

DOT US Department of Transportation  
PHMSA Pipelines and Hazardous Materials Safety Administration  
OPS Office of Pipeline Safety  
Southwest Region

**Principal Investigator** Gene Roberson  
**Region Director** R. M. Seeley  
**Date of Report** 9/12/2013  
**Subject** Failure Investigation Report – Lion Oil Trading & Transportation, Inc.  
Suction Strainer Failure - Magnolia Tank Farm

### **Operator, Location, & Consequences**

**Date of Failure** 03/09/2013  
**Commodity Released** Crude Oil  
**City/County & State** Magnolia/Columbia County, Arkansas  
**OPID & Operator Name** 11551 Lion Oil Trading & Transportation, Inc.  
**Unit # & Unit Name** 47594 Magnolia Pipeline  
**SMART Activity #** 142985  
**Milepost / Location** Magnolia Tank Farm  
**Type of Failure** Suction strainer failed resulting in the release of 5,600 bbl of crude oil.  
**Fatalities** None  
**Injuries** None  
**Description of Area Impacted** Rural station site and approximately 2.5 miles offsite, including the Little Cornie Waterway, a tributary of Cornie Bayou.  
**Property Damage** \$3,693,000

**Failure Investigation Report – [Lion Oil Trading & Transportation, Inc.– Suction Strainer Failed]**  
[Failure Date 03/09/2013]

## **Executive Summary**

At approximately 9:00 a.m. central standard time (CST), March 9, 2013, Lion Oil & Transportation, Inc.'s (Lion Oil) daily operator arrived at the tank farm (Magnolia Station) located in Columbia County, Arkansas. Upon arrival, he identified a release of crude oil upstream of the pipeline pumps. The pumps receive crude from the on-site breakout tanks for delivery into Lion Oil's pipeline, which transports crude to the refinery in El Dorado, Arkansas. An estimated 5,600 barrels of crude oil was released, with approximately 1,500 barrels running offsite.

On Saturday, March 9, 2013, at 11:01 a.m. CST, Lion Oil notified the National Response Center (NRC) of the crude oil release at Magnolia Station.

PHMSA's Southwest Region traveled to the accident site to investigate the accident. A buried strainer upstream of Pump #6 was identified as the source of the release. The spill was located in a rural area, affecting the pump area, the inline inspection device trap area of the pipelines, a site retention pond, and approximately 2.5 miles offsite in an area that included the Little Cornie Waterway. No local emergency personnel responded to the scene. There were no injuries, road closures, or resident evacuations associated with this accident.



Figure 1 Release Site

**Failure Investigation Report – [Lion Oil Trading & Transportation, Inc.– Suction Strainer Failed]**  
[Failure Date 03/09/2013]

## **System Details**

Lion Oil & Transportation, Inc. is owned by Lion Oil Company. They operate 181 miles of crude oil transmission pipelines from Finney, Louisiana, to Magnolia, Arkansas, then further to the refinery in El Dorado, Arkansas. The Magnolia tank farm is a part of this system, and there are two regulated breakout tanks at this location. Crude oil is delivered from the Magnolia breakout tanks, through the strainer, to the suction of Pump #6, which sends the crude oil to El Dorado. The crude oil received at Magnolia Station comes from other pipelines and truck deliveries from gathering systems.

The tank farm was originally built in the 1940s, and the facility was purchased by Lion Oil in the 1980s. The strainer was part of the original facility, and it only experiences the head pressure of the breakout tanks.

The Magnolia Tank Farm is manned daily and is located in Columbia County, Arkansas.



**Figure 2 Strainer Site with start of replacement piping**

The failure occurred in the suction side of the strainer vessel inside the station. No previous failures have been reported in the station.

### **Pipe Specifications**

The strainer was a part of the original construction prior to Lion Oil purchasing the assets. The purpose of the strainer was to protect the original pumps that had been installed at this site. There was only one original strainer at the facility, and it was located on the suction side of Pump #6. Piping within the tank farm is not covered by the pipeline leak monitoring system.

**Failure Investigation Report – [Lion Oil Trading & Transportation, Inc.– Suction Strainer Failed]**  
**[Failure Date 03/09/2013]**

### **Events Leading Up to the Failure**

Lion Oil's Magnolia pipeline system was operating normally at the time of the accident and continued operating as the release did not affect the pipeline system. On the evening of March 8, 2013, Pump #6 was flowing at approximately 2200 barrels per hour (bph) when it was determined more volume was needed at El Dorado Refinery. The control center proceeded to shut down Pump #6 and started up Pump #4, increasing the flow to 2500 bph later that same evening. The switch appeared to be normal with no issues being indicated by the pipeline's supervisory control and data acquisition (SCADA) system. Without SCADA information available for the station piping, it was predicted that the failure occurred during the stop/start sequence of the pump swap, and it is assumed that the strainer (under tank head pressure for 9-10 hours) released crude oil until the tank farm operator arrived at 9 a.m. the next morning, March 9, 2013.

Lion Oil reported the release to the NRC at approximately 10:01 a.m. CST on March 9, 2013 (See Appendix A).

### **Emergency Response**

The Lion Oil tank farm operator, upon entering the site, identified the release and isolated Magnolia Station's Pump #6 and activated the site's Oil Pollution Act plan. The crude oil had pooled in the secondary site containment pond and then proceeded to overflow to natural drainage areas in the area. Containment and clean up began immediately to minimize the effects of the release.

The spill was located in a rural area and affected the pump area, the inline inspection device trap area of the pipelines, a site retention pond, and approximately 2.5 miles offsite in an area that included the Little Cornie Waterway. No local emergency and fire personnel responded to the scene. Due to the remoteness of the station, no roads were closed and no residents were evacuated. Clean-up of the area extended approximately 2.5 miles from the site.

The release's volume was estimated to be approximately 1,200 barrels at the time of discovery. That volume was increased to 5,000+ barrels during the recovery effort.

### **Summary of Return-to-Service**

Following the emergency response, Lion Oil locked out Pump # 6 and continued delivering crude to the El Dorado refinery using Pump #4. The transmission pipeline was not affected and remained in-service.

The strainer and pump suction piping were removed to allow soil removal for clean-up. The strainer was sent to a lab for analysis to validate the cause of failure. Lion Oil installed new pipe in place of the removed strainer and suction piping. No corrosion was observed in the piping removed with the strainer.

### **Investigation Details**

At approximately 10:01 a.m. CST, on March 9, 2013, Lion Oil reported, to the NRC, a release of crude oil due to an unknown cause at Magnolia Station in Columbia County, Arkansas. PHMSA's Southwest Region received the incident notification and made plans to have an investigator on-site. The investigator arrived on-site at approximately 3:00 p.m., CST, on March 12, 2013. Spill clean-up was in progress, and the EPA was on-site. PHMSA's investigator was able to view the site with the operator. While the PHMSA investigator was



**Failure Investigation Report – [Lion Oil Trading & Transportation, Inc.– Suction Strainer Failed]**  
[Failure Date 03/09/2013]

on-site, the check valve downstream of Pump #6 was replaced, and the strainer was removed for evaluation. At that time, plans were being finalized to replace the suction header to the pump. A buried strainer vessel on the suction side of Pump #6 was determined to have failed, due to thorough wall corrosion. The strainer was identified as the source of the release, and upon visual examination, the release was determined to be caused by internal corrosion. Photos of the failed strainer can be seen in Figures 3 and 4. The corrosion was limited to the area where settled product was allowed to pool. No further indications of internal corrosion within the station piping were identified during the investigation.

PHMSA reviewed the operator's OPA plan for the operator's response activities to the release and found no issues with their plan or with Lion Oil's implementation of their plan.



**Figure 3 Failed Strainer (external view)**

**Failure Investigation Report – [Lion Oil Trading & Transportation, Inc.– Suction Strainer Failed]**  
[Failure Date 03/09/2013]



**Figure 4 Failed Strainer**

### **Metallurgical Analysis**

The strainer was sent to a metallurgical lab in Houston, Texas, for analysis.

The conclusions were:

- The strainer failure was caused by extreme, localized internal corrosion (IC).
- IC was caused by an acidic environment, most probably naphthenic acid (normal in crude).
- There was no evidence of microbiological corrosion.

### **Mechanical Analysis**

There was no mechanical analysis to be made.


### **Conclusion**

A failure occurred in the side wall of the Pump #6 suction strainer due to internal corrosion.

### **Appendices**

- A Telephonics Notice Report – NRC # 1040525
- B Operator Accident Report – ODES # 20130130



NOTICE: This report is required by 49 CFR Part 195. Failure to report can result in a civil penalty not to exceed \$100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.		OMB NO: 2137-0047 EXPIRATION DATE: 01/31/2014	
 <p>U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration</p>	<b>Original Report Date:</b>	04/05/2013	
	<b>No.</b>	20130130 - 18199 <small>(DOT Use Only)</small>	
<b>ACCIDENT REPORT - HAZARDOUS LIQUID PIPELINE SYSTEMS</b>			
<p>A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0047. Public reporting for this collection of information is estimated to be approximately 10 hours per response (5 hours for a small release), including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.</p>			
<b>INSTRUCTIONS</b> <i>Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <a href="http://www.phmsa.dot.gov/pipeline">http://www.phmsa.dot.gov/pipeline</a>.</i>			
<b>PART A - KEY REPORT INFORMATION</b>			
Report Type: <i>(select all that apply)</i>	<b>Original:</b>	<b>Supplemental:</b>	<b>Final:</b>
		Yes	
Last Revision Date:	06/17/2013		
1. Operator's OPS-issued Operator Identification Number (OPID):	11551		
2. Name of Operator	LION OIL TRADING & TRANSPORTATION, INC		
3. Address of Operator:			
3a. Street Address	1001 SCHOOL STREET P.O. BOX 7005		
3b. City	EL DORADO		
3c. State	Arkansas		
3d. Zip Code	71731-7005		
4. Local time (24-hr clock) and date of the Accident:	03/09/2013 09:00		
5. Location of Accident:			
Latitude:	33.24043		
Longitude:	-93.1468		
6. National Response Center Report Number (if applicable):	1040525		
7. Local time (24-hr clock) and date of initial telephonic report to the National Response Center (if applicable):	03/09/2013 11:01		
8. Commodity released: <i>(select only one, based on predominant volume released)</i>	Crude Oil		
- Specify Commodity Subtype:			
	- If "Other" Subtype, Describe:		
- If Biofuel/Alternative Fuel and Commodity Subtype is Ethanol Blend, then % Ethanol Blend:			
	%		
- If Biofuel/Alternative Fuel and Commodity Subtype is Biodiesel, then Biodiesel Blend (e.g. B2, B20, B100):			
	B		
9. Estimated volume of commodity released unintentionally (Barrels):	5,600.00		
10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):			
11. Estimated volume of commodity recovered (Barrels):	5,300.00		
12. Were there fatalities?	No		
- If Yes, specify the number in each category:			
12a. Operator employees			
12b. Contractor employees working for the Operator			
12c. Non-Operator emergency responders			
12d. Workers working on the right-of-way, but NOT associated with this Operator			
12e. General public			
12f. Total fatalities (sum of above)			
13. Were there injuries requiring inpatient hospitalization?	No		
- If Yes, specify the number in each category:			
13a. Operator employees			
13b. Contractor employees working for the Operator			
13c. Non-Operator emergency responders			

13d. Workers working on the right-of-way, but NOT associated with this Operator	
13e. General public	
13f. Total injuries (sum of above)	
14. Was the pipeline/facility shut down due to the Accident?	
- If No, Explain:	
- If Yes, complete Questions 14a and 14b: (use local time, 24-hr clock)	
14a. Local time and date of shutdown:	
14b. Local time pipeline/facility restarted:	
- Still shut down? (* Supplemental Report Required)	
15. Did the commodity ignite?	No
16. Did the commodity explode?	No
17. Number of general public evacuated:	0
18. Time sequence (use local time, 24-hour clock):	
18a. Local time Operator identified Accident:	03/09/2013 09:01
18b. Local time Operator resources arrived on site:	03/09/2013 10:00
<b>PART B - ADDITIONAL LOCATION INFORMATION</b>	
1. Was the origin of Accident onshore?	Yes
If Yes, Complete Questions (2-12)	
If No, Complete Questions (13-15)	
<b>- If Onshore:</b>	
2. State:	Arkansas
3. Zip Code:	71753
4. City:	Magnolia
5. County or Parish:	Columbia
6. Operator-designated location:	Milepost/Valve Station
Specify:	00
7. Pipeline/Facility name:	Magnolia Station
8. Segment name/ID:	Station Piping
9. Was Accident on Federal land, other than the Outer Continental Shelf (OCS)?	No
10. Location of Accident:	Originated on Operator-controlled property, but then flowed or migrated off the property
11. Area of Accident (as found):	Underground
Specify:	Under soil
- If Other, Describe:	
Depth-of-Cover (in):	30
12. Did Accident occur in a crossing?	No
- If Yes, specify below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased/ Uncased/ Bored/drilled	
- If Road crossing –	
Cased/ Uncased/ Bored/drilled	
- If Water crossing –	
Cased/ Uncased	
- Name of body of water, if commonly known:	
- Approx. water depth (ft) at the point of the Accident:	
- Select:	
<b>- If Offshore:</b>	
13. Approximate water depth (ft) at the point of the Accident:	
14. Origin of Accident:	
- In State waters - Specify:	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- On the Outer Continental Shelf (OCS) - Specify:	
- Area:	
- Block #:	
15. Area of Accident:	
<b>PART C - ADDITIONAL FACILITY INFORMATION</b>	
1. Is the pipeline or facility:	Interstate
2. Part of system involved in Accident:	Onshore Terminal/Tank Farm Equipment and Piping
- If Onshore Breakout Tank or Storage Vessel, Including Attached Appurtenances, specify:	



3. Item involved in Accident:	Other
- If Pipe, specify:	
3a. Nominal diameter of pipe (in):	
3b. Wall thickness (in):	
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3d. Pipe specification:	
3e. Pipe Seam, specify:	
- If Other, Describe:	
3f. Pipe manufacturer:	
3g. Year of manufacture:	
3h. Pipeline coating type at point of Accident, specify:	
- If Other, Describe:	
- If Weld, including heat-affected zone, specify:	
- If Other, Describe:	
- If Valve, specify:	
- If Mainline, specify:	
- If Other, Describe:	
3i. Manufactured by:	
3j. Year of manufacture:	
- If Tank/Vessel, specify:	
- If Other - Describe:	Pipeline Stainer
4. Year item involved in Accident was installed:	1978
5. Material involved in Accident:	Carbon Steel
- If Material other than Carbon Steel, specify:	
6. Type of Accident Involved:	Leak
- If Mechanical Puncture - Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	Other
- If Other, Describe:	hole in pipe strainer wall
- If Rupture - Select Orientation:	
- If Other, Describe:	
Approx. size: in. (widest opening) by	
in. (length circumferentially or axially)	
- If Other - Describe:	
<b>PART D - ADDITIONAL CONSEQUENCE INFORMATION</b>	
1. Wildlife impact:	Yes
1a. If Yes, specify all that apply:	
- Fish/aquatic	
- Birds	
- Terrestrial	Yes
2. Soil contamination:	Yes
3. Long term impact assessment performed or planned:	No
4. Anticipated remediation:	Yes
4a. If Yes, specify all that apply:	
- Surface water	Yes
- Groundwater	
- Soil	Yes
- Vegetation	
- Wildlife	
5. Water contamination:	Yes
5a. If Yes, specify all that apply:	
- Ocean/Seawater	
- Surface	Yes
- Groundwater	
- Drinking water: (Select one or both)	
- Private Well	
- Public Water Intake	
5b. Estimated amount released in or reaching water (Barrels):	1,800.00
5c. Name of body of water, if commonly known:	Little Cornie Bayou
6. At the location of this Accident, had the pipeline segment or facility been identified as one that "could affect" a High Consequence Area (HCA) as determined in the Operator's Integrity Management Program?	No
7. Did the released commodity reach or occur in one or more High Consequence Area (HCA)?	No
7a. If Yes, specify HCA type(s): (Select all that apply)	
- Commercially Navigable Waterway:	

Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- High Population Area:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Other Populated Area	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Drinking Water	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Ecological	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
<b>8. Estimated Property Damage:</b>	
8a. Estimated cost of public and non-Operator private property damage	\$ 100,000
8b. Estimated cost of commodity lost	\$ 83,000
8c. Estimated cost of Operator's property damage & repairs	\$ 60,000
8d. Estimated cost of Operator's emergency response	\$ 450,000
8e. Estimated cost of Operator's environmental remediation	\$ 3,000,000
8f. Estimated other costs	\$ 0
Describe:	
8g. Total estimated property damage (sum of above)	\$ 3,693,000
<b>PART E - ADDITIONAL OPERATING INFORMATION</b>	
1. Estimated pressure at the point and time of the Accident (psig):	400.00
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	280.00
3. Describe the pressure on the system or facility relating to the Accident (psig):	Pressure exceeded 110% of MOP
4. Not including pressure reductions required by PHMSA regulations (such as for repairs and pipe movement), was the system or facility relating to the Accident operating under an established pressure restriction with pressure limits below those normally allowed by the MOP?	No
- If Yes, Complete 4.a and 4.b below:	
4a. Did the pressure exceed this established pressure restriction?	
4b. Was this pressure restriction mandated by PHMSA or the State?	
5. Was "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend" selected in PART C, Question 2?	No
- If Yes - (Complete 5a. - 5e. below)	
5a. Type of upstream valve used to initially isolate release source:	
5b. Type of downstream valve used to initially isolate release source:	
5c. Length of segment isolated between valves (ft):	
5d. Is the pipeline configured to accommodate internal inspection tools?	
- If No, Which physical features limit tool accommodation? (select all that apply)	
- Changes in line pipe diameter	
- Presence of unsuitable mainline valves	
- Tight or mitered pipe bends	
- Other passage restrictions (i.e. unbarred tee's, projecting instrumentation, etc.)	
- Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tools)	
- Other -	
- If Other, Describe:	
5e. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run?	
- If Yes, Which operational factors complicate execution? (select all that apply)	



- Excessive debris or scale, wax, or other wall buildup	
- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other -	
- If Other, Describe:	
5f. Function of pipeline system:	> 20% SMYS Regulated Trunkline/Transmission
6. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Accident?	Yes
If Yes -	
6a. Was it operating at the time of the Accident?	Yes
6b. Was it fully functional at the time of the Accident?	Yes
6c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	No
6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	No
7. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	No
- If Yes:	
7a. Was it operating at the time of the Accident?	
7b. Was it fully functional at the time of the Accident?	
7c. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	
7d. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	
8. How was the Accident initially identified for the Operator?	Local Operating Personnel, including contractors
- If Other, Specify:	
8a. If "Controller", "Local Operating Personnel", including contractors", "Air Patrol", or "Guard Patrol by Operator or its contractor" is selected in Question 8, specify the following:	Operator employee
9. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Accident?	No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the Operator did not investigate)
- If No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the operator did not investigate)	There are no instruments on the suction piping at this facility that would trigger an alarm or an alert for low flow, low pressure, high flow or high pressure.
- If Yes, specify investigation result(s): (select all that apply)	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
- Investigation did NOT review work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
Provide an explanation for why not:	
- Investigation identified no control room issues	
- Investigation identified no controller issues	
- Investigation identified incorrect controller action or controller error	
- Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response	
- Investigation identified incorrect procedures	
- Investigation identified incorrect control room equipment operation	
- Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response	
- Investigation identified areas other than those above:	
Describe:	
<b>PART F - DRUG &amp; ALCOHOL TESTING INFORMATION</b>	
1. As a result of this Accident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
1a. Specify how many were tested:	



1b. Specify how many failed:	
2. As a result of this Accident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
2a. Specify how many were tested:	
2b. Specify how many failed:	
<b>PART G – APPARENT CAUSE</b>	
<i>Select only one box from PART G in shaded column on left representing the APPARENT Cause of the Accident, and answer the questions on the right. Describe secondary, contributing or root causes of the Accident in the narrative (PART H).</i>	
<b>Apparent Cause:</b>	G1 - Corrosion Failure
<b>G1 - Corrosion Failure</b> - only one sub-cause can be picked from shaded left-hand column	
<b>External Corrosion:</b>	
<b>Internal Corrosion:</b>	Yes
<b>- If External Corrosion:</b>	
1. Results of visual examination:	
- If Other, Describe:	
2. Type of corrosion: (select all that apply)	
- Galvanic	
- Atmospheric	
- Stray Current	
- Microbiological	
- Selective Seam	
- Other:	
- If Other, Describe:	
3. The type(s) of corrosion selected in Question 2 is based on the following: (select all that apply)	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
4. Was the failed item buried under the ground?	
- If Yes :	
<input type="checkbox"/> 4a. Was failed item considered to be under cathodic protection at the time of the Accident?	
If Yes - Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the Accident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the Accident?	
If "Yes, CP Annual Survey" – Most recent year conducted:	
If "Yes, Close Interval Survey" – Most recent year conducted:	
If "Yes, Other CP Survey" – Most recent year conducted:	
- If No:	
4d. Was the failed item externally coated or painted?	
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	
<b>- If Internal Corrosion:</b>	
6. Results of visual examination:	Localized Pitting
- Other:	
7. Type of corrosion (select all that apply): -	
- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	Yes
- Erosion	
- Other:	
- If Other, Describe:	
8. The cause(s) of corrosion selected in Question 7 is based on the following (select all that apply): -	
- Field examination	Yes
- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
9. Location of corrosion (select all that apply): -	
- Low point in pipe	
- Elbow	

- Other:	Yes
- If Other, Describe:	suction pipeline strainer
10. Was the commodity treated with corrosion inhibitors or biocides?	Yes
11. Was the interior coated or lined with protective coating?	No
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	Not applicable - Not mainline pipe
13. Were corrosion coupons routinely utilized?	Not applicable - Not mainline pipe
<b>Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Accident" (from PART C, Question 3) is Tank/Vessel.</b>	
14. List the year of the most recent inspections:	
14a. API Std 653 Out-of-Service Inspection	
- No Out-of-Service Inspection completed	
14b. API Std 653 In-Service Inspection	
- No In-Service Inspection completed	
<b>Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.</b>	
15. Has one or more internal inspection tool collected data at the point of the Accident?	
15a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage Tool	Most recent year:
- Ultrasonic	Most recent year:
- Geometry	Most recent year:
- Caliper	Most recent year:
- Crack	Most recent year:
- Hard Spot	Most recent year:
- Combination Tool	Most recent year:
- Transverse Field/Triaxial	Most recent year:
- Other	Most recent year:
Describe:	
16. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
If Yes -	Most recent year tested:
	Test pressure:
17. Has one or more Direct Assessment been conducted on this segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident::	Most recent year conducted:
- If Yes, but the point of the Accident was not identified as a dig site:	Most recent year conducted:
18. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
18a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
<b>G2 - Natural Force Damage - only one sub-cause can be picked from shaded left-handed column</b>	
Natural Force Damage - Sub-Cause:	
<b>- If Earth Movement, NOT due to Heavy Rains/Floods:</b>	



1. Specify:	
- If Other, Describe:	
<b>- If Heavy Rains/Floods:</b>	
2. Specify:	
- If Other, Describe:	
<b>- If Lightning:</b>	
3. Specify:	
<b>- If Temperature:</b>	
4. Specify:	
- If Other, Describe:	
<b>- If High Winds:</b>	
<b>- If Other Natural Force Damage:</b>	
5. Describe:	
<b>Complete the following if any Natural Force Damage sub-cause is selected.</b>	
6. Were the natural forces causing the Accident generated in conjunction with an extreme weather event?	
6a. If Yes, specify: (select all that apply)	
- Hurricane	
- Tropical Storm	
- Tornado	
- Other	
- If Other, Describe:	
<b>G3 - Excavation Damage - only one sub-cause can be picked from shaded left-hand column</b>	
<b>Excavation Damage – Sub-Cause:</b>	
<b>- If Excavation Damage by Operator (First Party):</b>	
<b>- If Excavation Damage by Operator's Contractor (Second Party):</b>	
<b>- If Excavation Damage by Third Party:</b>	
<b>- If Previous Damage due to Excavation Activity:</b>	
<b>Complete Questions 1-5 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.</b>	
1. Has one or more internal inspection tool collected data at the point of the Accident?	
1a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage	Most recent year conducted:
- Ultrasonic	Most recent year conducted:
- Geometry	Most recent year conducted:
- Caliper	Most recent year conducted:
- Crack	Most recent year conducted:
- Hard Spot	Most recent year conducted:
- Combination Tool	Most recent year conducted:
- Transverse Field/Triaxial	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
2. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
3. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	
Most recent year tested:	
Test pressure (psig):	
4. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	
Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site:	



Most recent year conducted:	
5. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
5a. If Yes, for each examination, conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
<b>Complete the following if Excavation Damage by Third Party is selected as the sub-cause.</b>	
6. Did the operator get prior notification of the excavation activity?	
6a. If Yes, Notification received from: (select all that apply) -	
- One-Call System	
- Excavator	
- Contractor	
- Landowner	
<b>Complete the following mandatory CGA-DIRT Program questions if any Excavation Damage sub-cause is selected.</b>	
7. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?	
8. Right-of-Way where event occurred: (select all that apply) -	
- Public	
- If "Public", Specify:	
- Private	
- If "Private", Specify:	
- Pipeline Property/Easement	
- Power/Transmission Line	
- Railroad	
- Dedicated Public Utility Easement	
- Federal Land	
- Data not collected	
- Unknown/Other	
9. Type of excavator:	
10. Type of excavation equipment:	
11. Type of work performed:	
12. Was the One-Call Center notified?	
12a. If Yes, specify ticket number:	
12b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified:	
13. Type of Locator:	
14. Were facility locate marks visible in the area of excavation?	
15. Were facilities marked correctly?	
16. Did the damage cause an interruption in service?	
16a. If Yes, specify duration of the interruption (hours)	
17. Description of the CGA-DIRT Root Cause (select only the one predominant first level CGA-DIRT Root Cause and then, where available as a choice, the one predominant second level CGA-DIRT Root Cause as well):	
Root Cause:	
- If One-Call Notification Practices Not Sufficient, specify:	
- If Locating Practices Not Sufficient, specify:	
- If Excavation Practices Not Sufficient, specify:	
- If Other/None of the Above, explain:	
<b>G4 - Other Outside Force Damage - only one sub-cause can be selected from the shaded left-hand column</b>	
<b>Other Outside Force Damage - Sub-Cause:</b>	
<b>- If Nearby Industrial, Man-made, or Other Fire/Explosion as Primary Cause of Incident:</b>	
<b>- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation:</b>	
1. Vehicle/Equipment operated by:	
<b>- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost</b>	

<b>Their Mooring:</b>	
2. Select one or more of the following IF an extreme weather event was a factor:	
- Hurricane	
- Tropical Storm	
- Tornado	
- Heavy Rains/Flood	
- Other	
- If Other, Describe:	
<b>- If Routine or Normal Fishing or Other Maritime Activity NOT Engaged in Excavation:</b>	
<b>- If Electrical Arcing from Other Equipment or Facility:</b>	
<b>- If Previous Mechanical Damage NOT Related to Excavation:</b>	
<b>Complete Questions 3-7 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.</b>	
3. Has one or more internal inspection tool collected data at the point of the Accident?	
3a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	Most recent year conducted:
- Ultrasonic	Most recent year conducted:
- Geometry	Most recent year conducted:
- Caliper	Most recent year conducted:
- Crack	Most recent year conducted:
- Hard Spot	Most recent year conducted:
- Combination Tool	Most recent year conducted:
- Transverse Field/Triaxial	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
4. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
5. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	
Most recent year tested:	
Test pressure (psig):	
6. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	
Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site:	
Most recent year conducted:	
7. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
7a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
<b>- If Intentional Damage:</b>	
8. Specify:	
- If Other, Describe:	
<b>- If Other Outside Force Damage:</b>	



9. Describe:	
<b>G5 - Material Failure of Pipe or Weld</b> - only one sub-cause can be selected from the shaded left-hand column	
<b>Use this section to report material failures ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is "Pipe" or "Weld."</b>	
<b>Material Failure of Pipe or Weld – Sub-Cause:</b>	
1. The sub-cause selected below is based on the following: <i>(select all that apply)</i>	
- Field Examination	
- Determined by Metallurgical Analysis	
- Other Analysis	
- If "Other Analysis", Describe:	
- Sub-cause is Tentative or Suspected; Still Under Investigation (Supplemental Report required)	
<b>- If Construction, Installation, or Fabrication-related:</b>	
2. List contributing factors: <i>(select all that apply)</i>	
- Fatigue or Vibration-related	
	Specify:
	- If Other, Describe:
- Mechanical Stress:	
- Other	
	- If Other, Describe:
<b>- If Original Manufacturing-related (NOT girth weld or other welds formed in the field):</b>	
2. List contributing factors: <i>(select all that apply)</i>	
- Fatigue or Vibration-related:	
	Specify:
	- If Other, Describe:
- Mechanical Stress:	
- Other	
	- If Other, Describe:
<b>- If Environmental Cracking-related:</b>	
3. Specify:	
- Other - Describe:	
<b>Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.</b>	
4. Additional factors: <i>(select all that apply)</i> :	
- Dent	
- Gouge	
- Pipe Bend	
- Arc Burn	
- Crack	
- Lack of Fusion	
- Lamination	
- Buckle	
- Wrinkle	
- Misalignment	
- Burnt Steel	
- Other:	
	- If Other, Describe:
5. Has one or more internal inspection tool collected data at the point of the Accident?	
5a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	Most recent year run:
- Ultrasonic	Most recent year run:
- Geometry	Most recent year run:
- Caliper	Most recent year run:
- Crack	Most recent year run:
- Hard Spot	Most recent year run:
- Combination Tool	Most recent year run:
- Transverse Field/Triaxial	Most recent year run:
- Other	Most recent year run:



Most recent year run:	
Describe:	
6. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	
Most recent year tested:	
Test pressure (psig):	
7. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident -	
Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site -	
Most recent year conducted:	
8. Has one or more non-destructive examination(s) been conducted at the point of the Accident since January 1, 2002?	
8a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted: -	
- Radiography	
Most recent year conducted:	
- Guided Wave Ultrasonic	
Most recent year conducted:	
- Handheld Ultrasonic Tool	
Most recent year conducted:	
- Wet Magnetic Particle Test	
Most recent year conducted:	
- Dry Magnetic Particle Test	
Most recent year conducted:	
- Other	
Most recent year conducted:	
Describe:	
<b>G6 – Equipment Failure</b> - only one <b>sub-cause</b> can be selected from the shaded left-hand column	
<b>Equipment Failure – Sub-Cause:</b>	
<b>- If Malfunction of Control/Relief Equipment:</b>	
1. Specify: <i>(select all that apply)</i> -	
- Control Valve	
- Instrumentation	
- SCADA	
- Communications	
- Block Valve	
- Check Valve	
- Relief Valve	
- Power Failure	
- Stopple/Control Fitting	
- ESD System Failure	
- Other	
- If Other – Describe:	
<b>- If Pump or Pump-related Equipment:</b>	
2. Specify:	
- If Other – Describe:	
<b>- If Threaded Connection/Coupling Failure:</b>	
3. Specify:	
- If Other – Describe:	
<b>- If Non-threaded Connection Failure:</b>	
4. Specify:	
- If Other – Describe:	
<b>- If Defective or Loose Tubing or Fitting:</b>	
<b>- If Failure of Equipment Body (except Pump), Tank Plate, or other Material:</b>	
<b>- If Other Equipment Failure:</b>	
5. Describe:	
<b>Complete the following if any Equipment Failure sub-cause is selected.</b>	
6. Additional factors that contributed to the equipment failure: <i>(select all that apply)</i>	
- Excessive vibration	
- Overpressurization	
- No support or loss of support	

- Manufacturing defect	
- Loss of electricity	
- Improper installation	
- Mismatched items (different manufacturer for tubing and tubing fittings)	
- Dissimilar metals	
- Breakdown of soft goods due to compatibility issues with transported commodity	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Other	
- If Other, Describe:	
<b>G7 - Incorrect Operation</b> - only one <b>sub-cause</b> can be selected from the shaded left-hand column	
<b>Incorrect Operation – Sub-Cause:</b>	
<b>Damage by Operator or Operator's Contractor NOT Related to Excavation and NOT due to Motorized Vehicle/Equipment Damage</b>	No
<b>Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow</b>	No
1. Specify:	
- If Other, Describe:	
<b>Valve Left or Placed in Wrong Position, but NOT Resulting in a Tank, Vessel, or Sump/Separator Overflow or Facility Overpressure</b>	No
<b>Pipeline or Equipment Overpressured</b>	No
<b>Equipment Not Installed Properly</b>	No
<b>Wrong Equipment Specified or Installed</b>	No
<b>Other Incorrect Operation</b>	No
2. Describe:	
<b>Complete the following if any Incorrect Operation sub-cause is selected.</b>	
3. Was this Accident related to <i>(select all that apply)</i> : -	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	
5. Was the task(s) that led to the Accident identified as a covered task in your Operator Qualification Program?	
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	
<b>G8 - Other Accident Cause</b> - only one <b>sub-cause</b> can be selected from the shaded left-hand column	
<b>Other Accident Cause – Sub-Cause:</b>	
<b>- If Miscellaneous:</b>	
1. Describe:	
<b>- If Unknown:</b>	
2. Specify:	
<b>PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT</b>	
Metallurgical analysis by Anderson & Associates, Houston, TX indicates internal corrosion caused by organic acid attack. Reference report dated June 5, 2013 by Stephen C. Anderson, Metallurgist.	

**File Full Name**

20130405164427\_PHMSA Form 7000NarrativeMagSta2013.pdf

**PART I - PREPARER AND AUTHORIZED SIGNATURE**

Preparer's Name	Glenn Green
Preparer's Title	Maintenance Engineering Superintendent
Preparer's Telephone Number	870-864-1372
Preparer's E-mail Address	glenn.green@lionoil.com
Preparer's Facsimile Number	870-864-1341
Authorized Signature's Name	John H. Warren
Authorized Signature Title	VP of Lion Oil Trading Transportation Inc.
Authorized Signature Telephone Number	870-864-1451
Authorized Signature Email	john.warren@lionoil.com
Date	06/17/2013



Pipeline & Hazardous  
Materials Safety  
Administration

(Version 4.0.0 PROD)

HMIS-&gt;INCIDENTS-&gt;TELEPHONICS

Rules of Behavior

Home

Logout

Menu

[\[Return to Search\]](#)

NRC Number: 1040525  
Call Date: 03/09/2013 Call Time: 12:01:43

**Caller Information**

First Name: GLENN Last Name: GREEN  
Company Name: LION OIL TRADING & TRANSPORTATION  
Address: 1001 SCHOOL ST.  
City: EL DORADO State: AR  
Country: USA Zip:   
Phone 1: 8703142848 Phone 2:   
Organization Type: PRIVA Is caller the spiller? ☒ Yes ☐ No ☐ No Response  
Confidential: ☒ Yes ☐ No ☐ No Response

**Discharger Information**

First Name: GLENN Last Name: GREEN  
Company Name: LION OIL TRADING & TRANSPORTATION  
Address: 1001 SCHOOL ST.  
City: EL DORADO State: AR  
Country: USA Zip:   
Phone 1: 8703142848 Phone 2:   
Organization Type: PRIVA

**Spill Information**

State: AR County: COLUMBIA  
Nearest City: MAGNOLIA Zip Code:   
Location

SEE LAT/LONG

Spill Date: 03/09/2013 (mm/dd/yyyy) Spill Time: 09:00:00 (24hh:mm:ss)  
DTG Type: <- Select DTG Type ->   
Incident Type: Fixed Facility Reported Incident Type: FIXED FACILITY

**Description**

CALLER REPORTED A LEAK FROM THE SUCTION SIDE OF A LINE BETWEEN A TANK AND A PUMP.

**Materials Involved**

Material / Chris Name	Chris Code	Total Qty.	Water Qty.
OIL: CRUDE	OIL	1500 BARREL(S)	0 UNKNOWN AMOUNT

Medium Type: &lt;- Select Medium Type -&gt;

Additional Medium Information:

LITTLE CORNIE WATERWAY

Injuries:

Fatalities:

Evacuations: ☐ Yes ☒ No ☐ Unknown No. of Evacuations:   
Damages: ☒ Yes ☐ No ☐ Unknown Damage Amount:   
Federal Agency Notified: ☐ Yes ☐ No ☒ Unknown State Agency Notified: ☐ Yes ☐ No ☒ Unknown  
Other Agency Notified: ☐ Yes ☐ No ☒ Unknown

Remedial Actions

VAC TRUCK USED, CLEAN UP UNDERWAY, MATERIAL CONTAINED

Additional InfoLatitudeDegrees:  Minutes:  Seconds:  Quadrant: LongitudeDegrees:  Minutes:  Seconds:  Quadrant: Distance from City: Direction: Section: Township: Range: Milepost: ☐ Rescinded Comments (max 250 characters)[Previous](#)

11..11 of 24

[Next](#)