



Oil Industry Segment Update

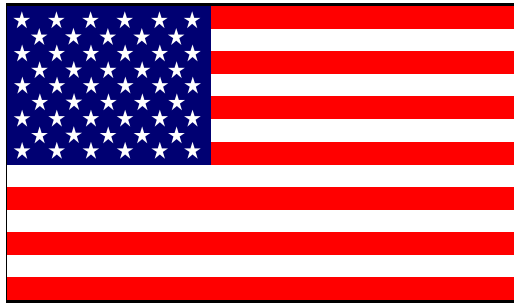
Lee K. Johnson

Rail Energy Transportation Advisory Committee
Surface Transportation Board

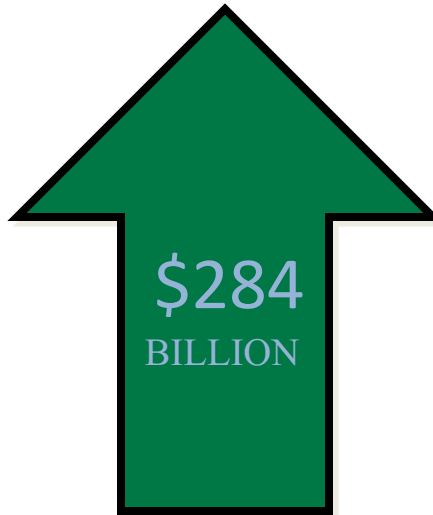
October 2, 2014

Recent Growth

2.1 million jobs are supported by the unconventional development of crude oil fields, and in 2012 the US GDP was increased by \$284 billion

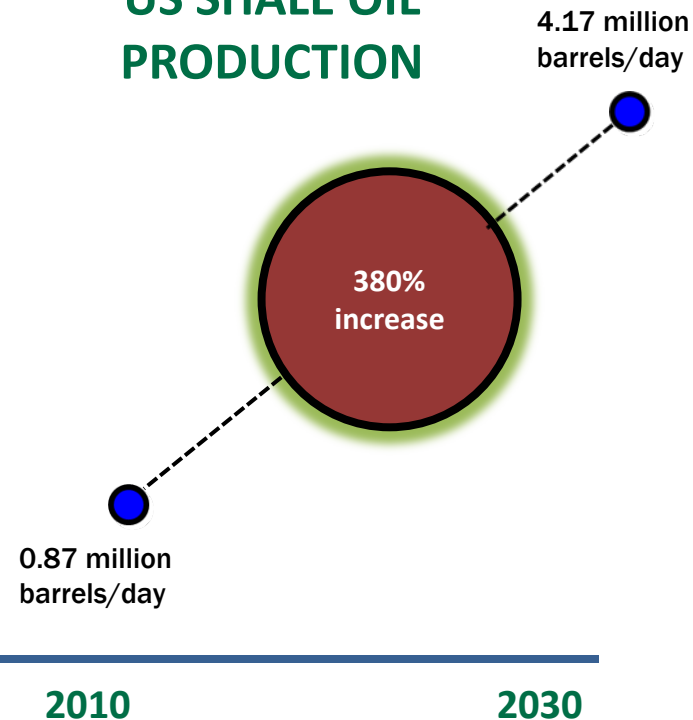


**2.1 MILLION
JOBS**



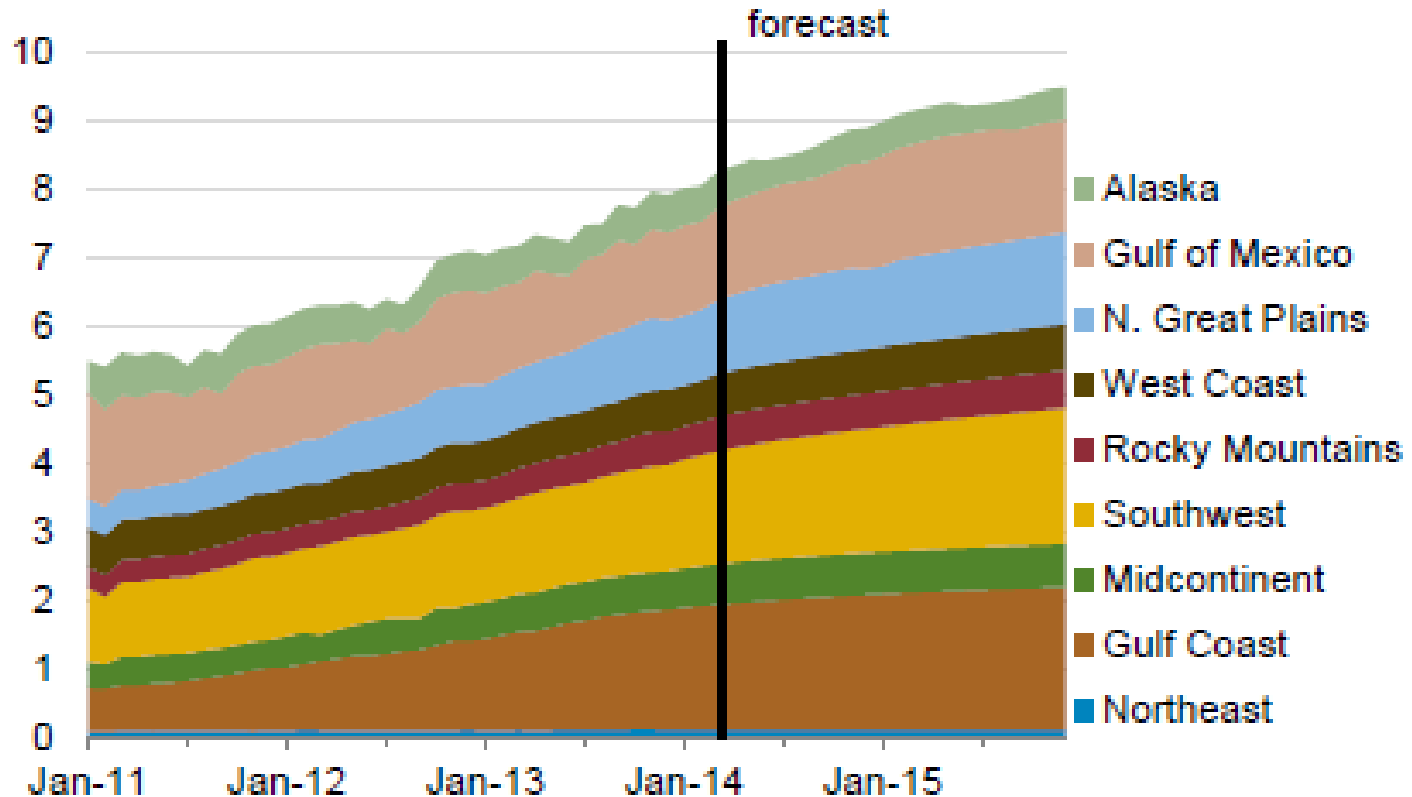
GDP

US SHALE OIL PRODUCTION



U.S. Crude Oil Production Forecasts

million barrels per day

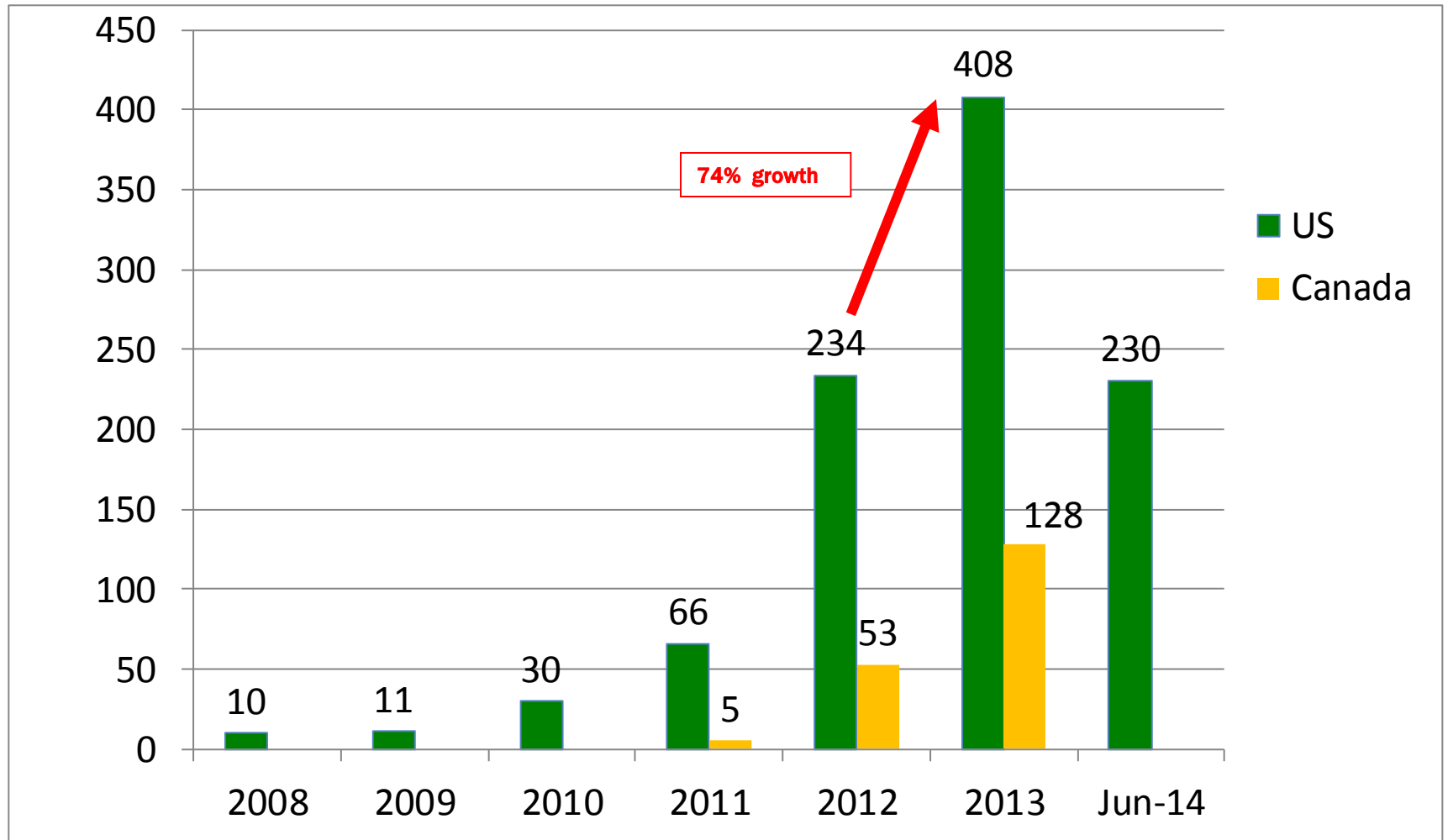


Source: EIA, *DrillingInfo*.

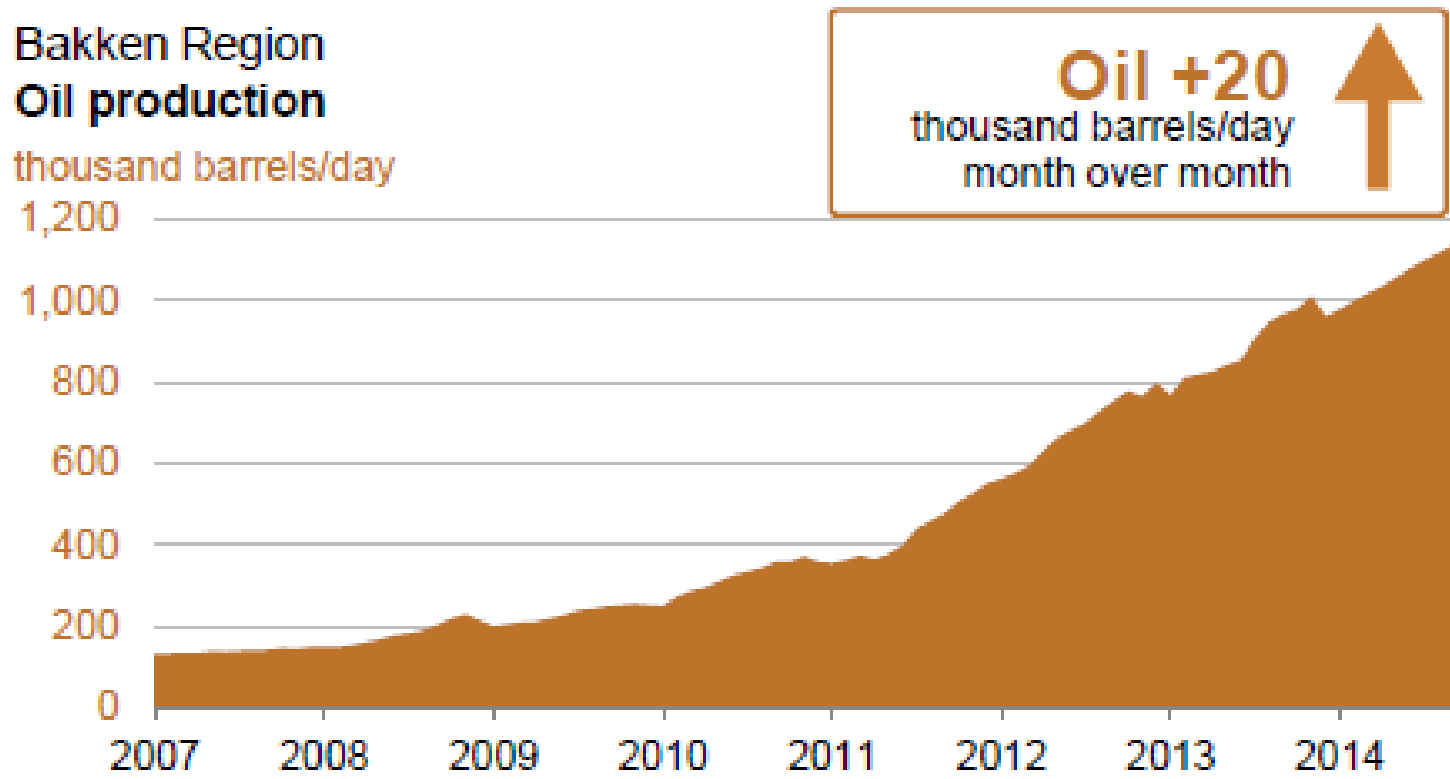
Source: EIA, U.S. Crude Oil Production Forecast – Analysis of Crude Types, May 29, 2014

Growth of Crude by Rail Carloads

Originated Carloads on Class I Railroads (1,000's)

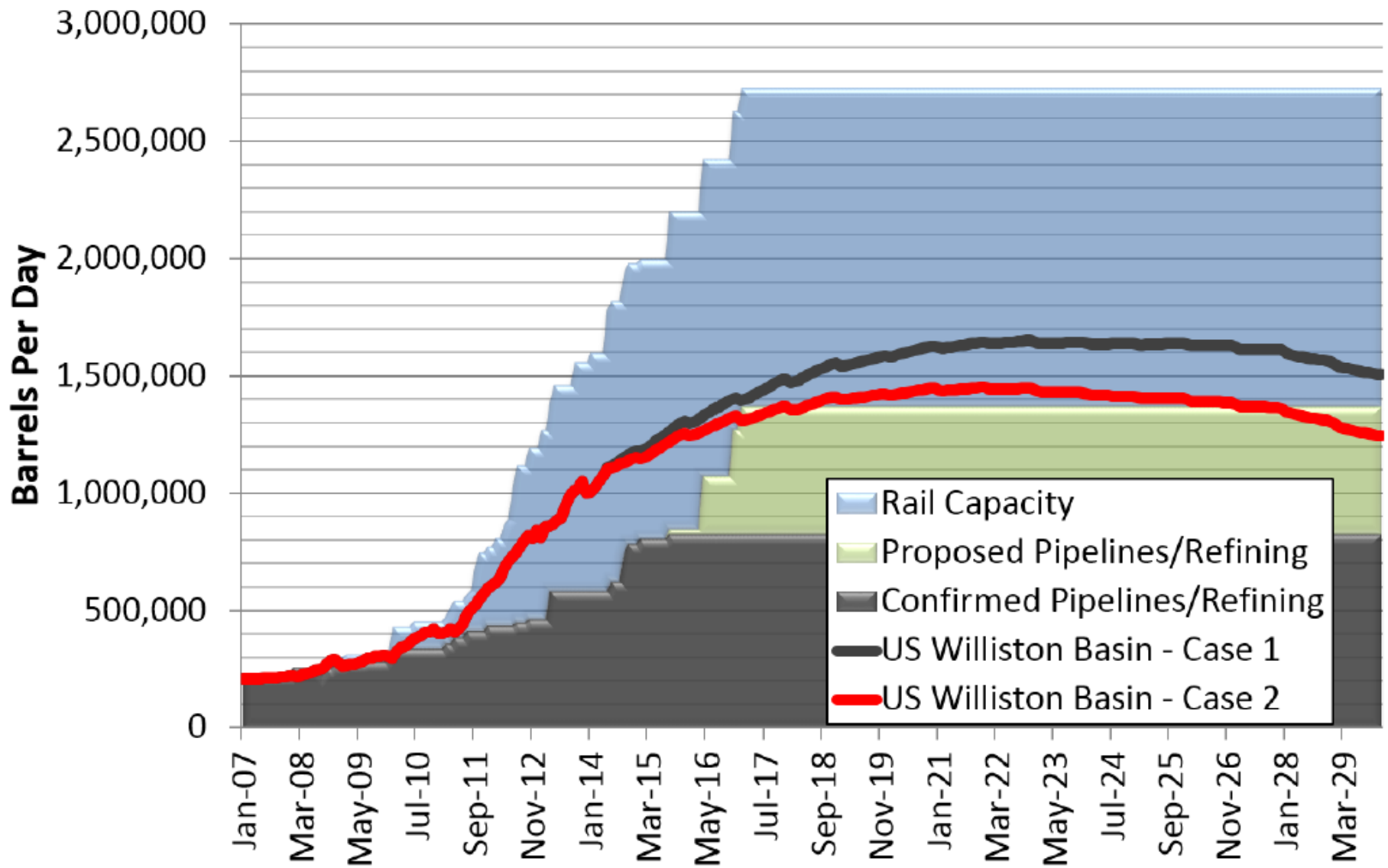


Bakken Region Oil Production



Source: EIA, Bakken Region Drilling Productivity Report, August 2014

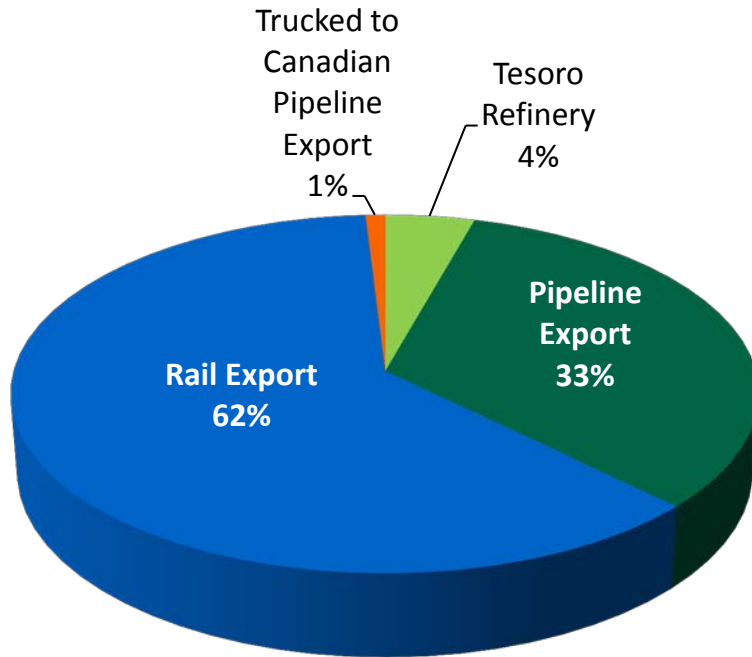
Williston Basin Oil Production & Export Capacity, BOPD



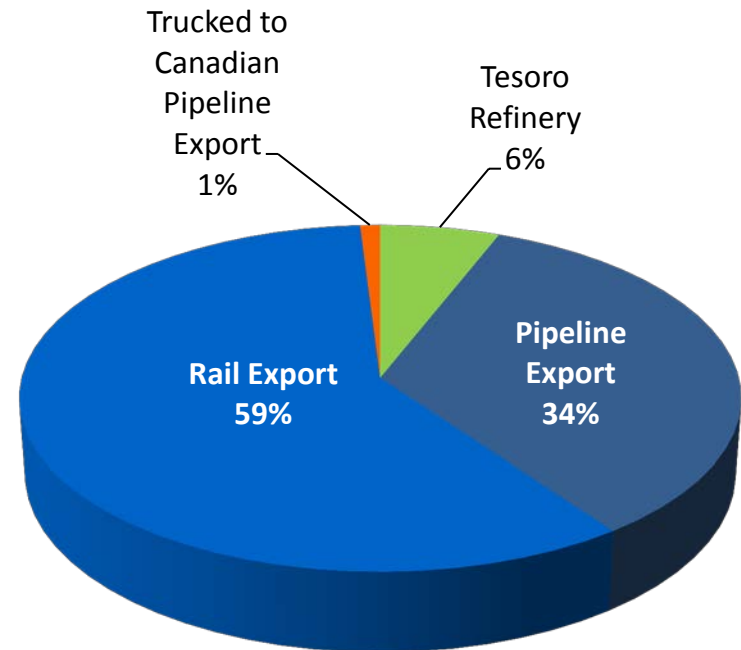
Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.

Williston Basin Crude Oil Transportation

2013

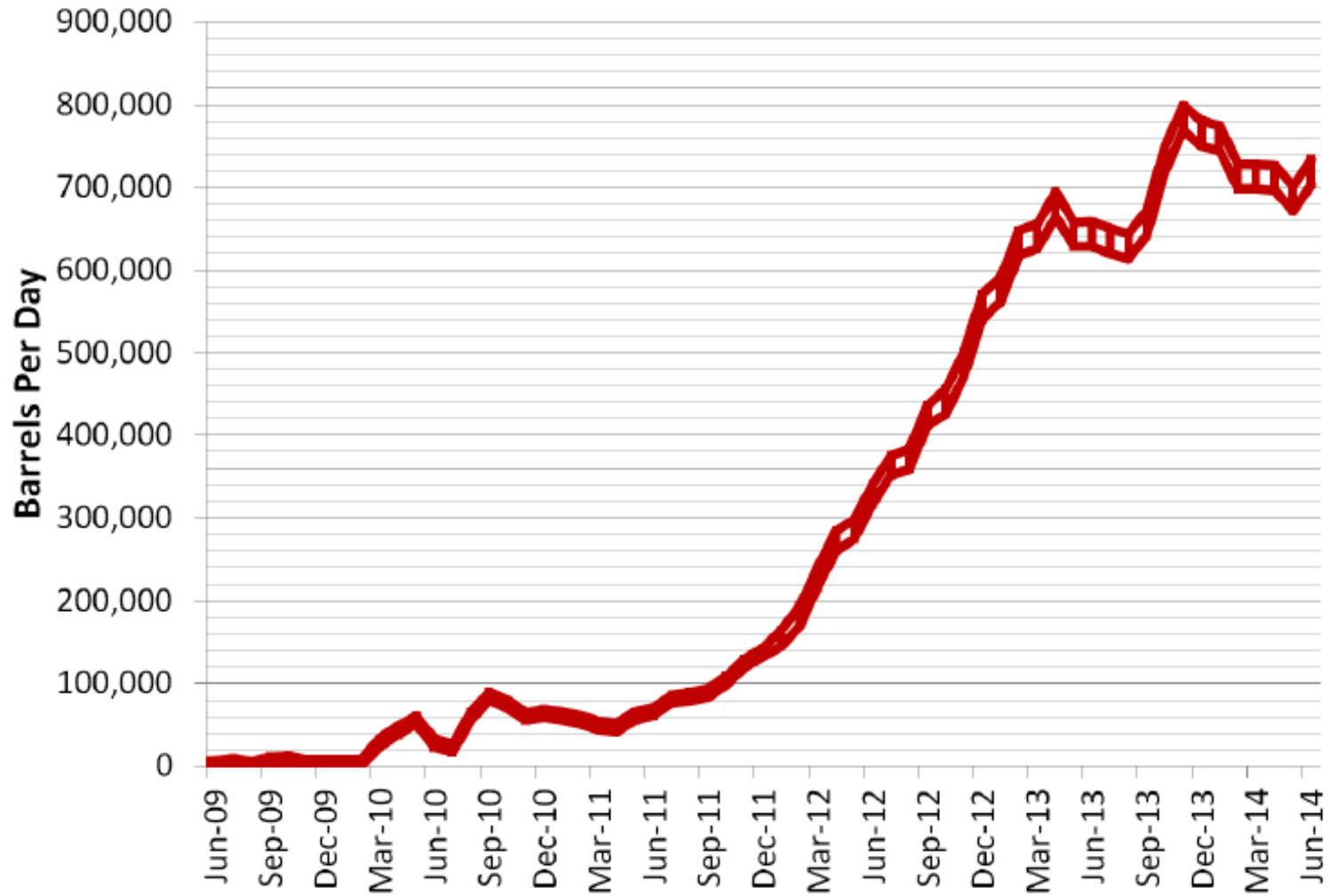


2014



Source: North Dakota Pipeline Authority, January 2014 Update

Estimated North Dakota Rail Export Volumes, June 2014



Source: North Dakota Pipeline Authority, June 2014, Update,

API Standards Development Process

- API has published over 600 standards covering all industry segments
- API Standards are:
 - Core of Institute’s technical authority
 - Represent industry’s best practices and are used in worldwide operations
 - Facilitate reasonable regulations
 - Voluntary
- API is accredited by the American National Standards Institute (ANSI) as a standards developing organization (SDO)
- API’s procedures explain standardization development process consistent with ANSI’s “Essential Requirements” of Openness, Balance, Consensus, and Due Process
 - Openness: Participation in API standards activities is open to all parties (persons and organizations) that have a direct and material interest in the subject of a standard.
 - Balance: API seeks broad input to its standardization activities including the participation of all parties representing interest categories appropriate to the nature of the standard, and allows for open attendance at standards meetings. API strives for balanced representation.
 - Consensus: Defined as substantial agreement, not necessarily unanimity.
 - Due process: Consideration shall be given to the written views and objections of all participants and the right to appeal shall be made available to adversely affected parties.

ANSI/API RP 3000

- API's Recommended Practice for Classifying and Loading of Crude Oil into Rail Tank Cars, known as RP 3000, provides guidance on many important aspects of preparing crude oil for shipment by rail, including:
 - Criteria for determining the frequency of sampling and testing of petroleum crude oil for transport classification. It discusses how to establish a sampling and testing program, and provides an example of such a program.
 - Guidance on Packing Group (PG) assignment, including the potential effect of heel, and mixing of crude oils of differing PG's. The document provides guidance on initial testing and an ongoing sampling and testing for assignment of PG.

ANSI/API RP 3000 continued

- RP 3000 provides guidance on determining the loading target quantity (LTQ) of crude oil transported by rail tank car. This includes crude oil temperature and density determination, identification of sampling points based on loading scenarios, and measurement equipment and processes.
- This document applies only to petroleum crude oil classified as Hazard Class 3—Flammable Liquid under the U.S. *Code of Federal Regulations (CFR)* at the time of publication.
- Guidance on the documentation of measurement results and record retention is also provided.

Standard Development Results

- The program is accredited by the American National Standards Institute (ANSI), the same body that accredits programs at several national laboratories.
- Given the importance of this new standard, API will initially make it available at no charge to interested parties via www.api.org/rail.

Crude-by-Rail Growth Issues

- Railroad capacity
 - Carriers investing heavily to increase capacity
- Railroad service
 - Still recovering from winter 2013/2014 challenges
 - Cycle times peaked April/May 2014
 - Nearly 25% cycle time improvement from April to September
 - September 2014 cycle times more than 35% longer than September 2013
- Uncertainty regarding ongoing tank car regulatory activity
 - DOT/PHMSA received NPRM comments September 30, 2014
 - DOT targeting a final rule by year's end
 - Specifications and timelines are critical factors to improving safety with minimal negative impact on capacity
 - Crude-by-rail will become more costly
- Adequate tank car fleet
 - Capacity to manufacture new tank cars
 - Capacity to requalify and retrofit

Conclusions

- Unconventional production of crude oil is a rapidly growing economic & energy independence contributor
- Rail transportation is an important delivery mode
- All stakeholders are committed to the safe and compliant transport of crude oil by rail
- Oil and rail industries have collaborated in response to Secretary Foxx's "Call to Action"
- ANSI/API Recommended Practice 3000 provides guidance to the marketplace enhancing the safe and compliant rail shipment of crude oil