning a job. In 2021, LPS employees began utilizing the new process and sharing lessons learned during the monthly SEMs. In addition, employees develop and share videos across the organization that provide examples and demonstrate the importance of LMRAs. These LMRAs encourage Magellan personnel to stop and think about their actions prior to performing any task by asking questions such as:

- What could go wrong?
- What is the worst thing that could happen if something does go wrong?
- What am I going to do to prevent something bad from happening?

4.3.2. Public Awareness Activity

Since third-party damage continues as one of the biggest threats, the Public Awareness group, along with the LPS ROW group, continues to work to improve public awareness related to digging in LPS ROWs. The focused message is an effort to improve response time of local emergency response agencies (fire, police, etc.), along with LPS employee response time. The public is advised that when an event/incident occurs they should call 911 first, followed by the LPS emergency number. LPS personnel worked to keep the public stakeholders informed about calling 811 One-Call prior to digging in LPS ROWs. In conjunction with that, LPS personnel worked to educate the public about reporting events/incidents. Section 5.10 provides additional details

4.3.3. Emergency Response

The after-action recommendation from the 2021 live-leak drill was to consider purchasing a larger boat and motor to maneuver and place booms on the Colorado River. The new boat and motor were budgeted and subsequently purchased to effectively facilitate future boom deployments.

4.3.4. Incident Management and Near Misses

As part of the 2020 Self-audit recommendations, a refocus on the importance of near miss reporting was suggested. In 2022, Magellan initiated a new program called, Enablon. Enablon is

a new incident management system that tracks incidents as well as near misses. All employees were delivered a video that demonstrated the importance of near miss reporting and near miss data analysis. The video focused on the Heinrich Pyramid and the relationship between the number of near misses, minor incidents, and serious incident. Since the program was rolled out late in 2022, feedback from the program will be highlighted in the subsequent annual system integrity self-audit report.

5.0. Process Element Findings

The 15 process elements described in the *Longhorn Mitigation Plan* are addressed in the following subsections.

5.1. PE1: Magellan Commitment

The *Longhorn Mitigation Plan* defines the integrity assurance focus areas and specific commitments planned for the year. Progress against these commitments is monitored on a regular basis. The SIP Council (the "Council") is the approval body for significant planned improvements to the LPS, including the *Longhorn Mitigation Plan* commitments. The Council meets twice per year to review progress against the planned improvements.

The SIP is the foundation for Magellan's comprehensive Pipeline Safety Management System, which applies to all personnel and assets. The SIP was developed to build a pipeline culture that strives for continuous pipeline safety and integrity improvement. The SIP aligns with API 1173 and contains 15 process elements designed to support the Council's mission for the SIP. The LPS has Element Owners for each of the 15 SIP process elements who are responsible for monitoring performance against the element requirements and suggesting improvements to the requirements when needed.

Each year, the Council develops specific safety, environmental, and operational performance goals. These goals and objectives are documented in quarterly Operational Performance Reports. Magellan's commitment stems from the development of the goals, continuous improvement, a structured program governance, and thorough evaluation of program key performance indicators (KPIs) to determine SIP effectiveness. These goals include specific operational, environmental, and safety targets (e.g., pipeline volumes, operations and maintenance [O&M] task completions, abnormal operating conditions [AOCs], spill volumes, U.S. Occupational Safety and Health Administration [OSHA]-recordable injury rates, etc.). Performance against these targets is measured and documented.

During the interviews, management commitment was cited numerous times through the continued support of monthly SEMs, financial support to ensure assets are maintained, and the empowerment provided to Magellan employees. In addition, many of the best practices utilized across the LPS are adopted across non-LPS assets, providing proof that practices are deeply embedded and supported by management.

5.2. PE2: Training

A comprehensive training matrix exists for all field/operational safety-critical positions in the company. The matrix includes safety-critical roles and the training requirements for each of those positions. Individual training plans (ITPs) for all LPS field personnel are managed in Magellan's Learning Management System (LMS). Completion of all training requirements is managed by the individual's supervisor. Magellan retrained LPS personnel on the Facility Leak Risk Reduction initiative.

In addition to personal ITPs, LPS employees are required to train and qualify on covered tasks according to Magellan's Operator Qualification (OQ) program. If covered tasks are performed incorrectly, the safety or integrity of the pipeline can be compromised. Prior to qualifying for a covered task, employees need to be trained on the task, trained on the local operating procedure, need to be able to react and respond appropriately to AOCs, pass a written exam and/or, practical evaluation that demonstrate the necessary skills and abilities to perform the work unsupervised. Covered tasks are assigned to LPS personnel based on position and operational need. Individual

OQ task assignments are reviewed annually, and employee qualification records are documented and managed within ISNetworld.

New-hire Operations employees are required to attend Magellan's New Employee Orientation (NEO). NEO is a comprehensive 3-week program that occurs the first 3 weeks for any brand-new field employee. The first week is in Tulsa, the second week is in the field for site-specific orientation, and the third week is in Tulsa. New LPS employees are assigned a senior mentor to provide information specific to the *Longhorn Mitigation Plan*. The key stakeholders responsible for sections of the *Longhorn Mitigation Plan* are included in the NEO. The stakeholders interact and provide presentations and information relevant to the implementation of the program to NEO attendees.

While a majority of the LPS operational areas have experienced employees who are familiar with the LPS and the *Longhorn Mitigation Plan*, the operating areas located throughout the numerous shale plays continue to experience more turnover. As a result, there is an increased need to ensure that these new employees are familiar with and fully understand the roles and responsibilities associated with satisfying the requirements of the *Longhorn Mitigation Plan*. During the employee interviews, supervisory personnel acknowledged this challenge and indicated that senior mentors are specifically chosen to ensure proper knowledge sharing.

5.3. PE3: Contractor Management

Magellan uses contractors to execute many of the LPS work activities, including inspection services, ROW management, valve repairs, line locating, environmental assessments, and detailed engineering. All contractors are hired through Magellan's Contracting Group. Several factors are considered when selecting contractors, such as safety performance, operational experience, price, and work history. If safety performance concerns (experience modification rate [EMR], total recordable incident rate [TRIR], etc.) are too high or the contractor had a fatality, the contractor is not considered. There is an exception process that requires approval from LPS senior management; however, this process is only used on rare occasions when an approved contractor is unavailable.

All contractors are required to submit their drug and alcohol, safety programs, OSHA ratings (total incidence rate [TIR], incident rate [IR], EMR, etc.) and employee covered task qualifications through ISNetworld. The single location for these records (ISNetworld) allows for a comprehensive evaluation of the contractor's safety programs and the OQ records for individual contractor employees. All LPS Project Managers, Area Supervisors, and personnel that utilize contractors to perform covered tasks are required to verify covered task qualifications prior to the performance of each task.

Auditor interviews with LPS personnel confirmed that contractor qualifications for covered tasks are verified prior to the performance of each task and that the KPIs for contractor audits and jobsite inspections were met during 2021. The audit and jobsite inspections, while designed to be behavioral based, allow LPS management personnel an opportunity to stay in touch with the activities across their assets as well as letting contractors know the expectations.

5.4. PE4: Project Management

Magellan utilizes contractors for all major construction or significant repair work on the LPS. Smaller projects may be managed by LPS regional staff; however, major projects are managed by Magellan's Technical Services Group, generally from Tulsa, Oklahoma. There was no major construction work executed in 2021.

Standard engineering design packages are used for most pipeline modifications or additions on the LPS. Where standard designs are not available, designs based on industry practices and

standards are used. If changes are made to any project-related standard, a Project Change Document is developed and approved before executing the work activity. Similarly, when project execution parameters change (cost, schedule, etc.) a formal Project Change Document is used to document the review and approval of the change. LPS Regional Operations is able to review design packages and provide input for potential design changes to accommodate operational needs or safety.

LPS personnel and procedures describe the standard pre-start-up safety review (PSSR) process, which is conducted for all pipeline system additions or modifications. Actions from the PSSRs are captured and tracked to completion prior to beginning the pipeline system modifications. The PSSR process is identified as the handover process from project groups to the Operations organization. Operational leaders interviewed stated that, although no major projects were performed in 2021, this process has improved due to increased communication between Operations and the designated project manager.

5.5. PE5: Safety Management

LPS regional operations groups have designated safety committees responsible for hosting monthly safety meetings. In 2019 Magellan realized an opportunity to improve employee engagement during safety meetings. The monthly safety meetings—retitled as "Safety Engagement Meetings"—are developed by HSE and led by Operations personnel. The safety meeting redesign provides greater ownership of meeting content and allows local safety issues and concerns to be discussed. Section 4.3.1 provides details of how these meetings were administered through 2021. Based on interviews, the redesign is still a welcomed change, and all Operations personnel interviewed believe the new LMRA program increases employee participation and knowledge sharing across the LPS through use of the employee created LMRA videos.

LPS operational areas have authorization to work (ATW) processes in place for handling confined space entry, excavation safety, hot work, lockout/tagout (LOTO) and working at heights. Safe work practices are established using a combination of Job Hazard Analysis (JHA) and daily ATW permits. JHAs define the work steps to be completed, the hazards associated with each work step, and the mitigative measures put in place to address the hazards.

Operations groups work with the contractors to ensure the agreed safety measures are in place and evaluate on-the-job contractor safety performance through contractor safety evaluations and ATW spot audits. Each operational area across the LPS complete the required contractor safety audit and spot checks. Local Operations personnel work with contractors to define accurate job scopes and the applicable JSAs for each project.

Facility safety reviews (FSRs) are conducted annually at all staffed locations and at least biannually at unstaffed locations. FSRs are designed to ensure that each facility's security, tools and equipment, safety systems, and materials storage meet minimum inspection requirements. From the 15 FSRs conducted in 2021, the following is a list of common items that required attention:

- Missing and faded signage
- HAZMAT placard replacement
- Removal of old drums
- Windsock replacement
- Cover replacement for clamp-on meters

Employees feel empowered to safely manage, inspect/audit, or stop any work across the LPS. The goal and desired achievement of zero accidents or releases was repeatedly stated across all levels of the organization. The strong safety culture around the LPS is evident in the employee

knowledge and execution of safe work processes and in management expectations. Culturally embedded safety concepts were evident during discussions regarding procedures, training, permitting, covered task performance, and jobsite management. Every employee interviewed indicated being comfortable with stopping any job over a safety concern, which provides evidence of a strong safety culture and management support.

5.6. PE6: Environmental Protection

Environmental expectations are clearly defined within SIP procedures. The SIP covers all environmental requirements for water, air, ground, and waste management according to federal and state regulations. In addition, certain designated areas along the LPS have special requirements exceeding regulatory requirements, especially around the Edwards Aquifer. Every employee interviewed demonstrated knowledge of site-specific requirements and each of the special considerations required by the *Longhorn Mitigation Plan*.

Operations groups are supported by corporate environmental subject-matter experts (SMEs). These SMEs help LPS asset owners remain compliant with regulations by conducting compliance reviews, training Operations and applicable Technical Services personnel on job-specific environmental requirements and ensuring that all environmental compliance CMS tasks are completed in a timely manner.

Environmental compliance tasks are managed through the company's CMS. Compliance management reminders are sent to the responsible parties 30 days and 5 days ahead of the due dates. In general, compliance tasks are executed on time and in a comprehensive manner.

To reduce possible future environmental impacts, Magellan continued or improved several safety practices and measures for 2021:

- The LPS shuts down immediately during any suspected low-rate release events reported by third parties, while Operations investigates. The pipeline remains shut down until the pipeline's integrity has been verified.
- The LPS utilizes Pipeline Manager (PLM) advanced leak detection solution, monitored by the Control Center. PLM polls every 3 seconds to evaluate and compare volumes across short timeframes (i.e., 5, 10, and 30 minutes) and for slower leaks across longer timeframes (i.e., 6, 12 and 24 hours).
- PLM alarms and system performance indicators are evaluated monthly and compared to industry accepted KPIs.
- The Facility Leak Risk Reduction initiative was revamped with a goal for local operations to initiate risk reduction projects with an efficient and streamlined approval process to quickly address recognized leak risk opportunities.
- Lower explosive limit (LEL) and H₂S sensors were added at the mainline valves located on the upstream and downstream sides of the Red River and Llano River.
- Eight sections of the existing leak detection cable within the Edward's Aquifer area were replaced.

As a result of a 2017 leak, site remediation work continues adjacent to the Bastrop Station. All of the oil released has been cleaned up. A contractor that specializes in site remediation manages the project and continues to monitor for groundwater contamination.

Magellan continually strives for zero environmental impacts. In 2021, the LPS had zero PHMSA-reportable releases. One minor facility release allowed 20 gallons of product into secondary containment. The facility release resulted from an untightened connection during the installation of a tank union during maintenance activities. This total 20 gallon spill volume represents a minute amount when compared to the estimated 100 million plus barrels of product handled across the LPS during 2021, reflecting an excellent record.

Table 4 outlines LPS release volumes over the last 4 years. The data provides evidence of LPS employee efforts to achieve zero releases.

Table 4: 2018–2021 Product Release Data

Year	No. of Releases	PHMSA Reportable Incidents	Volume (bbl)
2018	7	2	283
2019	1	0	0.07
2020	2	0	0.47
2021	1	0	0.50

5.7. PE7: Asset Integrity

Magellan considers asset integrity to be a cornerstone of the overall risk program and IMP. Asset integrity issues are being managed by a variety of groups within LPS Operations and Magellan as a whole, with primary responsibility falling to the Asset Integrity and Facility Integrity groups. The pipeline IMP meets the regulatory requirements. Non-pipe assets such as storage tanks and facility piping and equipment are included in the FIMP, which is a subsection of Asset Integrity. Magellan has an annual process to identify and evaluate new threats to the pipeline and associated facilities.

Magellan maintains pipeline data used in threat evaluation. This data is distributed across several groups within Magellan. Many attributes associated with the pipeline data are in the process of being consolidated into the Magellan ArcGIS Portal System (MAPS), which is based on the overall company ArcGIS platform. Previous self-audit reports indicated that, while all the pipeline data is available for use to all appropriate personnel, navigating inside MAPS was difficult and required assistance; however, personnel interviewed for the 2021 self-report did not make the same criticism. Engagement with the MAPS system has continued to improve with significant improvements with Operations. During the 2022 interviews the auditors noted that Operations has begun making reference to MAPS data during investigative events, Code Red events (as described in Section 5.12), and drills. Magellan has implemented posted office hours for MAPS and personnel are available for employees who have questions around MAPS during those designated times. The development of MAPS was demonstrated and additional asset integrity information has been incorporated in 2021. Additional data layers and datasets continue to be identified for future inclusion in the system. Future improvements also include the ability to generate maps and alignment sheets from the system.

Magellan frequently utilizes "smart" in-line inspection (ILI) tools per the *Longhorn Mitigation Plan*, as well as per federal and state pipeline integrity regulations. Parts of the LPS were constructed with electric-fusion-welded (EFW) pipe, which Magellan recognizes could have potential manufacturing threats. Magellan is using its own company data, as well as industry data, to identify any trends for threats to the LPS, especially EFW pipe locations. In addition to utilizing tools capable of detecting threats to the longitudinal seam, mitigation item 9(b)(iv) requires periodic use of Hardspot Tools on a frequency established by the ORA. No Hardspot Tools were required or used in 2021.

Table 5 summarizes tool use from 2012 through 2021 and Table 6 provides segment-specific details for recent tool runs and associated digs.

Table 5: Historical Tool Use and Outcomes

Event	2021	2020	2019	2018	2017	2016	2015	2014	2012
Smart ILI Tool Runs ⁽¹⁾	3 (MFL and DEF)	15 (UCD & MFL for 8 segments)	6 (UCD & MFL)	3	4	2 (SMFL & MFL)	1 (TFI)	2 (SMFL & MFL)	1 MFL
2021 Resultant Digs	2	187	1	7	0	0	0	0	0

1. Tool runs completed prior to 2018 had associated repairs that were completed prior to 2018

Table 6: Segment-Specific Inspections and Digs

Line Segment	ILI Tool	Date	2020 Digs
Crane to Odessa	MFL/DEF	August 8, 2021	1
Crane to Texon	DEF	August 9, 2021	0
Satsuma to East Houston	DEF	July 6, 2021	1
Crane to Texon	UCD	2018	7
Texon to Barnhart	DEF/MFL/UCD	2021	35
Barnhart to Cartman	DEF/MFL/UCD	2021	24
Cartman to Kimble	DEF/MFL/UCD	2021	42
Kimble to James River	DEF/MFL/UCD	2021	18
James River to Eckert	DEF/MFL/UCD	2021	31
Eckert to Cedar Valley	DEF/MFL/UCD	2021	13
Cedar Valley to Bastrop	DEF/MFL/UCD	2021	11
Bastrop to Warda	DEF/MFL/UCD	2021	13
Satsuma to East Houston	DEF/MFL/UCD	2019	1

While the number of investigative digs listed in Table 6 may seem high when compared to previous years, the number of pipeline segments and total mileage inspected in 2020- and first-time tool technology runs are the drivers for the increase. The evaluations performed at anomaly locations are thorough, meet the requirements, and repairs are made appropriately.

The *Longhorn 2012 Environmental Assessment* requires Magellan to conduct nondestructive or destructive strength tests for 50% of all annual pipe excavations associated with ILI anomaly evaluations or remediation where material documentation does not exist. In 2021, 197 excavations were associated with ILI anomaly evaluations and where material documentation does not exist. Nondestructive positive material identification was completed on 110 of the excavated locations, meeting the criteria for material testing per the material documentation requirement.

The *Longhorn Mitigation Plan* risk management commitment is to maintain pipeline-related failure rates at or below a probability level of 1 in 10,000 (0.0001) per mile year. The scenario-based risk-mitigation analysis (SBRMA) for the 2020 operating year was performed in 2021 and resulted in no areas along the pipeline exceeding the failure rate commitment.

In 2020, Magellan implemented a new FIMP element of its Asset Integrity Plan. The FIMP requires a detailed FRA, which provides a risk analysis and reinspection interval recommendation based on an assessment of data from the various FIMP elements in place to protect the integrity of the facility. The FRAs are prioritized on a risk-based schedule. During 2021, Magellan completed one FRA for the LPS.

Each completed FRA includes a detailed spreadsheet with the following elements:

- FRA score (total, risk probability assessment, and facility vulnerability assessment [FVA])
- Risk consequence assessment
- Risk likelihood assessment
- Field questionnaire
- FIMP questionnaire
- Threat analysis
- Compliance history
- Release history
- Abnormal operations history
- Incident history
- Management of change request (MOCR) history
- Action items

The implementation of the FIMP FRA process to all LPS pipeline facilities exceeds the requirements of the *Longhorn Mitigation Plan* and applicable regulations. The FRAs are performed irrespective of HCA or risk tier for the pipeline and associated facility systems.

The ORA provides Magellan with an annual technical assessment of the actual effectiveness of the overall LPS SIP. The ORA provides feedback on the adequacy, frequency, and additional element criteria of the evaluation plan, which includes use of internal inspection devices, hydrotests, and other mechanical integrity assessment and confirming processes and technologies. The ORA results are factored back into the LPS SIP and integrated into the ongoing program. Prior to conducting the self-audit interviews, the 2021 ORA (covering 2020 operations) was provided to Magellan by the PHMSA-approved, independent, third-party ORA contractor, Kiefner and Associates, Inc. Magellan stated that the 2022 ORA report will be submitted to PHMSA.

During the interviews of the individuals who are responsible for the implementation of the Asset Integrity Program, there appeared to be a disconnect between the *Longhorn Mitigation Plan* risk tiers and assets covered under the Asset Integrity Program. When questioned about overlay of datasets, such as integrity excavations or designated HCAs with the *Longhorn Mitigation Plan* environmental assessment risk tiers, this information was not readily available. The explanation for this is that Magellan's implementation of the requirements of the Asset Integrity Program exceed the minimum requirements of the *Longhorn Mitigation Plan*.

5.8. PE8: Security

The SIP separates security into three categories—physical pipeline assets, information, and documentation. Asset security is managed through site-specific Site Security Plans (SSPs) or Facility Security Plans (FSPs). SSPs and FSPs are reviewed and updated annually. Information and document security protocols provide the processes and guidelines to protect information technology assets and sensitive security documents from unauthorized access.

Asset security is also maintained by an increased presence on the pipeline ROW during typical O&M activities. During ROW inspections, any unusual or suspicious situation is immediately reported to the Control Center and then investigated by Operations personnel. Control Center personnel utilize remote cameras at pumping stations to monitor key equipment and ensure site security.

FVAs are conducted annually by local operational leadership using guidance from a formal FVA template. Any issues identified during these assessments are captured in CMS and work orders are created to track and close action items. In 2021, the LHMP 12 valve site was evaluated and there were zero follow-up action items required, along with the following two recommendations:

- Evaluate installing H₂S detectors at the LHMP 12 valve site.
- Evaluate the electrical area classification for the LHMP 12 valve site.

5.9. PE9: Operations

The three primary operational goals expressed by LPS personnel were zero health or safety incidents, zero spills, and zero releases. Operations personnel utilize the procedures contained in Magellan's SIP documents to complete the myriad of O&M tasks required by federal and state regulations and according to the more stringent requirements within the LPS SIP. All the Operations personnel interviewed were aware of their respective O&M tasks, inspection frequencies, and requirements. All LPS operational areas utilize site-specific work plans and the ATW processes for handling working at heights, hot work, confined space entry, and other dangerous work. All employees and contractors sign the ATW before the work begins.

Company-level and site-specific operating procedures are available through Magellan's intranet file sharing site, LiveLink, and are reviewed annually to ensure safety and effectiveness. Procedure effectiveness is evaluated during observed task performance or through OQ practical evaluations. A majority of the daily operational tasks are dedicated to protecting the integrity of the pipeline, including ROW inspections, facility inspections, line locating, excavation monitoring, encroachment monitoring, and basic corrosion control activities. In 2021, 7,591 preventive maintenance (PM) tasks were completed, with a 97.4% on-time completion rate. Fifteen PM tasks were categorized as overdue but were completed before the end of the year. There were 175 additional work orders created in 2021. Table 7 shows the breakdown of all tasks assigned to operations in 2021.

Table 7: Completed Compliance Management System Tasks

Year	Number of Tasks by Type			
	PM Tasks	LHMP Tasks	Work Order Tasks	Action Item Tasks
2021	7,591	712	175	219

Safe operating limits for all systems of the LPS are managed by the Operations Control Center and are available via LiveLink. Operations works in parallel with the Controllers who remotely

operate the pipeline from the Tulsa Control Center. If unexplained AOCs occur, the Controllers contact field personnel to investigate the AOC. Controller workload is evaluated annually to ensure that Controllers have adequate time to react and respond to alarms and that workload is evenly distributed across all consoles.

Monthly operations and safety meetings are held to promote employee engagement, process ownership, and improvement. Results of recent AOC reviews are also covered during these meetings. A combined total of 14 AOCs and hazardous near misses were recorded in 2021. Most of these events occurred during start-up or shutdown of various systems. Each event was investigated to understand the root cause and to develop the necessary corrective actions to prevent the recurrence of similar events. In 2021, three lessons learned were developed and shared during the monthly SEMs (which are discussed in Section 4.3.1 and Section 5.5).

Table 8 provides the number of abnormal operations events that have occurred over the past 8 years. The single hazardous near miss for 2021 was a result of an H₂S alarm activating at James River. A technician was called to investigate and no H₂S was discovered. The system was reset with no further issues.

Table 8: Historical Incorrect Operations / Near Miss Breakdown

Event Type	2021	2020	2019	2018	2017	2016	2015	2014
Abnormal Operations	14	18	21	18	12	14	44	75
Hazardous Near Misses	1	3	0	0	4	4	9	2

As demonstrated in Table 8, the AOC count dropped significantly from 2014 through 2021 and has remained relatively flat since 2016; indicating that strong processes and procedures are in place and used across LPS operations.

5.10. PE10: Community Relations

Magellan leverages its LPS Public Awareness and Damage Prevention programs to meet its commitments of promoting cooperation in protecting the pipeline and providing information to potentially affected communities about detection of and responses to well-water contamination. The pipeline information shared in 2021 was sent to the following:

- Affected public residences, general businesses, and schools within 1/2 mile of the pipeline for urban areas and within 2 miles of the pipeline in rural areas
- Excavators and farmers within 10 miles of the pipeline
- Emergency officials and local public officials in each county on the ROW or within 20 miles of the pipeline

Magellan participated in an outreach program with scheduled emergency responder and excavator meetings in all 25 counties (as shown in Figure 1 in Section 1.1) per its *Longhorn Mitigation Plan Annual Commitment Implementation Status Report*. Due to continued COVID-19 restrictions, a few meetings were held remotely, but in-person meetings increased in 2021. Magellan emailed teachers the “Pipelines All Around You” presentation as well as a link to an online survey for parents and students to take together on March 31, 2021 and October 21, 2021.

Based upon data provided in the 2021 Public Awareness Summary Report, attendance for the meetings did not statistically change from previous years but was a little higher vs 2020. Highlights from 2021 include the following:

- Made face-to-face contact with 132 emergency responders across all counties, providing maps and other information about the LPS in relation to public safety

- Personal contact with 283 stakeholders along the LPS ROW via email, phone call, or face to face and posted several updates on the Magellan Facebook page
- Made 21 face-to-face landowner contacts related to pipeline safety and land use
- Continued participation in the Houston area Safe at Home school program, reaching 31 teachers across 21 elementary schools
- Continued operation of the Magellan kiosk program to distribute pipeline safety and damage prevention information, providing refills of promotional items for six legacy stores, and setting up three new stores for an additional nine kiosks.
- 2021 sponsorship with a collaborative group for National Excavator Initiative, featuring Mike Rowe from Dirty Jobs, which totaled about 500 million impressions.
- Participated in quarterly local emergency planning committee (LEPC) meetings in Nueces County
- Attended TX 811 Damage Prevention Excavation Safety event to present the new Virtual Reality Excavator Simulator
- In 2020 Magellan provided 7,614 pipeline educational door hangers to stakeholders who back up to the ROW in Tier I and Tier II class locations from Houston to El Paso. This program runs every other year and is scheduled to run again in 2022
- Maintained liaison by contacting 4,640 Emergency Officials and 9,148 additional responders along the ROW via email (92% delivered) promoting Pipeline Safety, leak recognition, emergency response and pipeline awareness information.

Magellan encourages individuals along the LPS ROW to contact Magellan if they suspect any pipeline leak. Due to the nature of the enhanced Public Awareness and Damage Prevention programs—including an increased mailing area and supplemental programs—Magellan receives a significant number of suspected release reports that are ultimately attributed to other pipeline operators or residential natural gas leaks. Despite the high number of false-positive reports, the LPS immediately shuts down operations upon receipt of such notice and Magellan dispatches personnel to ensure safety and to determine Magellan's responsibility.

5.11. PE11: Change Management

Magellan utilizes a strong MOCR process, which includes an electronic tool (Velocity EHS) for developing and routing standard MOCR forms. The electronic tool allows for stakeholder assignment and approval. MOCRs are written for all changes to non-SIP operating procedures and equipment/facilities modifications. Emergency MOCRs utilize the same review and approval process as standard MOCRs. Emergency MOCRs are expedited by utilizing direct communication.

A total of 69 MOCRs were issued for the LPS in 2021 and none were identified as emergency MOCRs. Of the 69, 16 MOCRs were identified as impacting the *Longhorn Mitigation Plan*, six of which do not list an actual closure or cancel date and are considered to still be open. Detail reports for all 16 MOCRs identified as impacting the *Longhorn Mitigation Plan* were reviewed and demonstrate the appropriate level of review by the impacted personnel and/or departments.

5.12. PE12: Emergency Response and Preparedness

The Emergency Response Plan (ERP) utilized across the LPS contains the necessary plans and procedures to support the unique, site-specific conditions along the length of the system. Magellan designated 120 different tactical sites along the LPS to ensure that adequate procedures, personnel, and equipment are available to respond in the event of a release. Since the Austin area contains the Edwards Aquifer, an oil spill response organization (OSRO) is located there. Personnel from the Austin OSRO are also embedded inside of local LPS operations to help with damage prevention and ROW inspection tasks. For example, OSRO-qualified personnel perform the required weekly foot patrol ROW inspections.

LPS employees have received the initial 24-hour HAZWOPER training, followed by annual refresher training. All qualified individuals (QIs) are required to take the Federal Emergency Management Agency (FEMA) ICS 100 and ICS 200 courses for an introduction to the ICS systems and the basic fundamentals of emergency management. Annual ERP training is mandatory for all Operations employees, along with required training program evaluations and emergency response effectiveness reviews.

Site-specific drills and/or tabletop exercises are conducted on an annual basis. Table 9 summarizes the emergency response tabletop exercises that were conducted and evaluated for 2021.

Table 9: Emergency Response Tabletop Exercises – 2021

Milepost	Location	Drill Scenario
MP 131	Smithville, TX	Pipeline rupture into Colorado River
MP 9.5	Texas City, TX	Worst-case scenario and Code Red review
MP 11	Los Cruces, NM	Worst-case scenario and Code Red review

The live drill, which involved boom deployment, was performed in Austin, Texas on Ladybird Lake. The drill was supported by multiple area operations across the LPS, including the Texas Commission on Environmental Quality (TCEQ), Austin Watershed Protection, and the Austin Fire Department. US Ecology provided instructions for pulling numerous boom types, with each group subsequently practicing and pulling boom.

All LPS drills involve local emergency response personnel and agencies. When a drill is completed, after-action reviews are conducted to determine if the procedures were correctly followed and if they are effective. The drill evaluations are shared across LPS operational areas for review and any action items developed are entered into CMS and tracked through closure. There were no after-action items developed from the boom deployment drill in Austin.

In the event of a reported leak, Magellan initiates a program called Code Red. The program provides a standardized, focused response to protect the public, employees, and the environment quickly and safely. When a Code Red event is initiated, pipelines are immediately shut down, a multi-person, interactive "conference bridge" phone connection is established, and all designated Code Red responders access the conference bridge. As part of this, the Control Center divides Code Red response activities among four control room personnel ("4-on-the-floor") to allow the on-duty (or designated) Controller to focus on a controlled shut down. The 4-on-the-floor team manages reporting requirements, internal and external notifications, and leads the conference bridge. The Code Red procedure allows all essential company personnel to react and respond accordingly and initiates the Incident Command Structure (ICS). The employees interviewed displayed intimate knowledge of the Code Red processes and believed that the focused response

to a Code Red event minimizes environmental impacts while ensuring public and employee safety.

5.13. PE13: Incident Management

Magellan’s incident management procedures, which elicit different investigation methods, utilize the classifications listed in Table 10.

Table 10: Incident Classifications

Classification	Description
Major	Events that result in a fatality, an injury requiring hospitalization, major news coverage, or property loss more than \$500M
Significant	Events that result in a fire or explosion with damage more than \$25M, gasoline product quality issues that are loaded out over the rack, or injuries and citations in excess of \$25M
Minor	Events that result in a fire or explosion less than \$25M, non-gasoline product quality issues, and injuries or illnesses that require first aid.
Near Miss	An unplanned, undesired event that did not result in significant harm or damage but which, under slightly different circumstances, could have resulted in a minor, significant, or major incident
Hazardous Condition	A hazard or any existing or potential condition in the workplace that—by itself or by interacting with other variables—can result in injury, property damage, and/or other losses
Repair	A temporary or permanent alteration made to the pipeline or its affiliated components that is intended to restore the allowable operating pressure or correct a deficiency that could result in a mechanical integrity failure

Magellan's Safety and Regulatory Compliance Groups review all incidents that occur on the LPS to determine if an incident investigation is needed. To ensure timely completion of action items, action items are entered and tracked within CMS. AOCs are classified and followed up on by Facility Integrity Engineering. Incident and AOC investigation results and lessons learned are shared across LPS operational groups and are typically discussed during monthly Safety Engagement Meetings and with contractors during safety tailgate meetings. Table 11 provides a breakdown of incident investigations since 2013.

Table 11: Historical Incident Investigation Breakdown

Type	2021	2020	2019	2018	2017	2016	2015	2014	2013
Hazardous Near Misses	2	3	0	4	8	4	5	2	4
Incident Investigations	4	4	3	3	24	8	18	10	8

In 2021, a total of 14 AOCs occurred. Of the 14 AOC investigations, three resulted in full incident investigations and one in a local incident investigation. Three of these four incidents were categorized as minor and one as significant.

During the interviews, an LPS Damage Prevention (DP) Coordinator recounted a 2021 incident where the pipeline was struck and needed to be sleeved. This incident occurred when the DP Coordinator responded to a One-Call and inadvertently located and marked an AC mitigation cable that ran parallel to the pipeline. As a result, the LPS pipeline was struck, because the excavator assumed he was digging parallel to the pipeline. The local incident investigation resulted in a procedure change that requires the temporary disconnection of AC mitigation cables in areas where line-locating is occurring; however, a formal lesson learned document was not developed and distributed from this incident.

5.14. PE14: Compliance Management

Magellan uses CMS to document its regulatory requirements and associated tasks. The CMS tasking system sends reminder emails to the task owners about upcoming task deadlines. Reporting functionality is also available to provide documentation of compliance and *Longhorn Mitigation Plan* status. Magellan assigns personnel to oversee compliance at different levels within the organization.

Magellan conducts several types of internal audits or compliance reviews. CMS compliance reviews are conducted on a 1-to-3-year cycle. The Magellan internal audit group conducts environmental audits approximately every 5 years. There were no outside regulatory agency inspections in 2021.

In addition to 49 CFR 195 operational requirements, the LPS is subject to *Longhorn Mitigation Plan* conditions. Magellan publishes multiple reports to demonstrate compliance with these special conditions, including the *Longhorn Pipeline Mitigation Plan Scorecarding & Performance Metrics* and the *Longhorn Mitigation Plan Annual Commitment Implementation Status Report*. These reports are compiled manually from other internal system reports and from narrative related to the commitment requirement. These reports are updated on an annual basis in conjunction with Magellan's annual self-audit.

For the 2021 self-audit, numerous reports were reviewed both during onsite interviews and offsite. Appendix B lists the key documents reviewed in the preparation and execution of this self-audit. It is obvious from review that a high level of commitment to compliance is prevalent within the Magellan organization and among responsible personnel.

5.15. PE15: Commercial Operations

This SIP element is not covered under the 2021 self-audit, as it does not impact LPS operations.

6.0. Considerations

During the 2021 LPS SIP self-audit, the auditors concluded that the requirements and commitment to the LPS SIP are embedded within Magellan's employee and company culture. However, reinforcing and building culture continuously requires reevaluation and improvement. Consequently, the auditors provide the following considerations for the LPS SIP and process improvements.

6.1. Program and Compliance Management

Magellan has been conducting annual third-party self-audits and ORA audits since 2005. The resulting process and procedure recommendations have been successfully used and improved upon by Magellan for 15 years, as reflected by the fact that leak volumes, AOCs, and inaccurate operations have continually been trending downward. All personnel interviewed during the 2021 audit answered questions quickly and consistently, without needing extended thought, and in enough detail to clearly demonstrate that the LPS SIP protocols and requirements are part of the company culture. The auditors note that many of the items reviewed during the self-audit are also considered during the annual ORA.

Based on the history and success of the annual LPS SIP self-audits and ORA audits, Magellan should consider contacting PHMSA to seek a change in the frequency requirement for performing one or both audits.

7.0. Conclusion

LPS operational and support personnel have effectively managed the deliverables required by the LPS SIP. The program knowledge, attention to detail, and dedication in support of the LPS SIP displayed by personnel are evident. Personnel interviewed during the 2021 audit answered questions quickly, without extended thought, and in enough detail to support that the required LPS SIP protocols are part of the company culture. The supporting programs in place are comprehensive, mature and—notably—evergreen. In support of continuous improvement, and in addition to suggestions from the previous self-audits, the auditors for 2021 have provided some program considerations for Magellan; however, the LPS SIP appears to be robust and properly implemented.

Appendix A Acronyms

Term	Description
API	American Petroleum Institute
AOC	Abnormal Operating Condition
ATW	Authorization to Work
bbl	Barrels
CFR	Code of Federal Regulations
CMS	Compliance Management System
DEF	Deformation Inspection Tool
DOT	U.S. Department of Transportation
EFW	Electric-Fusion-Welded
EMR	Experience Modification Rate
ERP	Emergency Response Plan
FIMP	Facility Integrity Management Program
FRA	Facility Risk Assessment
FSP	Facility Security Plan
FSR	Facility Safety Review
FVA	Facility Vulnerability Assessment
HCA	High Consequence Area
HSE	Magellan's Health, Safety and Environmental Group
ILI	In-Line Inspection
IMP	Integrity Management Program
IR	Incident Rate
ITP	Individual Training Plan
JHA	Job Hazard Analysis
KPI	Key Performance Indicator
LMRA	Last-Minute Risk Assessment
LMS	Learning Management System
LPS	Longhorn Pipeline System
MAPS	Magellan ArcGIS Portal System
MFL	Magnetic Flux Leakage
MOCR	Management of Change Request
NACE	NACE International (formerly the National Association of Corrosion Engineers)

Term	Description
NEO	New Employee Orientation
O&M	Operations and Maintenance
OQ	Operator Qualification
ORA	Operational Reliability Assessment
OSHA	U.S. Occupational Safety and Health Administration
PE	Process Element
PHMSA	Pipeline and Hazardous Materials Safety Administration
PSSR	Pre-Start-Up Safety Review
ROW	Right-of-Way
SBRMA	Scenario-Based Risk Mitigation Analysis
SEM	Safety Engagement Meeting
SIP	Magellan Midstream Partners, L.P. System Integrity Plan
SME	Subject-Matter Expert
SMFL	Spiral Magnetic Flux Leakage
TFI	Transverse Field Inspection
TPDPP	Third-Party Damage Prevention Program Annual Assessment
TRIR	Total Recordable Incident Rate
UCD	Ultrasonic Crack Detection

Appendix B List of Key Documents and Interviews

B.1. Self-Audit Documents

No.	Document Name
1	Magellan System Integrity Plan
2	2019 and 2021 Mitigation Plan Score Card & Performance Metrics
3	2021 Mitigation Plan Commitment Implementation Status Report
4	2021 Incorrect Operations Spreadsheet
5	2021 Asset Integrity Report
6	2021 Action Item Spreadsheet
7	2021 API 653 Internal and External Inspections and issues identified
8	2021 Longhorn Year End Preventative Maintenances Tasks Summary (CMS Summary provided)
9	2021 Abnormal Operating Condition (AOC) Report
10	2021 Incident Data Reports
11	2021 Incident Investigation Reports and actions taken (Investigation Events)
12	Facility Inspection Forms
13	2021 Longhorn Cedar Valley to Bastrop 18" MFL and UCD Dig Data
14	2021 Management of Change Data: <ul style="list-style-type: none"> • Selected MOCR Reports • Open MOCR list • Closed MOCR list • Pre-Start-Up Safety Reviews (PSSRs)
15	2021 Lessons Learned and Safety Alert Bulletins
16	2021 Scenario Based Risk Mitigation Analysis (SBRMA)
17	All correspondence to/from local, state and federal agencies regarding incidents, drills, inspections or other issues
18	2021 Valve Inspection Reports
19	2020 Operations Reliability Assessment Reports and actions summary
20	2021 Corrosion Control Records: <ul style="list-style-type: none"> • MPL Longhorn Rectifier Maintenance Activity Report • MPL Longhorn Test Point Exception Report • Atmospheric Maintenance Report • Close Interval Survey Results for Tier III • Coupon Test Results • NACE Rust Test Results • Rectifier and Critical Bonds Records • And additional maintenance required reports

No.	Document Name
21	2021 Leak Detection Summary report
22	2021 Public Awareness Self-Assessment
23	2021 Public Awareness Summary Report
24	2021 Facility Risk Assessment (FRA) Spreadsheets
25	2021 Overpressure Inspection Records
26	2021 Emergency Response Drill and actions taken
27	2021 and 2021 Valve Stems Replaced and Pending Replacement
28	Tank Overfill Setpoint Procedures (7.10-ADM-003-Tank Alarm Setting Process)
29	2021 ILI Pressure Reductions
30	Facility Safety Reviews
31	2021 Aerial Patrols – Crane Sta to MP 694, Galena Park to MP 528, Recharge Zone

B.2. Personnel Interviews

The following subsections list the personnel in attendance at each local-office interview that was conducted for this year's self-audit. In each case, Matt Argo was in attendance and supported the interview process.

B.2.1. Austin Interviews

Name	Title
Danny Stokes	Area Supervisor

B.2.2. Tulsa Interviews

Name	Title
Rick Woolridge	Manager Corrosion
Clyde Clausen	Manager Pipeline Integrity
Dennis Vasicek	Supervisor Asset Integrity (Pipeline)
Bryan White	Manager, Pipeline Integrity
Matt Miskelly	P/L Integrity Supervisor
Zach Howard	Director, Facility Integrity
Darian Thomas	Supervisor, Facility Integrity Engineering
Rick Bondy	Emergency Response Program Manager
Pat McKenzie	Director, Operations
Buddy Cronk	Operations Manager
Joe Butler	Director Operations Control

Name	Title
Karrisa McCarty	Manager, Operations Control
Ryan Addison	Supervisor Operations Control Training
Doug Mitchell	Environmental Manager
Monica Olson	Environmental Specialist

B.2.3. Crane Interviews

Name	Title
Luke Potratz	Manager, Operations
Jake Johnson	Area Supervisor, Odessa
Jared Irvin	Area Supervisor, Crane
Chris Oliveros	Damage Prevention Operator
Kyle Rauch	Operations Supervisor

B.2.4. El Paso Interviews

Name	Title
Cliff Bryant	Area Supervisor
Greg Melton	Damage Prevention Operator



Appendix C Statements of Qualifications for the Auditors

C.1. William C. Bannister – Regulatory Compliance Practice Director

C.1.1. Summary

William (Bill) C. Bannister has over three decades of management and training experience, primarily focused in the oil and gas industries where he has become an expert in corrosion management, PHMSA regulatory compliance, OQ, and safety management systems. Coupled with his expertise in operations, training, audit support, and project management, he has guided several industry companies in achieving safe, reliable, and compliant operations. One of Mr. Bannister's special interests is process safety management (PSM), which allows for leveraging his many other areas of expertise to perform risk analysis and hazard assessments from a coordinated, varied, and operational perspective. Mr. Bannister provides clients with expert guidance across all aspects of their regulatory compliance and operations requirements and offers insights into their training, OQ, workforce development, project management, and corrosion control programs.

C.1.2. Experience

Integrity Solutions® Ltd, 2019–Present

- Regulatory Compliance Practice Director

NuStar Energy, 2009–2018

- Director of Operations – East Region
- Senior Manager – Training and Development
- Corrosion Manager

BP U.S. Pipelines, 2000–2009

- OQ and Training Manager / Corrosion Specialist

Corpro Companies, 1996–2000

- Project Manager and Construction Foreman

Lakehead Pipeline (now Enbridge), 1985–1996

- Operator and Corrosion Technician

C.1.3. Education

B.Sc. Organizational Leadership and Supervision – Purdue University (West Lafayette, Indiana)

C.1.4. Certifications / Training

- NACE International – Cathodic Protection II
- NACE International – Coatings Inspector-in-Training

C.1.5. Associations

- American Pipeline Institute – Operator Qualification Committee, 2003–2008
- American Society of Mechanical Engineers – ASME B31Q Pipeline Personnel Qualification Committee, 2005–2008

C.2. Chris Bullock – Senior Integrity Management Consultant / Senior Regulatory Compliance Consultant

C.2.1. Summary

Chris Bullock has over two decades of pipeline integrity management and regulatory compliance experience. He has held senior-level leadership and technical roles for a large pipeline operator and has been responsible for developing and implementing pipeline safety compliance programs; providing technical expertise in support of operations, design, and construction activities; driving innovations; and mitigating risk. Mr. Bullock has also provided the pipeline industry with years of support, with his involvement in organizations such as INGAA and SGA, and is a current member of the ASME B31.8 Committee. As a consultant, Mr. Bullock uses his exceptional regulatory compliance and technical knowledge to provide internal and external audit support and to help clients develop and integrate compliance programs, risk management programs, and integrity management plans.

C.2.2. Experience

Integrity Solutions[®] Ltd, 2015–Present

- Senior Integrity Management Consultant
- Senior Regulatory Compliance Consultant

Enable Midstream Partners, 1996–2015

- Director, DOT Compliance
- Manager, Integrity Technical Programs

C.2.3. Education

- MBA, Management – Louisiana Tech University (Ruston, Louisiana)
- MBA, Finance – Louisiana Tech University (Ruston, Louisiana)
- B.Sc. Mechanical Engineering – Louisiana Tech University (Ruston, Louisiana)

C.2.4. Certifications / Training

- Professional Engineer, Louisiana
- Mechanical Engineer, Reg. number E-26612

C.2.5. Publications and Presentations

- "Navigating the Requirement of Natural Gas Material Records Material Verification and MAOP Reconfirmation" for the Integrity Solutions *In The Pipeline* webinar series (presenter and content development).
- "How the New 49 CFR 195 Regulations May Impact Your Operations" for the Integrity Solutions *In The Pipeline* webinar series (presenter and content development).
- "49 CFR 192 RIN-1 Final Rule – How to Manage Integrity in HCAs, MCAs, and Other Areas" for the Integrity Solutions *In The Pipeline* webinar series (presenter and content development).

- Presented at PHMSA "Public Meeting on Improving Pipeline Risk Assessments and Record Keeping," representing gas transmission pipelines.
- Interstate Natural Gas Association of America (INGAA), regular attendee and participant.
- Assisted in developing INGAA response to PHMSA's "Mega Rule" Advanced Notice of Proposed Rule-Making for updates adopted October 2019, effective July 1, 2021.
- Member of the Southern Gas Association (SGA) Pipeline Integrity Management committee and Pipeline Regulatory Compliance committee.
- Facilitator for SGA Natural Gas Connect Academy's "Mega Rule Pipeline Integrity Overview Roundtable."