



Tesoro Black Slough Pipeline Spill Site

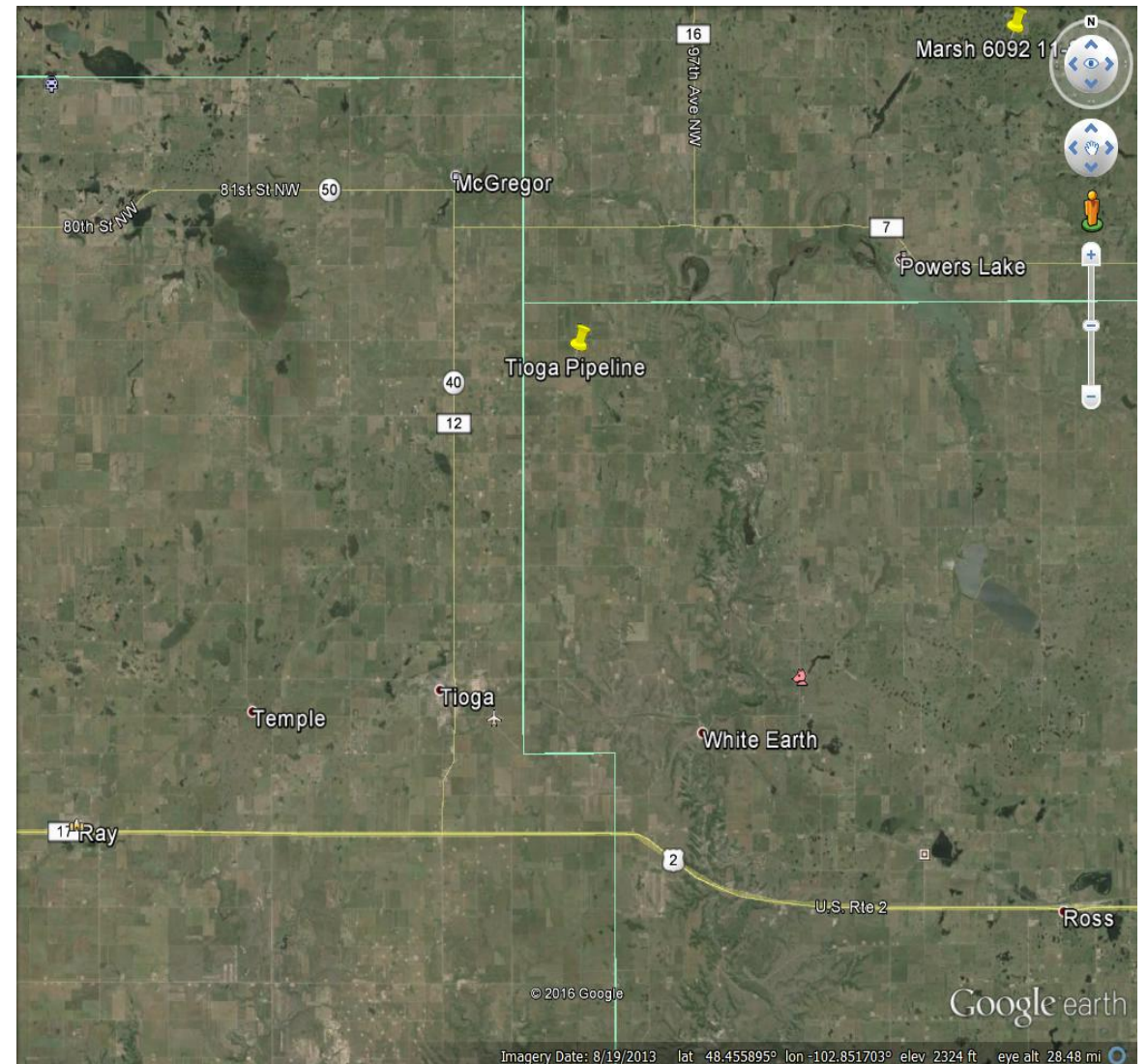
Mountrail County, North Dakota



NORTH DAKOTA
DEPARTMENT *of* HEALTH

TIOGA Pipeline Spill

- Pipeline release of an estimated 21,000 bbls of Bakken crude oil discovered by landowner (September 2013)
- Source of release: probable lightning strike that damaged the near surface pipeline
- Release covers about 14 acres of Jensen Wheat Field
- Approximately 35 acres are tied up in remediation.
- This is (one of) the largest oil spills in continental U.S. history





Project History

- September 29, 2013 - Steve Jensen discovers Bakken Crude Oil release in his wheat field during harvest and contacts Tesoro, who shut pipeline down soon thereafter
- September 30, 2013 – Incident is reported to the NDDoH. Initially reported as 750 bbls of oil. Initial attempt was made to burn the site.
- October 1, 2013 - Tesoro Contingency Planning Manager and Response Team plus Environmental Consultant on-site
- Spill volume was updated to 20,600 bbls of oil.
- October 2013/March 2014 - Emergency Response/Pipeline Relocation, initial investigation and slurry wall
- October 23, 2013 – Encountered Hess site
- March 2014 to Present – Continued Investigation and Cleanup (Excavation and Thermal Desorption)



Project History

- September 18, 2014 – Tesoro requests the TPH cleanup goal be raised from 100 ppm to 500 ppm based on fate and transport modeling. Also on that day I am assigned as the NDDoH lead for the project (Happy Birthday to me).
- November 3, 2014 – Tesoro is requested to continue excavating to the 100 ppm standard, but is allowed to thermally treat material to a maximum of 500 ppm (goal of 250 ppm).
- December 2014 – Tesoro receives air permit to utilize a second TDU. It is discovered that the Hess gas line does not have sufficient pressure to operate both TDUs.
- May to October, 2015 – Tesoro discovers and remediates “Western Stringer”.
- December 3, 2015 – Tesoro requests raising the TPH cleanup level to 1,500 ppm.
- January 12, 2016 - The NDDoH denies Tesoro’s request.
- February 22, 2016 (6:30 am) – 455,736 tons processed through the TDU.
- Spring 2016 – Install 60 ton TDU operating on LNG.

Soil Treatment After Excavation – Thermal Desorption Unit (TDU)





Looking Southwest

Looking East



Looking Northwest

Tioga-Madison Unit P-146

Former Hess Well

- Madison Formation
- Spud Date 1953
- Former Reserve Pit
- Encountered While Installing Slurry Wall
- Delineated by Hess in 2015
- To be Remediated by NER
- Adjustments to TDU



Site of Tioga Madison Unit P-146

Moving Forward

- As of Jan. 1, 2016
421,824 Tons
Processed Through
TDU
- Backfill the “Gun
Handle”
- Install 60-Ton TDU
at “Gun Handle”
Location
- NDSU Test Plots
- Cover Crop by
2018?



Considerations

- **High amount of national attention**
 - National and Local Media (NY Times, AP, Wall Street Journal)
- **Limited infrastructure available** – hinders cleanup choices
- **North Dakota Winters** - sub-zero temps are hard on people and equipment.
- **Local values:**
 - Farming/agricultural area
 - Very high value put on land ownership
 - Limited options for remediation (purchase of the site by Tesoro was “off the table”)
 - Return to agricultural use is key



Photo Credit: NY Times, November 2014

Involvement

- **Landowners - Steve and Patty Jensen**

- Final authority on cleanup plan
- Site located on 35 acres of 160 acre parcel of larger property

- **Numerous stakeholders**

- Tesoro
- Hess
- State Government
- Contractors

- **Neighbors/Public**

- Very involved community
- Generally accepting of oil companies

- **North Dakota State University**

- Agricultural/soil experts
- Helped Tesoro understand local values
- NDSU is key to returning site to agricultural use
- On-site field research will not only help the landowners, but also the State, Tesoro & other companies in the future



Key Takeaways

- Use your resources – ***field personnel are key*** to maintaining positive landowner and stakeholder relationships
 - They are your main eyes and ears
 - Integral for Landowner satisfaction
- ***Understand and integrate local values*** into all work – understand that the values of others may differ significantly from your own, or from other projects
- ***Communicate early and often*** to all Stakeholders
- **Be the interpreter** – highly technical concepts need non-technical explanations and presentations
- **Visual presentation** of key concepts is essential to understanding
- ***Good decisions require good data, constant collaboration and strong trust.*** Don't short change the process by “saving money” up front (“go slow to go fast”).
- ***Try to learn something from every incident***

Special Thanks

- Steve and Patty Jensen - Landowners
- Jeff Baker – Tesoro Logistics
- Tom DeSutter – NDSU
- Warren Nelson – Nelson Environmental Remediation
- Justin Kallberg – QualiTech Environmental
- Shaun Daly – QualiTech Environmental

Questions?

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