

2015
Annual Inspection of the
South Orient Rail Line
Under Lease to
Texas Pacifico Transportation Company



May 11 - 14, 2015



Introduction

The thirteenth annual review of Texas Pacifico Transportation Company (TXPF) operations on the South Orient rail line (SORR) was conducted from May 11 thru 14, 2015. The Rail Programs Section staff of the Rail Division performed this review and was accompanied by TXPF senior management on the hy-rail inspection of the line. A map of the SORR is included in Appendix A.

Financial Review

The financial report for the calendar year January 1, 2014, through December 31, 2014 shows positive income from operating the rail line, including a positive cash flow and substantial net profit as traffic is increasing since TxDOT began the rehabilitation of the east end of the line in 2009. TxDOT has continued an annual program of track rehabilitation in a generally east-to-west direction since that time. As with previous financial reports, revenues were received from the interchange of cars with connecting railroads during that period, demurrage fees assessed shippers and receivers for loading and unloading time periods, freight car storage for other car owners, and lease revenues assigned to TXPF. Expenses were categorized as transportation, maintenance, general administrative, and other. Expenses listed were routine costs associated with maintenance and operations.

Traffic

The largest volume of traffic on the line in 2014 continues to be due to the dramatic increase in oil and gas exploration efforts in the region. Sand unloading facilities are located in San Angelo, Barnhart, Big Lake, McCamey, Rankin, Fort Stockton, Harriet, Sulphur Junction (Figure 1), and Fort Stockton. Crude oil loading facilities have opened at San Angelo, Barnhart, McCamey (Figure 2) and Sulphur Junction.



Figure 1 – Sand Unloading, Sulphur Junction



Figure 2 – Crude Oil Loading east of McCamey

South Orient Annual Inspection

Calendar Year 2014

Inspection Dates May 11 – 14, 2015

Inbound sand received totaled 22,906 carloads, an increase of 50%. Outbound crude oil shipments totaled 1,422 carloads for the year, a decrease of 75% compared to 2013. The total carloads interchanged were 25,360, which is a 7.8% increase over 2013. Wheat shipments totaled 196 carloads, down from the 927 carloads in 2013, far below the 1,147 carloads in 2010 due to the on-going drought conditions. Table 1 shows the carloads moved by commodities and the percent of change over 2013. It should be noted that the drop in traffic between 2008 and early 2009 was largely due to the downturn in the national economy. Traffic began increasing during the latter half of 2009, which is when TxDOT began the rehabilitation of the eastern tracks. Annual carloads averaged 2,031 from 2001 through 2009, with dramatic increases since. TXPF projects that traffic will not rise significantly in the future due to a drop in crude oil profit margins and the ongoing drought.

2014 Carloads by Commodity			
	2013	2014	2013-2014
Commodity	Carloads	Carloads	% Change
Crude Oil	5,787	1,422	-75
Miscellaneous	1,171	503	-57
Sand	15,269	22,906	50
Steel	404	333	-18
Wheat	927	196	-79
Total	23,558	25,360	8

Table 1 – Carloads by Commodity

Potential Traffic

There are new sand unloading and crude oil loading facilities in various stages of development at this time. Western Towers, located east of San Angelo, has completed the expansion of their facility, and is providing some transloading services for others on their property (Figure 3).



Figure 3 – Western Towers Facility at MP 63.3

The facilities that have located on the line since 2009 have experienced a steady increase in traffic as their operations become more efficient and volumes increase. TXPF is working with other new customers who have expressed an interest in transporting freight on the line which include additional sand and crude oil facilities, as well as mining for granite, sulphur, and zeolite at other locations.

Operations

TXPF's current timetable is dated March 4, 2012, and the railroad uses the General Code of operating rules.

The increased customer base and on-going economic development efforts continue to have a significant impact on TXPF staffing. TXPF now has 54 employees in Texas, and expects that employment may double in the future as carload volumes increase.

South Orient Annual Inspection

Calendar Year 2014

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Train crews and front-line managers work out of the San Angelo yard where the railcar storage yard and equipment servicing facilities are located. TXPF's main office is in the city of San Angelo (Figure 4). TXPF continues to contract for signal maintenance and track maintenance.



Figure 4 – TXPF Offices in San Angelo

TXPF is performing many car and locomotive inspection and maintenance activities with in-house staff. Heavy locomotive maintenance is generally provided by the equipment lessor. TXPF now has 29 locomotives which are used in various configurations between San Angelo Junction and Fort Stockton. Trains now operate at 25 mph from San Angelo Junction to San Angelo (MP 2 to MP 69; MP715 – Figure 5) and from west of San Angelo to Sulphur Junction (MP 723 to MP 869.4).



Figure 5 - MP 68.3, TXPF Train Moving West to San Angelo

Infrastructure

Track

San Angelo Junction at the eastern part of the line is where interchange with BNSF and Fort Worth & Western Railway occurs. The jointed rail between San Angelo Junction and San Angelo primarily consists of 70#¹, 85#, and 90# material that was manufactured between 1915 and 1966. There are 9 miles of 112# rail west of Ballinger, from MP 39 to MP 48. TxDOT has replaced a total of 52,751 linear feet of worn rail in some curves in this section with 132# and 136# continuously welded rail. TXPF has continued the relaying of worn or small-sized rail in curves with 115# or higher CWR.

TxDOT has begun a tie replacement program west of San Angelo beginning at MP 721.52. The program includes the reconstruction of grade crossings when needed. This will be a multi-year program that shall continue for some time, funded through carload fees from TXPF and limited state funds. From MP 721.52 to MP 738.1, the jointed rail is 70#, 85#, and 112# material, which was manufactured between 1915 and 1966. TXPF has replaced some ties and ballast, along with surfacing work to address alignment and profile deviations within these limits.

¹ Rail is classified by weight (in pounds) per linear yard

The railroad is designated as Class II (25 mph) from MP 738.1 to 869.7. The track is constructed predominantly of 112#, 115#, and 131# continuously welded rail between MP 738.1 and 855.6 with jointed rail between MP 846 and MP 849.7. TXPF constructed a new 7,300' siding near Barnhart (Figure 6).



Figure 6 – MP 796.0, new siding

The new crude facility near McCamey includes a large tank farm (Figure 7) and a new mile-long spur into the facility (Figure 8).



Figure 7 – MP 836.6, Crude Oil Tanks



Figure 8 – MP 836.6, Crude Oil Lead Track

The tracks are constructed with substandard (for today's carloadings and tonnage), 70# rail beginning just west of the switch at Sulphur Junction at MP 869.4 (Figure 9). TxDOT has developed a project to replace the 70# rail from MP 869.4 to MP 881.92 (through Fort Stockton) in order to improve speed and capacity on this section of the line. Funding has not been secured at this time, though TxDOT is pursuing both state and federal appropriations.



Figure 9 - MP 869.4, Sulphur Junction

The yard at Fort Stockton is still being used by sand transloaders (Figure 10). The siding at Belding was recently leased for pipe transloading (Figure 11). The 70# rail continues for a distance of approximately 75.6 miles to the Union Pacific interchange (MP 945.34) at Alpine. This section of the line is also limited to 10 mph due to rail size and track conditions.



Figure 10 – MP 881, Sand Transloading



Figure 11 – MP 892, Belding

The inspection team does not travel over Union Pacific (UP) trackage from MP 945 to MP 957, due to restrictions in the trackage rights agreement. The South Orient infrastructure begins again at MP 956.76, also known as Paisano Junction (Figure 12).

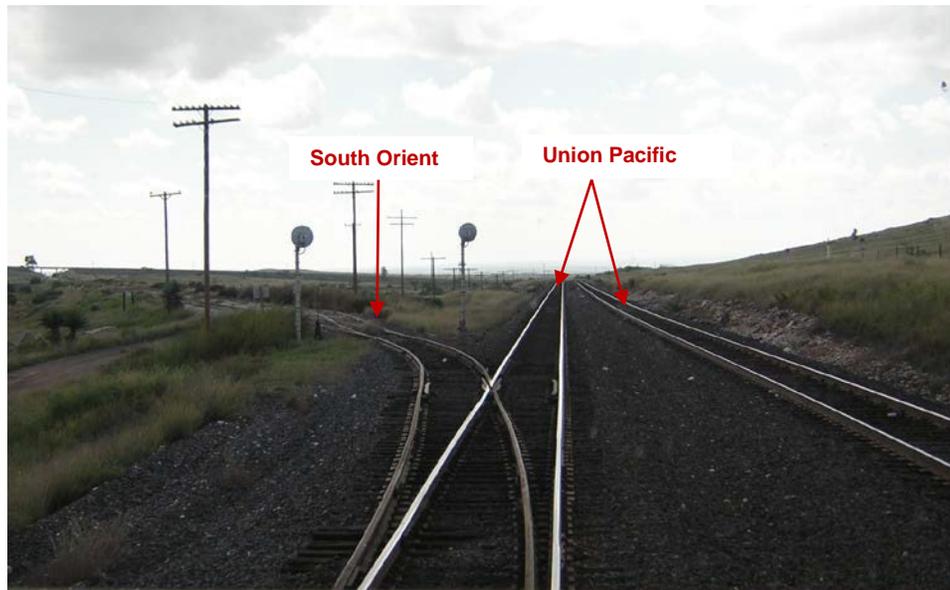


Figure 12 – MP 956.76, Paisano Junction

The ties for the first 11 miles south of Paisano Junction are in generally poor to bad condition (Figure 13).



Figure 13 – MP 968.0

Numerous track washouts exist in Presidio County as a result of flash floods.



Figure 14 – MP 1006.2, Washout

The roadbed has completely washed away at MP 1006.5 due to heavy rains (Figure 14). The rail line is impassable by train traffic (Figure 15).



Figure 15 – MP 1006.5, Washout

The section of tracks between MP 968 and Presidio still displays the benefit of TxDOTs rehabilitation project during 2005 and early 2006. Over 37,000 ties were installed with associated ballast and surfacing in this segment of the line (Figures 16 and 17).



Figure 16 – MP 1006.6



Figure 17 – MP 1024.8

Grade Crossings

TxDOT's rehabilitation project on the east end included the reconstruction of 119 grade crossings between San Angelo Junction (MP 0) and the west side of San Angelo (MP 721.52). Additional crossings will be reconstructed west of San Angelo as the rehabilitation program continues. (Figure 18).



Figure 18 - MP 735.1

The need for reconstruction of these crossings is impacted by the inability of small local governments to fund crossing rehabilitations.

Bridges and Drainage

TxDOT's work on the east end of the line included rehabilitation work to 30 bridges, the replacement of a structurally deficient bridge with corrugated metal pipe, the replacement of a decayed, timber box culvert with corrugated metal pipe, other drainage repairs, and the replacement of a fire-damaged bridge at MP 715.1 with a concrete structure (Figure 19). Ties were also replaced on all open-deck bridges (Figure 20) and on most ballasted deck bridges.



Figure 19 – MP 715.1, Bridge Replaced



Figure 20 – MP 716.6

TXPF has developed a bridge management program which was reviewed and approved by the FRA. In 2014, TXPF continued routine maintenance and repairs to bridges that were necessary to assure the safety of trains and hazardous materials cars.

There are various locations west of Fort Stockton where bridge and drainage structure issues exist (Figures 21, 22, & 23). These issues will need to be addressed as traffic develops along portions of the line that are currently out-of-service.



Figure 21 – MP 985.9, Channel Erosion



Figure 22 – MP 1007.4, Erosion of Road Bed at Box Culvert



Figure 23 – MP 1011.8, Roadbed Damage at Box Culvert

TxDOT and TXPF are in the process of replacing the U.S. portion of the international rail bridge over the Rio Grande at Presidio, which was damaged by fire on February 29, 2008 and March 1, 2009. TXPF is developing the plans and specifications while TxDOT is working on an environmental approval. Once those efforts are complete, TxDOT will coordinate project review and approval with state and federal agencies, TXPF will be responsible for reconstructing the bridge. A timber portion of the bridge just north of the levee still stands (Figure 24), though 15 bents on the extreme north end were damaged by the March 1, 2009 fire.



Figure 24 – MP 1029, Timber Structure North of Levee

The International Boundary and Water Commission made improvements to the levee system in Presidio which has resulted in the tracks being buried in the levee (Figure 25). TxDOT's plans will include the removal of this fill material and the installation of flood gates or stop blocks over the tracks to retain the integrity of the levee system.



Figure 25 – MP 1029, Tracks Buried in Levee

The U.S. portion of the bridge, south of the levee, was completely destroyed by the February 29, 2008 fire. The Mexico portion, made of concrete, still stands (Figure 26), though it is reported that the bridge approaches from that side of the border were washed out during a recent flood event.



Figure 26 – MP 1009, U.S. International Rail Bridge Location & Remaining Mexico Structure

Recommendations

TXPF should continue to increase their customer base and aggressively pursue additional traffic. Both parties should continue to pursue funding for the rehabilitation of the line west of Sulphur Junction and the restoration of traffic across the border at Presidio.

Conclusions

TxDOT and TXPF have made significant investments in the improvement of the east end of the line which has increased train speeds and capacity. TXPF has been pursuing new customers which resulted in a dramatic increase in traffic and continuing increases projected for the coming year. The public-private partnership between TxDOT and TXPF has revitalized a rail corridor that was slated for abandonment, resulting in improved transportation efficiency, economic development opportunities, increased employment in the region, and improved safety.

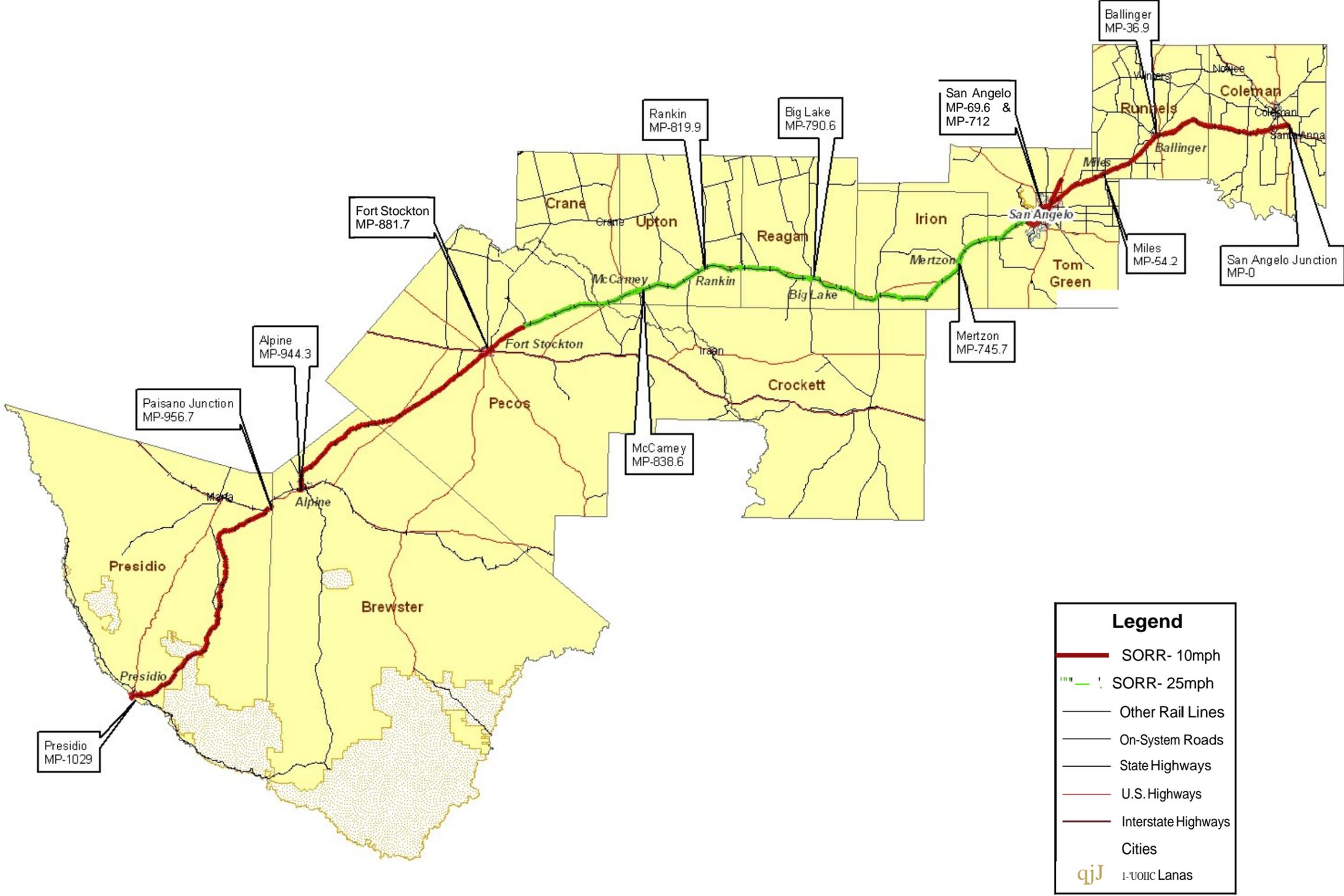
Appendix

2015 Annual Inspection of the South Orient Rail Line

Appendix A – SORR Map Appendix

B - Inspection Field Notes Appendix

Appendix A -South Orient Rail Line Map



Appendix B – Field Notes

March 3 - 5, 2014 South Orient Inspection Field Notes

MP 0 – 21

- 1) 90# jointed rail, manufactured 1917 – 1981
- 3) 11,127 grade 5 ties installed by TXPF, 2003 - 2008
- 4) 18,047 ties installed by TxDOT, 2009 – 2012
- 5) Replaced worn rail with CWR in curves 4, 5, 6 by TxDOT 2009 - 2012
- 6) 17 grade crossings reconstructed (TxDOT)
- 7) 364 ties replaced on open deck bridges by TxDOT, 2009 - 2012
- 8) Misc. bridge repairs by TXDOT, 2009 - 2012
- 9) Upgraded roadway-rail crossings to 25 mph (TxDOT)

MP 21 – 36

- 1) 85# jointed rail, manufactured 1918 – 1953
- 2) 373 ties installed by TXPF, 2003 - 2008
- 3) 18,293 ties installed by TxDOT, 2009 – 2012
- 4) Replaced worn rail with CWR in curves 24, 36, 27, 28, 39, 40 (TxDOT)
- 5) 10 grade crossings reconstructed (TxDOT)
- 6) 672 ties replaced on open deck bridges by TxDOT, 2009 - 2012
- 7) Misc. bridge repairs by TXDOT, 2009 - 2012
- 8) Replaced bridge at 22.4 with culverts (TxDOT)

MP 36 – 46

- 1) 70# - 112# mixed weights. Jointed rail manufactured 1918 – 1966
- 2) 2,970 ties installed by TXPF, 2003 - 2008
- 3) 8,179 ties installed by TxDOT, 2009 – 2012
- 4) Replaced worn rail with CWR in curve 41
- 5) 19 grade crossings reconstructed (TxDOT)
- 6) 167 ties replaced on open deck bridges by TxDOT, 2009 - 2012
- 7) Misc. bridge repairs by TXDOT, 2009 - 2012
- 8) Replaced timber box culverts at MP 45.5 with corrugated metal pipes
- 9) Upgraded roadway-rail crossings to 25 mph (TxDOT)

MP 46 - 54

- 1) 90# - 112# jointed rail, manufactured 1941 - 1959
- 2) 3,863 ties installed by TXPF, 2003 - 2008
- 3) 4,568 ties installed by TxDOT, 2009 – 2012
- 4) 10 grade crossings reconstructed (TxDOT)
- 5) 20 ties replaced on an open deck bridge at 49.2 (TxDOT)
- 6) Misc. bridge repairs by TXDOT, 2009 - 2012
- 7) Upgraded roadway-rail crossings to 25 mph (TxDOT)

MP 54 – 74

- 1) 85# jointed rail, manufactured 1917
- 2) 15,583 ties installed by TxDOT, 2009 – 2012
- 3) 36 grade crossings reconstructed (TxDOT)
- 4) 170 ties replaced on open deck bridges (TxDOT)

Appendix B – Field Notes

- 5) Misc. bridge repairs (TxDOT)
- 6) Upgraded roadway-rail crossing to 25 mph at MP 54.2 (TxDOT)

MP 712 – 721

- 1) 70# - 131# mixed wts. Jointed rail manufactured 1915 – 1966
- 2) 8,324 ties installed by TxDOT, 2010 - 2012
- 3) 24 grade crossings reconstructed with new track and concrete surfaces (TxDOT)
- 4) MP 715.8, location of SESCO superfund sight adjacent to ROW
- 5) 589 ties replaced on open bridge at 716.6 (TxDOT)
- 6) Replaced fire damaged bridge at 715.1 with concrete structure (TxDOT)
- 7) Misc. bridge repairs (TxDOT)

San Angelo Yard

- 1) 7,685 ties installed by TxDOT, 2010 – 2011 rehab
- 2) 4,548 tons of yard ballast installed (TxDOT)
- 3) Repairs to 18 yard switches (TxDOT)
- 4) 30 switch stands replaced with ergonomic design (TXPF)
- 5) Wye curve track replaced with 136# rail (panels - TXPF)
- 6) EOG secondary crude oil loading facility in yard
- 7) Badger Mining sand unloading facility in yard
- 8) Musket crude oil loading facility in yard

MP 721 – 738.1

- 1) 112# jointed rail manufactured 1961
- 2) 88 ties installed by TXPF, 2004
- 3) TxDOT rehab projects ended at west Knickerbocker Rd crossing, MP 721.52
- 4) Remaining ties in poor to fair condition
- 5) Class 2 track designation begins MP 738

MP 738.1 – 779

- 1) 115# CWR manufactured 1981
- 2) Ties in poor to fair condition (limited # of good)
- 3) Class 2 track designated

MP 779 – 815

- 1) 131# CWR manufactured in 1984 (132# CWR 811 to 815)
- 2) 4,471 ties installed by TXPF, 2004 (MP 802 thru 855.6)
- 3) Remaining ties in poor to fair condition (limited # of good)
- 4) Class 2 track designated

MP 815 – 846

- 1) 112# CWR manufactured 1970
- 2) Ties in fair to good condition
- 3) Most vehicular crossings in fair to bad condition
- 4) Class 2 track designated

Appendix B – Field Notes

MP 846 – 849.7

- 1) 112# jointed rail manufactured 1970
- 2) Ties in fair to good condition
- 3) Class 2 track designated

MP 849.7 – 869.7

- 1) 119# welded rail manufactured 1985
- 2) Ties in fair to good condition
- 3) Class 2 track designated

MP 869.7 – 945

- 1) 70# jointed rail manufactured 1912
- 2) 20,007 ties installed by TXPF, 2004
- 3) 9,615 ties installed by TXPF, early 2013
- 4) 390' rail relay by TXPF, early 2013
- 5) Remaining ties in fair to good condition

MP 957 – 968

- 1) 90# jointed rail manufactured 1929
- 2) 3,362 ties installed by TXPF, 2003
- 3) Ties in poor to fair condition

MP 968 – 986

- 1) 90# jointed rail manufactured 1929
- 2) 11,979 ties installed – TxDOT 2006
- 3) Remaining ties in fair to good condition
- 4) MP 985.9 channel north side of bridge continues deterioration

MP 986 – 1029.1

- 1) 90# jointed rail manufactured 1929
- 2) 3,125 ties installed by TXPF, 2003
- 3) 22,447 ties installed – TxDOT 2006
- 4) Remaining ties in fair to good condition
- 5) All rock cuts in need of drainage improvements – silting in
- 6) Excepted track designation
- 7) Washouts at MP 1007.2; 1005.6
- 8) International bridge burned down south of levee, Feb 2008; north of levee, March 2009
- 9) Presidio Depot burned down February 23, 2011