



South Carolina Department of Health and Environmental Control

---

# **Plantation Pipe Line Lewis Drive Release Belton, SC**

January 31, 2017

---

Mihir Mehta  
Underground Storage Tank Management Division Director  
Bureau of Land and Waste Management

# **Today's Presentation**

**General information**

**Actions that have been completed**

**Future cleanup plans and the path forward**

# **DHEC's Role in the Cleanup Process**

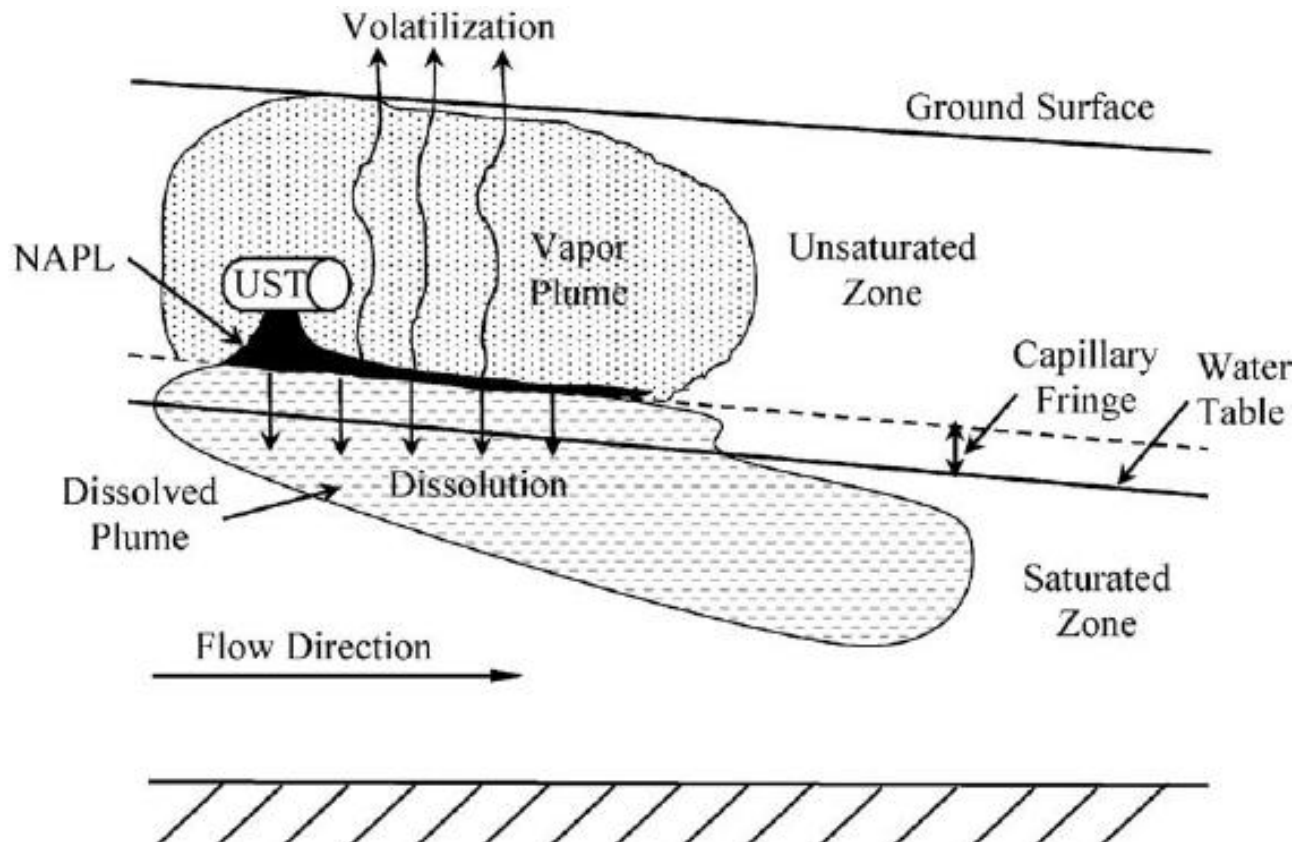
**Review data to continue to ensure the extent of the petroleum is defined.**

**Review the Corrective Action Plan, proposed by Plantation Pipe Line, to make sure the proposed cleanup is appropriate.**

**Continued review and oversight to ensure cleanup is moving toward goals that are protective of human health and the environment.**

## Gasoline & Diesel Fuel (Petroleum)

- made from crude oil
- is a light non-aqueous phase liquid (LNAPL) petroleum product
- it resists dissolving into water
- it evaporates easily
- is less dense than water, so it likes to remain near the top of the water table but it can mix with water



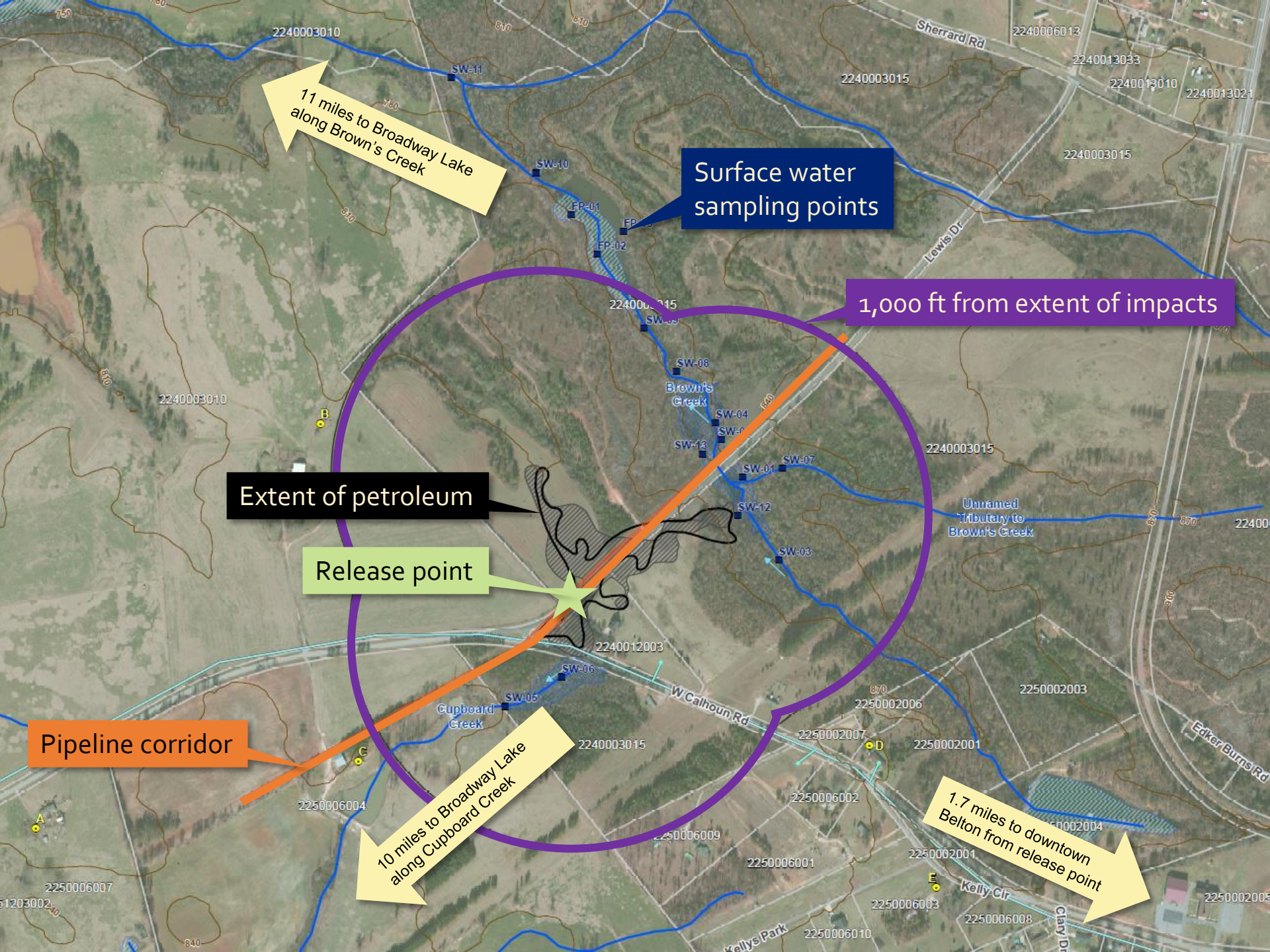
# Background Information

Plantation Pipe Line estimates 369,600 gallons of gasoline and diesel (mostly gasoline) leaked from the pipeline.

**The pipe Line was repaired the week of December 19, 2014** and Lewis Drive was reopened to traffic.







11 miles to Broadway Lake along Brown's Creek

Surface water sampling points

1,000 ft from extent of impacts

Extent of petroleum

Release point

Pipeline corridor

10 miles to Broadway Lake along Cupboard Creek

1.7 miles to downtown Belton from release point



# Initial Actions



Recover as much petroleum as possible.

- 2,800 tons of contaminated soil was removed
- 98 temporary wells were installed to locate free product and determine the extent of groundwater contamination.



- 20 recovery sumps installed.
- 15 recovery wells installed.
- Recovery trenches up-gradient of Brown's Creek and Cupboard Creek installed.
- Hard impermeable booms and soft absorbent booms in Brown's Creek installed.

# Release Status

213,951 gallons of petroleum recovered using vacuum extraction as of December 2016.

Petroleum measurement and recovery of petroleum is carried out weekly or biweekly.

Based upon the recent data the extent of petroleum is defined.





# Project Status

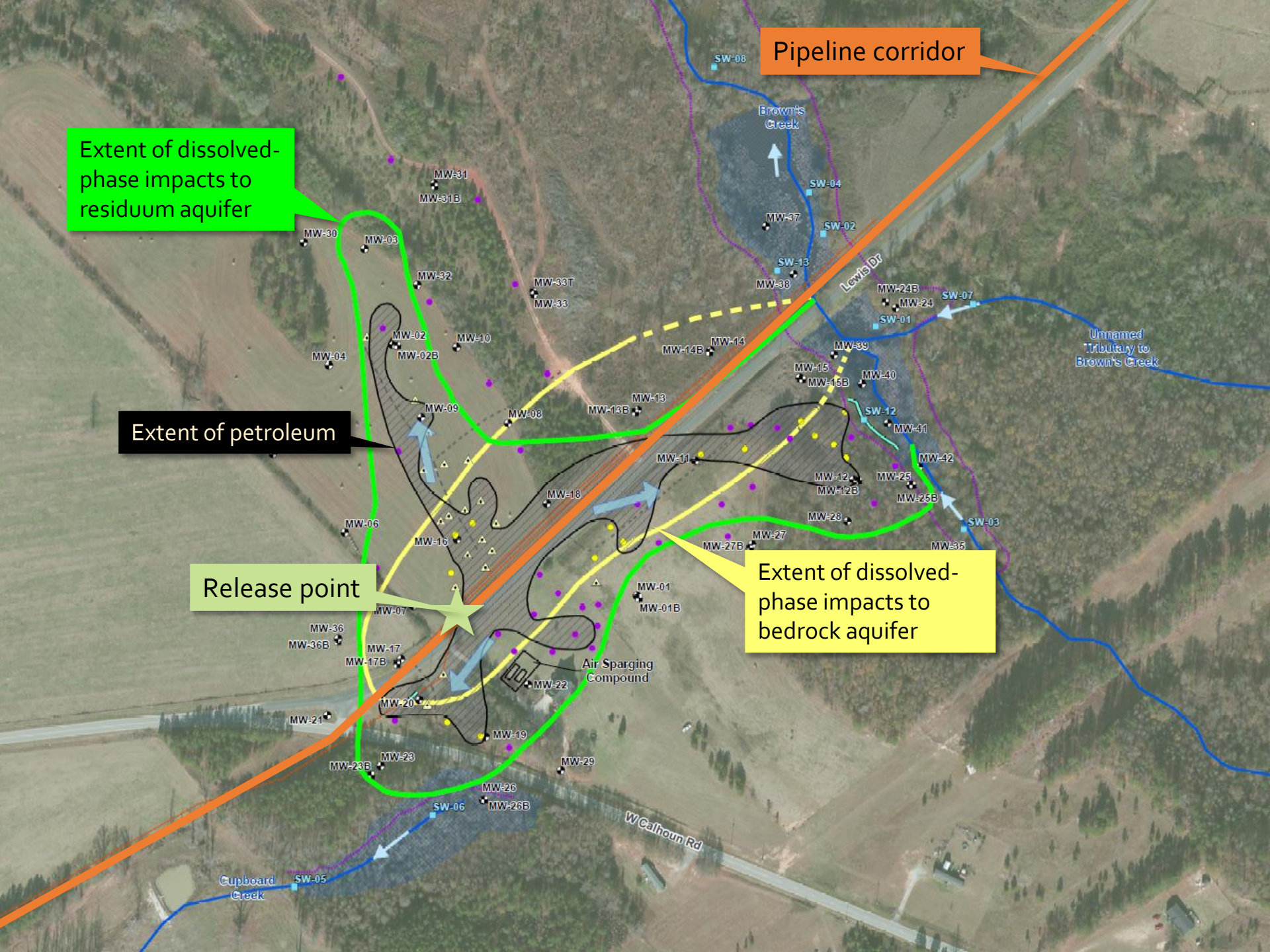
SC DHEC's extended public comment period for Corrective Action Plan (CAP) ended on December 6, 2016.

The CAP has been reviewed and comments have been provided to Plantation Pipe Line.

Installation of remediation system is underway.







Pipeline corridor

Extent of dissolved-phase impacts to residuum aquifer

Extent of petroleum

Release point

Extent of dissolved-phase impacts to bedrock aquifer

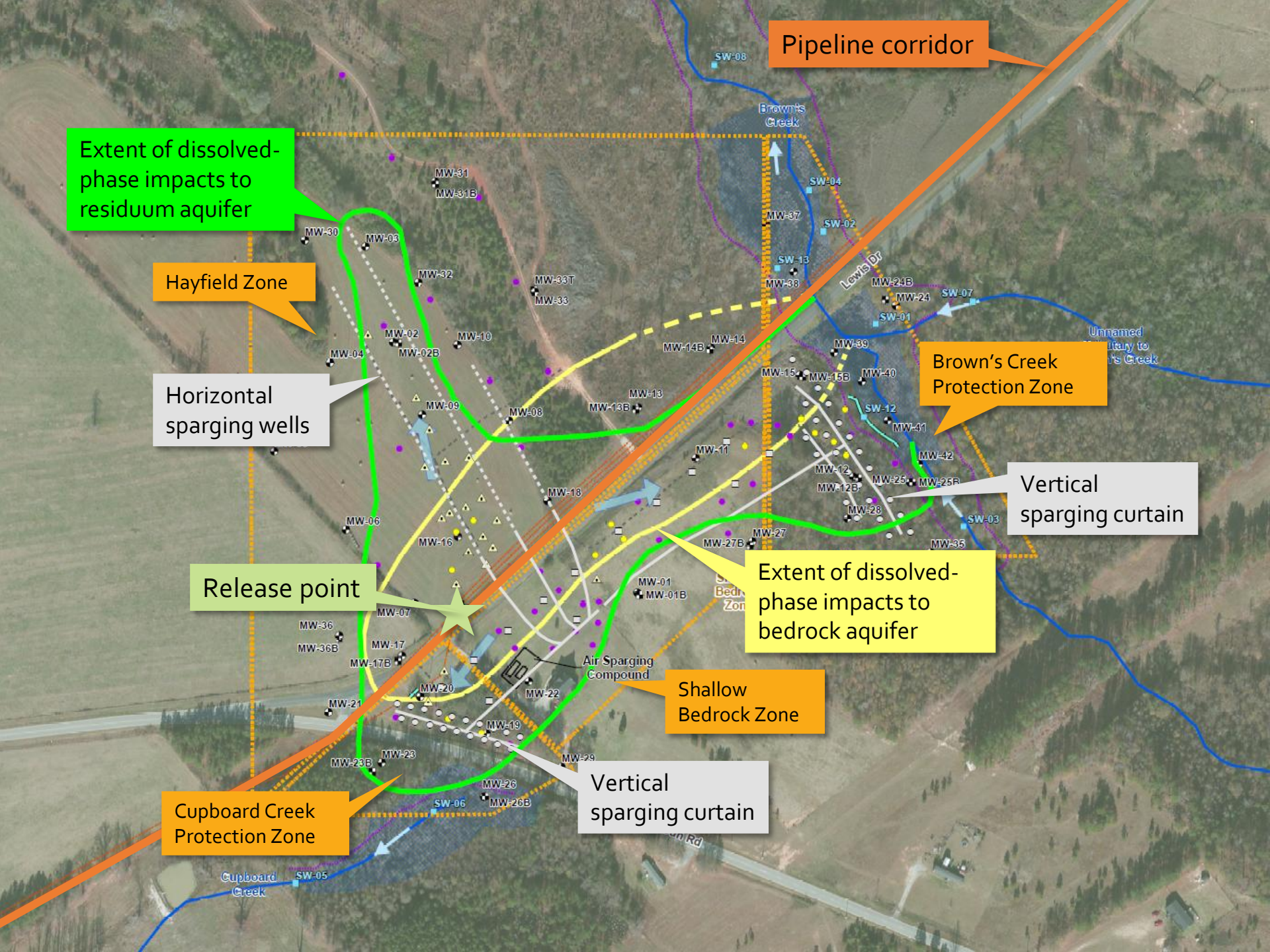


# What is Biosparging

Air is pumped through slotted piping that is placed under the ground. The air creates an environment that supports biological activity in breaking down the petroleum in the nearby groundwater.







Pipeline corridor

Extent of dissolved-phase impacts to residuum aquifer

Hayfield Zone

Horizontal sparging wells

Release point

Extent of dissolved-phase impacts to bedrock aquifer

Brown's Creek Protection Zone

Vertical sparging curtain

Shallow Bedrock Zone

Cupboard Creek Protection Zone

Vertical sparging curtain

Air Sparging Compound

Brown's Creek

Unnamed tributary to Brown's Creek

Cupboard Creek

MW-30

MW-03

MW-32

MW-10

MW-08

MW-13

MW-14B

MW-11

MW-12

MW-28

MW-35

MW-42

MW-25B

MW-26

MW-25

MW-12B

MW-15B

MW-40

MW-39

MW-24

MW-24B

MW-38

MW-37

MW-15

MW-14

MW-09

MW-02B

MW-02

MW-04

MW-31

MW-31B

MW-33T

MW-33

MW-18

MW-06

MW-16

MW-17

MW-17B

MW-20

MW-21

MW-23B

MW-23

MW-26

MW-26B

MW-29

MW-01

MW-01B

MW-27

MW-27B

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

SW-08

Pipeline corridor

Brown's Creek

SW-04

SW-02

SW-13

SW-07

SW-01

SW-12

SW-03

SW-06

SW-05

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

Lewis Dr

Shallow Bedrock Zone

Shallow Bedrock Zone

Vertical sparging curtain

Vertical sparging curtain

Cupboard Creek Protection Zone

Brown's Creek Protection Zone

Hayfield Zone

Extent of dissolved-phase impacts to residuum aquifer

Extent of dissolved-phase impacts to bedrock aquifer

Release point

Air Sparging Compound

Brown's Creek

Unnamed tributary to Brown's Creek

Cupboard Creek

MW-30

MW-03

MW-32

MW-10

MW-08

MW-13

MW-14B

MW-11

MW-12

MW-28

MW-35

MW-42

MW-25B

MW-26

MW-25

MW-12B

MW-15B

MW-40

MW-39

MW-24

MW-24B

MW-38

MW-37

MW-15

MW-14

MW-09

MW-02B

MW-02

MW-04

MW-31

MW-31B

MW-33T

MW-33

MW-18

MW-06

MW-16

MW-17

MW-17B

MW-20

MW-21

MW-23B

MW-23

MW-26

MW-26B

MW-29

MW-01

MW-01B

MW-27

MW-27B

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

SW-08

Pipeline corridor

Brown's Creek

SW-04

SW-02

SW-13

SW-07

SW-01

SW-12

SW-03

SW-06

SW-05

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

SW-06

Lewis Dr

Shallow Bedrock Zone

Shallow Bedrock Zone

Vertical sparging curtain

Vertical sparging curtain

Cupboard Creek Protection Zone

Brown's Creek Protection Zone

Hayfield Zone

Extent of dissolved-phase impacts to residuum aquifer

Extent of dissolved-phase impacts to bedrock aquifer

Release point

Air Sparging Compound

Brown's Creek

Unnamed tributary to Brown's Creek

Cupboard Creek

MW-30

MW-03

MW-32

MW-10

MW-08

MW-13

MW-14B

MW-11

MW-12

MW-28

MW-35

MW-42

MW-25B

MW-26

MW-25

MW-12B

MW-15B

MW-40

MW-39

MW-24

MW-24B

MW-38

MW-37

MW-15

MW-14

MW-09

MW-02B

MW-02

MW-04

MW-31

MW-31B

MW-33T

MW-33

MW-18

MW-06

MW-16

MW-17

MW-17B

MW-20

MW-21

MW-23B

MW-23

MW-26

MW-26B

MW-29

MW-01

MW-01B

MW-27

MW-27B

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

MW-27

SW-08

Pipeline corridor

Brown's Creek

SW-04



# SC DHEC's Path Forward



Continued oversight of petroleum removal, monitoring, and operation of the groundwater cleanup system.

Ongoing communication with Plantation Pipe Line.



Periodic meetings with stakeholders to provide updates on the cleanup.

# Department of Transportation (DOT)

- Federal DOT – Office of Pipeline and Hazardous Materials Safety Administration (PHMSA)
- Arthur Buff, Community Liaison Manager
- Atlanta Office Number is:  
404-837-1147



# CONTACT US

Bureau of Land and Waste Management  
2600 Bull Street  
Columbia, SC 29201

Mihir Mehta, P.E., Director  
UST Management Division  
(803) 898-0623  
[mehtam@dhec.sc.gov](mailto:mehtam@dhec.sc.gov)

---

## Stay Connected