

November 19, 2012

MEMORANDUM

To: Yellowstone River Conservation District Council (YRCDC)

From: Jim Robinson, Montana Department of Natural Resources and Conservation/YRCDC  
Technical Advisory Committee. (406) 444-4247; [jrobinson@mt.gov](mailto:jrobinson@mt.gov)

Re: Addendum to *Yellowstone River Pipeline Risk Assessment and Floodplain Reclamation Planning Project Report*

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This memorandum with attached Table 1: *Revised Yellowstone River Pipeline Crossing Risk Assessment Site Summary* serves as an addendum to the above-referenced report produced for the YRCDC by Atkins North America of Bozeman, Montana. The intent of this memo is to clarify and revise the risk assessment ratings presented in the original report based on supplemental information provided by pipeline operators subsequent to final delivery of the report.

As stated in the executive summary of the Atkins report, the goals of the project include: 1) develop a pipeline crossing database, 2) determine the risk posed to gas and/or hazardous material (petroleum) pipelines passing within the Yellowstone River Channel Migration Zone (CMZ); and 3) assess the potential for floodplain mitigation to reduce risk of pipeline failure. The results of the assessment are summarized in Table 3 (see page 50) of Atkins' report to YRCDC.

The results of the investigation found that there are 39 petroleum pipelines that intersect the Yellowstone River channel migration zone (CMZ). The pipelines were grouped into 21 sites based on proximity and geomorphic environment. Based on Atkins' review of the available information, each of the 21 sites were assigned a pipeline risk value of "low", "moderate", or "high" based on the potential for fluvial geomorphic processes to affect a given pipeline.

The assessment process involved analyzing the pipeline data contained in the National Pipeline Mapping System (NPMS) geodatabase maintained by the U.S. Department of Transportation Pipeline and Hazardous Material Safety Administration (PHMSA) in the context of data and information developed by the YRCDC and the U.S. Army Corps of Engineers for purposes of the Yellowstone River Cumulative Effects Assessment. The risk assessment ratings were based on information available from the NPMS to the YRCDC as a unit of local government at the time the pipeline risk assessment project was undertaken.

However, a number of factors constrained the initial analysis which this analysis addresses. Despite the fact that different types of materials conveyed within the pipelines pose different degrees of threat to the environment, the scope of work for the initial assessment did not include factoring material type into the risk classification. And while release of natural or liquid petroleum gas (LPG) poses a significant hazard, it does not represent the same level of threat to the Yellowstone River ecosystem that crude oil or refined petroleum product does. Also, in discussing the results of the initial analysis with PHMSA representatives and pipeline operators it was learned that in many cases the complete set of circumstances surrounding a given pipeline was not reflected in the NPMS geodatabase. For example, many of the pipelines have been idled; others have been replaced using Horizontal Directional Drilling (HDD) techniques. Therefore, this memorandum and accompanying table serves to update and supplement the results of the initial pipeline risk assessment.

Table 1: Revised Yellowstone River Pipeline Crossing Risk Assessment Site Summary

(Revised and Updated November 19, 2012)

River Mile	Site Number	Location	Type of Crossing	Commodity	System/Sub System Name	Owner	Geomorphic Risk Potential from Atkins' Report	Comments from Operators Regarding Planned or Existing Mitigation Measures	Reassigned Environmental Risk Potential*
<b>PARK COUNTY</b>									
498	21	Downstream of Livingston (Rustad Ln)	Parallel, Crossing	Natural Gas	Dry Creek-Bozeman Line	NW Energy LLC	Moderate		Low
<b>SWEET GRASS COUNTY</b>									
460	20	Big Timber	Tributary Crossing (Big Timber Cr) TRENCHED	Product	Yellowstone (YP01) Billings Pump STA/Missoula	Conoco Phillips / Phillips 66	Moderate	Continue to monitor under P66's comprehensive monitoring program. Looking to perform a directional drill, new trenched crossing, or lower in 2014 depending on ongoing monitoring results.	Moderate
438	19	Upstream of Reed Pt	Crossing	Natural Gas	Big Coulee-Reed Point Line	NW Energy	Low		Low
<b>STILLWATER COUNTY</b>									
417	18	Near Columbus downstream of Stillwater R	Crossing	Natural Gas	Lake Basin-Absarokee Line	NW Energy Lake Basin-Absarokee Line	Moderate		Low
397	17	Downstream of Columbus	Parallel, Crossing HDD	Crude Oil	Express Pipeline	Kinder Morgan Pipelines	Moderate	HDD during original construction.	Low
<b>YELLOWSTONE COUNTY</b>									
385	16D	Laurel	Crossing IDLED UNDER NITROGEN	Crude Oil	Glacier Crude-Byron 8-inch, Frannie Sta/ Billings Pump Sta	Conoco Phillips / Phillips 66	High	IDLED UNDER NITROGEN - Line continues to be monitored every two weeks by aerial patrol regardless of idle status. Additionally, P66 will monitor all idled/abandoned crossings as needed for exposure post spring/summer run off.	No Risk
385	16C	Laurel	Crossing HDD	Natural Gas	Lovell Elk Basin Billings System, Worland Sub-System	Williston Basin Interstate Pipeline Co.	High	Pipeline crossing was replaced with HDD	Low
385	16B	Laurel	Crossing HDD	Natural Gas	Lovell Elk Basin Billings System, Worland Sub-System	Williston Basin Interstate Pipeline Co.	High	Pipeline crossing was replaced with HDD	Low
385	16A	Laurel	Crossing HDD	Crude Oil	Montana Crude, Edgar-Laurel Terminal 12-inch MT-14	ExxonMobil Pipeline Co.	High	HDD Silver Tip Pipeline crossing has been replaced.	Low
382	15B	Downstream of Laurel	Crossing	Natural Gas	NW Energy GT&S, CENEX Tap Line	NW Energy LLC	Moderate		Low
382	15A	Downstream of Laurel	Crossing IDLED UNDER NITROGEN	Crude Oil	Glacier Crude-Byron 8 in, Frannie Sta/ Billings Pump Sta	Conoco Phillips / Phillips 66	Moderate	IDLED UNDER NITROGEN - Line continues to be monitored every two weeks by aerial patrol regardless of idle status. Additionally, P66 will monitor all idled/abandoned crossings as needed for exposure post spring/summer run off.	No Risk
381.5	14B	Downstream of Laurel	Parallel	Natural Gas	NW Energy GT&S, CENEX Tap Line	NW Energy LLC	High		Low
381.5	14A	Downstream of Laurel	Parallel IDLED UNDER NITROGEN	Crude Oil	Glacier Crude-Byron 8 in, Frannie Sta/ Billings Pump Sta	Conoco Phillips / Phillips 66	High	IDLED UNDER NITROGEN - Line continues to be monitored every two weeks by aerial patrol regardless of idle status. Additionally, P66 will monitor all idled/abandoned crossings as needed for exposure post spring/summer run off.	No Risk
380	13	Downstream of Laurel	Parallel IDLED UNDER NITROGEN	Crude Oil	Glacier Crude-Byron 8 in, Frannie Sta /Billings Pump Sta	Conoco Phillips / Phillips 66	Moderate	IDLED UNDER NITROGEN - Line continues to be monitored every two weeks by aerial patrol regardless of idle status. Additionally, P66 will monitor all idled/abandoned crossings as needed for exposure post spring/summer run off.	No Risk
371	12D	South Billings Blvd.	Parallel	Natural Gas	Lovell Elk Basin Billings System, Worland Sub-System	Williston Basin Interstate Pipeline Co	High		Low
371	12C	South Billings Blvd.	Crossing IDLED UNDER NITROGEN	Crude Oil	Glacier Crude-Byron 8in, Frannie Sta/ Billings Pump Sta	Conoco Phillips / Phillips 66	High	IDLED UNDER NITROGEN - Line continues to be monitored every two weeks by aerial patrol regardless of idle status. Additionally, P66 will monitor all idled/abandoned crossings as needed for exposure post spring/summer run off.	No Risk
371	12B	South Billings Blvd.	Crossing	Natural Gas	Warren-Billings Steam Plant Line	NW Energy LLC	High		Low
371	12A	South Billings Blvd.	Crossing	Natural Gas	Blue Creek-Billings Steam Plant Line	NW Energy LLC	High		Low
368	11	Billings	Parallel	Natural Gas	Worland Sub-System	Williston Basin Interstate Pipeline	Low		Low
367	10B	Billings	Crossing HDD	Crude Oil	Beartooth Pipeline	Plains	Moderate	HDD	Low
367	10A	Billings	Crossing TRENCHED	Product	Seminole (SM01) 8-inch Products, Billings Pump Sta/Sinclair Pump Sta	Conoco Phillips / Phillips 66	Moderate	This line has 4-10 feet of cover. The south channel installed in bed rock. Phillips 66 has studied this crossing extensively and concluded that it is fit for service. The crossing, along with all of P66 major stream crossings will continue to be monitored and maintained under P66 Pipeline's comprehensive monitoring program.	Low

**Table 1: Revised Yellowstone River Pipeline Crossing Risk Assessment Site Summary**

(Revised and Updated November 15, 2012)

River Mile	Site Number	Location	Type of Crossing	Commodity	System/Sub System Name	Owner	Geomorphic Risk Potential from Atkins' Report	Comments from Operators Regarding Planned or Existing Mitigation Measures	Reassigned Environmental Risk Potential*
365	9G	Billings	Crossing TRENCHED	Crude Oil	Glacier (GL11) 10-inch CrudeConoco Refinery/ExxonMobil Refinery	Conoco Phillips / Phillips 66	Low	This crossing is scheduled for HDD in 2013. Right now it has at least 2 feet of cover on the line. This crossing will continue to be monitored under P66's comprehensive monitoring program.	Low
365	9F	Billings	Parallel	Product	CENEX Pipeline System, Laurel to Billings 8-inch Product	CENEX Pipeline LLC	Low	Operator monitors pipeline right-of-way 26 times per year minimum.	Low
365	9E	Billings	Crossing TRENCHED	Product	Yellowstone (YP12) ExxonMobil Refinery 10-inch Suction	Conoco-Phillips (upstream I-90 / Phillips 66	Low	This crossing is in a very stable bundled crossing with several other companies. Minimum of 2 feet of cover with the majority having 10 feet of cover. We have completed several studies on our lines that consisted of technology including ground penetrating radar to validate depth of cover. This crossing will continue to be monitored under P66's comprehensive monitoring program. P66 has no concerns about the crossing at this time. The crossing will be replaced via HDD in out years should conditions warrant.	Low
365	9D	Billings	Crossing	Natural Gas	Billings Exxon Line	Montana - Dakota Utilities Co.	Low		Low
365	9C	Billings	Crossing TRENCHED	Product	Seminole (SM12) ExxonMobil Refinery 8-inch suction	Conoco Phillips / Phillips 66	Low	This crossing is in a very stable bundled crossing with several other companies. Minimum of 2 feet of cover with the majority having 10 feet of cover. We have completed several studies on our lines, including ground penetrating radar, to validate depth of cover. This crossing will continue to be monitored under P66's comprehensive monitoring program. P66 has no concerns about the crossing at this time. The crossing will be replaced via HDD in out years should conditions warrant.	Low
365	9B	Billings	Crossing TRENCHED	Crude Oil	Montana Crude Meter Station 12.75-inch - Billings Refinery	ExxonMobil Pipeline Co.	Low	This crossing is in a very stable bundled crossing with several other companies. Minimum of 2 feet of cover with the majority having 10 feet of cover. We have completed several studies on our lines, including ground penetrating radar, to validate depth of cover. This crossing will continue to be monitored under P66's comprehensive monitoring program. P66 has no concerns about the crossing at this time. The crossing will be replaced via HDD in out years should conditions warrant.	Low
365	9A	Billings	Crossing TRENCHED	Product	CENEX Pipeline System Laurel to Billings 8-inch	CENEX Pipeline LLC	Low	Installed in 1991. Minimum depth of cover is 6 feet.	Low
<b>PRAIRIE COUNTY</b>									
126	8B	Fallon	Crossing ABANDONED	Product	8-inch Fallon to Glendive	CENEX Pipeline LLC	Low	Abandoned and purged per Part 195.402(c)(10).	No Risk
126	8A	Fallon	Crossing HDD	Product	CENEX Pipeline System MP 191 to Glendive 101N	CENEX Pipeline LLC	Low	HDD Installed in 1999.	Low
<b>DAWSON COUNTY</b>									
104	7	Glendive	Parallel	Crude Oil	Bridger Pipeline	Operated by Poplar Pipeline and owned by True Oil	Low	Operator monitors pipeline right-of-way 26 times per year minimum.	Low
100	6	Glendive	Crossing TRENCHED	Crude Oil	Bridger Pipeline	Operated by Poplar Pipeline and owned by True Oil	Moderate	Depth of cover is 5 feet. Monitoring system is in place	Low
94	5	Glendive (Black Bridge)	Crossing	Natural Gas	West Mon-Dak Subsystem	Williston Basin Interstate Pipeline	High		Low
77	4	Downstream of Glendive	Parallel	Natural Gas	West Mon-Dak Subsystem	Williston Basin Interstate Pipeline	Low		Low
<b>RICHLAND COUNTY</b>									
32	3A	Sidney	Crossing	LPG	Williston Basin/River View	Bear Paw Energy LLC	Moderate	Owned by ONEOAK Rockies Midstream. LPG pipeline Installed in 1997 but do not know type of crossing.	Low
31	3B	Sidney	Crossing	Natural Gas	Cabin Creek Williston System West Mon-Dak Subsystem	Williston Basin Interstate Pipeline	Moderate		Low
31	3B	Sidney	Crossing Span	Product	Glendive to Minot 8-inch	CENEX Pipeline LLC	Moderate	816 feet span installed on highway bridge in 1994. Continued monitoring program in place.	Low
27	2	Downstream of Sidney	Crossing HDD	Crude Oil	8-inch Putnam to Sidney	Tesoro - High Plains Pipeline Co	High	HDD - Pipeline is rural gathering.	Low
<b>McKENZIE COUNTY, ND</b>									
9	1	Fairview	Crossing	Natural Gas	West Mon-Dak Subsystem	Williston Basin Interstate Pipeline	Low		Low

\* Reassigned risk potential based on type of product and mitigation information from operators.