

#### Well Abandonment Completion Report North Starlite Road, Northwoods Subdivision Mayflower Pipeline Incident Response, Mayflower, Arkansas December 29, 2015

This Well Abandonment Completion Report (report) summarizes the groundwater monitoring well abandonment activities completed by ExxonMobil Environmental Services Company (EMES) on behalf of ExxonMobil Pipeline Company (EMPCo), at properties located within the Northwoods Subdivision in Mayflower, Arkansas (Figure 1). Specifically, these properties include 24, 32, 36, 40 and 44 North Starlite Road, including well TW-44-03 located on the east side of 44 North Starlite property (Figure 2). As described in the Well Abandonment Plan (ARCADIS 2015), a total of 14 groundwater monitoring wells were installed in April 2013 as part of the Mayflower Pipeline Incident Response activities. Of these 14 groundwater monitoring wells, a total of 13 wells, installed on properties 24, 32, 36, and 44 North Starlite Road, were abandoned between December 7 and 9, 2015.

Well abandonment activities were completed by a state licensed driller (McCray Drilling, LLC) in accordance with the Arkansas' *Monitoring Well Construction, Geotechnical Boreholes, And Plug & Abandonment Policy* (Policy; Arkansas Department of Environmental Quality [ADEQ] 2015). These activities were completed under the oversight of an Arkansas Professional Geologist. Consistent with Section 4 of the Policy, well abandonment activities included manual removal of concrete well pad and pipe, wherever possible, followed by overdrilling. Initial removal of well pipe facilitated the removal of the casing, screen, and subsurface completion materials.

Following removal of well material, a cement-bentonite grout mixture was placed from the bottom to the top by pressure grouting with a positive displacement method (i.e., tremie grout where the grout was pumped from the bottom of the borehole upward). Grout was added until the borehole was filled to an approximately 6 inches below ground surface. Grouting activities at each well were completed on December 9, 2015. All materials generated during well abandonment activities (e.g., concrete, metal entry covers) were properly disposed of in accordance with all Laws and Regulations. Well abandonment logs for these 13 groundwater monitoring wells were provided to the Arkansas Water Well Construction Commission documenting that the wells installed were abandoned (Attachment A). Photographs documenting well abandonment activities are included in Attachment B.

The ground surface disturbed due to well abandonment activities was restored by placing an approximately 6-inch layer of topsoil to fill the remaining portion of the borehole. The area was then seeded by B&A Property Maintenance on December 9, 2015.

A groundwater monitoring well (TW-40-01) located on a private property at 40 North Starlite Road was not abandoned due to ongoing access agreement coordination with the property owner. This groundwater monitoring well will be abandoned by EMES when an access agreement is executed with the property owner. EMES will notify the ADEQ upon completion of the well abandonment activities at this property.



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#### References

ADEQ. 2015. Monitoring Well Construction, Geotechnical Boreholes, And Plug & Abandonment Policy. Arkansas Department of Pollution Control and Ecology, Hazardous Waste Division. Policy # HWD-002. Accessed October 19, 2015. <a href="http://www2.adeq.state.ar.us/hazwaste/">http://www2.adeq.state.ar.us/hazwaste/</a>

ARCADIS. 2015. Well Abandonment Plan, North Starlite Road, Northwoods Subdivision. Mayflower Pipeline Incident Response, Mayflower, Arkansas. October 29.

#### **Figures**

- 1 Site Location Map
- 2 Monitoring Well Location Map

#### **Attachments**

- A Well Abandonment Logs
- B Photolog

#### **FIGURES**

# SITE LOCATION MAP



**FIGURE** 

- **Existing Groundwater Monitoring Well**
- Abandoned Groundwater Monitoring Well
- Pipeline
- Parcel Boundary

N. STARLITE ROAD, MAYFLOWER, ARKANSAS

**MONITORING WELL LOCATION MAP** 



**FIGURE** 

2

#### **ATTACHMENTS**

#### **ATTACHMENT A**

Well Abandonment Logs





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Arkansas Water Well Abandonment F Contactor/Owner: Mc Crey Drilling Registration #: 1/93	orm –
David McCray  Date: 12 / 09 / 2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form)  placement, etc.  County: Faul Knr	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	TW-24-01
	Mw-13
Latitude: 34.963388 Longitude: 92.42724°  2. Owner and Address: Exxon Mobile Pipeline Co.	See Attached MAP
800 Bell Street, PL-EMB-577L  Houston, TX. 77002  4. Depth of Well: 7' Diameter of Well: 3/4 inch  5. Amount of Casing Removed: 7' Diameter: 3/4 inch	
6. Sealing Material and Placement:  Neat Sand  Bags Cement Cement Other Placement (94 lb): /_ FromOft; Toft  Gals of Water: /_ Fromft; Toft  Yards  of Sand: /_ Fromft; Toft	
7. Explain Method of Emplacement of Material:  Removed Cover, and well material over  Pushed hole + trmie grouted hole with  Neat coment + Bentovite grout.	





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Arkansas Water Well Abandonment For Contactor/Owner: Mc Cray Drilling Registration #: 1/93	orm -
David McCray  Date: 12/09/2015 (MM/DD/YYYY)	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing
1. Well Location: (Show sketch of location on back of this form) placement, etc.  County: Faul Kner	(if present), grouting materials &
Township Range Section (if available)	TW-24-02
	MW-12
Latitude: 34,9635 Longitude: 92.427259	See Attached
2. Owner and Address: Exxon Mobile Pipeline Co.  800 Bell Street, PL-EMB-577L  Houston, TX, 77002	Map
3. Use of Well: Monitoring	*
4. Depth of Well:	
5. Amount of Casing Removed:inch	
6. Sealing Material and Placement:	
Neat Sand  Bags Cement Cement Other Placement  (94 lb): ft; To ft  Gals  of Water:	
of Water:	a .
7. Explain Method of Emplacement of Material:	
hemoued cover, and well material over fushed hole & trmie grouted hole with	
neat coment Dentonite grout.	





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Arkansas Water Well Abandonment For Contactor/Owner: Mc Cray Drilling Registration #: 1193  David Mc Cray  Date: 12 / 0 9 / 2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form)  placement, etc.  County: Faul Know	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	TW-24-03 MW-10
Latitude: 34.963535 Longitude: 72.427485  2. Owner and Address: Exxon Mobile Pipeline Co.	See Attached MAP
800 Bell Street, PL-EMB-577L  Houston, TX. 77002  4. Depth of Well:	
6. Sealing Material and Placement:  Neat Sand  Bags Cement Cement Other Placement (94 lb):  Gals of Water:  Yards  Sentant ef Sand:  From ft; To ft  From ft; To ft  From ft; To ft  From ft; To ft	
7. Explain Method of Emplacement of Material:  Removed Cover, and well material over fushed hole & trmie grouted hole with Neat coment & Bentovite grout.	





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Arkansas Water Well Abandonment F Contactor/Owner: Mc Cray Drilling Registration #: 1193	orm
David McCray  Date: 12 / 09 / 2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form) placement, etc.  County: Faul Know	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	TW-24-03D MW-11
	M W-11
Latitude: 34.963545° Longitude: -92.427484°	See Attached
2. Owner and Address: Exxon Mobile Pipeline Co.	Map
3. Use of Well: Monitoring  4. Depth of Well: 19 Diameter of Well: 3/4 inch  5. Amount of Casing Removed: 19 Diameter: 3/4 inch  inch	
6. Sealing Material and Placement:  Neat Sand  Bags Cement Cement Other Placement (94 lb): Gals of Water:  Yards  Sentent Sand  From Oft; To 19 ft  From ft; To ft  From ft; To ft	
7. Explain Method of Emplacement of Material:  Removed Cover, and well material over Pushed hole + trmie grouted hole with Neat coment + Bentonite grout.	





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Arkansas Water Well Abandonment For Cray Dr. (ling Registration #: 1193	orm –
David McCray  Date: 12 / 09 / 2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form)  placement, etc.  County: Faul Knock	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	TW-32-01 MW-9
Latitude: 34.963538° Longitude: 92.427742°	See Attached
2. Owner and Address: Exxon Mobile Pipeline Co.	AN AP
3. Use of Well: Monitoring  4. Depth of Well: 7' Diameter of Well: 3/4 inch  5. Amount of Casing Removed: 7' Diameter: 3/4 inch	
inch	
6. Sealing Material and Placement:  Neat Sand  Bags Cement Cement Other Placement (94 lb):	
7. Explain Method of Emplacement of Material:  Removed Cover, and well material over lushed hole & trmie grouted hole with  Neat coment & Bentouite grout.	





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Arkansas Water Well Abandonment F Contactor/Owner: McCray Drilling Registration #: 1/93	orm
David McCray  Date: 12/09/2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form)  placement, etc.  County: Faul Know	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	TW-32-02
	Mw-14
Latitude: 34.96336 Longitude: 72.427798  2. Owner and Address: Exxon Mobile Pipeline Co.  800 Bell Street, PL-EMB-5774  Houston, TX. 77002  3. Use of Well:	See Attached Map
6. Sealing Material and Placement:  Neat Sand Bags Cement Cement Other Placement 7 ft  Gals of Water:  Yards  6. From 6t; To 7 ft  From 6t; To ft  From ft; To ft  From ft; To ft	
7. Explain Method of Emplacement of Material:  Removed Cover, and well material over Pushed hole + trmie grouted hole with Neat coment + Bentouite grout.	





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Arkansas Water Well Abandonment For Cray Drilling Registration #: 1193	orm _
Dauid McCray  Date: 12/09/2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form)  placement, etc.  County: Faul Know	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	Tw-36-01
1/41/4	Mw-5
Latitude: 34,963415 Longitude: 92,427998  2. Owner and Address: Exxon Mobile Pipeline CO.  800 Bell Street, PL-EMB-5774  Houston, TX. 77002  4. Depth of Well: 18 Diameter of Well: 3/4 inch  5. Amount of Casing Removed: 18 Diameter: 3/4 inch  6. Sealing Material and Placement:	See Attached MAP
Bags Cement Cement Other Placement  (94 lb):	





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Arkansas Water Well Abandonment Formation Mc Cray Drilling Registration #: 1193  David Mc Cray  Date: 12 / 09 / 2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form) placement, etc.	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	TW-36-02 MW-6
Latitude: 34.963398 Longitude: 72.428228  2. Owner and Address: Exxon Mobile Pipeline Co.  800 Bell Street, PL-Emb-5774  Houston, TX. 77002  3. Use of Well: Monitoring  4. Depth of Well: 7' Diameter of Well: 3/4 inch  5. Amount of Casing Removed: 7' Diameter: 3/4 inch	See Attached Map
6. Sealing Material and Placement:  Neat Sand  Bags Cement Cement Other Placement  (94 lb):  Gals  of Water:  Yards  Bentonite  7. Explain Method of Emplacement of Material:  Removed Cover, and well material over  Pushed Note + trmie growted hole with  Neat Covert Bentonite growt.	





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Mike Beebe Governor

Arkansas Water Well Abandonment F Contactor/Owner: Mc Cray Drilling Registration #: 1/93	orm
David McCray  Date: 12 / 09 / 2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form)  placement, etc.  County: Faul Know	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	TW-36-03
1/41/4	MW-7
Latitude: 34.963544 Longitude: 92.42)995  2. Owner and Address: Exxon Mobile Pipeline Co.  800 Bell Street, PL-Emb-5774  Houston, TX. 77002  3. Use of Well: Mobile Pipeline  4. Depth of Well: 22' Diameter of Well: 3/4 inch  5. Amount of Casing Removed: 22' Diameter: 3/4 inch  inch	See Attached Map
6. Sealing Material and Placement:  Neat Sand  Bags Cement Cement Other Placement  (94 lb):  Gals  of Water:  Yards  def From ft; To ft  7. Explain Method of Emplacement of Material:  Lemoued Cover, and well material over  lushed hole & trmie grouted hole with  Neat Coment & Bentonite grout.	

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Contactor/Owner: Mc Cray Dr. Iling Registration #: 1/93	orm
David McCray  Date: 12/09/2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form)  placement, etc.  County: Faul Know	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	TW-36-04
	Mw-8
Latitude: 34.963415 Longitude: 92.427998  2. Owner and Address: Exxon Mobile Pipeline Co.  800 Bell Street, PL-Emb-5774  Houston, TX. 77002  3. Use of Well: Monitoring  4. Depth of Well: 22' Diameter of Well: 3/4 inch  5. Amount of Casing Removed: 22' Diameter: 3/4 inch	See Attached Map
inch	
6. Sealing Material and Placement:  Neat Sand Bags Cement Cement Other Placement (94 lb): Gals of Water: Yards  Gards  From ft; To ft  From ft; To ft  From ft; To ft	
7. Explain Method of Emplacement of Material:  Removed Cover, and well material over fushed hole & trmie grouted hole with Neat coment & Bentovite grout.	





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Arkansas Water Well Abandonment For Cray Dr. (ling Registration #: 1/93	orm -
David McCray  Date: 12 / 09 / 2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form)  placement, etc.  County: Faul Knor	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	TW-44-01
	MW-4
Latitude: 34,963816 Longitude: 92,428484  2. Owner and Address: Exxon Mobile Pipeline Co.  800 Bell Street, PL-EMB-5774  Houston, TX, 77002  3. Use of Well: Manitaring	See Attached MAP
4. Depth of Well: 8 Diameter of Well: 3/4 inch  5. Amount of Casing Removed: 8 Diameter: 3/4 inch	
6. Sealing Material and Placement:  Neat Sand  Bags Cement Cement Other Placement (94 lb):  Gals of Water:  Yards  Bentonte  7. Explain Method of Emplacement of Material:  Removed Cover, and well material over  Pushed Note + trmie grouted hole with Neat Covert Placement of Material:	





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David McCray  Date: 12 / 09/2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form)  placement, etc.  County: Faul Knr	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
Township Range Section (if available)	TW-44-02 MW-2
Latitude: 34.96.3753° Longitude: 792.428397°	See Attached
2. Owner and Address: Exxon Mobile Pipeline Co.  800 Bell Street, PL-EMB-577L  Houston, TX, 77002	MAP
3. Use of Well: Monitoring  4. Depth of Well:	
5. Amount of Casing Removed: 7 Diameter: 3/4 inch	
6. Sealing Material and Placement:	
Neat Sand  Bags Cement Cement Other Placement  (94 lb): /_ From O ft; To 7 ft  Gals  of Water: /_ From ft; To ft	
96 Yards Bentonite From ft; To ft	¥1
7. Explain Method of Emplacement of Material:  Removed Cover, and well material over  Pushed hole + trmie grouted hole with	
heat coment Dentonite grout.	





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Arkansas Water Well Abandonment F. Cray Dr. (ling Registration #: 1/93	orm –
David McCray  Date: 12 / 09 / 2015 (MM/DD/YYYY)  1. Well Location: (Show sketch of location on back of this form)	* Well & Formation Diagram: Sketch a diagram showing depths of well, formations, casing (if present), grouting materials &
County: Faul Kner	
Township Range Section (if available)	TW-44-03 MW-3
Latitude: 34 , 96 377° Longitude: 92, 428032	See Attached
2. Owner and Address: Exxon Mobile Pipeline Co.  800 Bell Street, PL-EMB-577L	MAP
3. Use of Well: Monitoring	
4. Depth of Well: Diameter of Well: inch  5. Amount of Casing Removed: Diameter: inch	
6. Sealing Material and Placement:  Neat Sand Bags Cement Cement Other Placement (94 lb): Gals of Water:  Yards  Physical Sand From Oft; To 7 ft From ft; To ft From ft; To ft From ft; To ft	
7. Explain Method of Emplacement of Material:  Removed Cover, and well material over Pushed hole + trmie grouted hole with Neat coment + Bentonite grout.	

#### **ATTACHMENT B**

Photolog



Well ID: TW-44-01

**Date:** 12/07/2015

**Description:** Removal of concrete well

pad.



**Well ID:** TW-24-01

**Date:** 12/07/2015

**Description:** Removal of concrete well

pad and well pipe.



**Well ID:** TW-36-03

**Date:** 12/08/2015

**Description:** Overdrilling activities.

EXXONMOBIL ENVIRONMENTAL SERVICES WELL ABANDONMENT COMPLETION REPORT N. STARLITE ROAD, MAYFLOWER, ARKANSAS

**WELL ABANDONMENT** 



FIGURE

B-1



Well ID: TW-36-03

**Date:** 12/09/2015

**Description:** Grouting activities.



**Well ID:** TW-24-02

**Date:** 12/09/2015

**Description:** Grouted well location.



**Well ID:** TW-44-03

**Date:** 12/09/2015

**Description:** Grading activities at a former

well location.

EXXONMOBIL ENVIRONMENTAL SERVICES WELL ABANDONMENT COMPLETION REPORT N. STARLITE ROAD, MAYFLOWER, ARKANSAS

WELL GROUTING AND SURFACE GRADING



FIGURE