Table 4									
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10001	8/1/2007	3 gallons	Styrene	Tank Farm	Flexible line connected to pilot plant styrene supply pump developed a pinhole leak.	Pinhole leak in flex line that was connected to the pilot plant M-1 pump.	All valves for flex line were closed immediately. Soil was excavated and disposed of off-site. Hose had been hydro tested in May of 2007. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU002999-FHRPRU002999	N/A
10002	8/2/2007	½ gallon	Styrene	Tank Farm	Pressure relief valve for building 4 styrene line was locked out for re-piping work related to a tank farm dike project. Ambient temperatures caused styrene in line to expand and create high pressure in the line. This resulted in styrene leaking from the flange on the outlet side of building 4 styrene pump A.	Leaking flange on high pressure styrene line.	The line was locked out and soil was excavated and disposed of off-site. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU002999-FHRPRU002999	N/A
10005	12/31/2008	2 ounces	Styrene	Building 4	While closing a styrene valve in building 4, an operator identified styrene dripping from a valve stem.	Equipment failure—leaking valve stem.	The valve was opened all the way to stop the leak. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003000-FHRPRU003010	N/A
28795	1/5/2009	4 ounces	Styrene	Building 4	An operator discovered a styrene leak on reactor 15 supply line valve. The valve and reactor system are located inside the production building.	Loose valve packing gland on reactor 15's styrene supply line valve.	A training session was held for maintenance personnel to review make-up requirements when installing reactor styrene supply line valves. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003245-FHRPRU003245	N/A
33188	9/11/2009	1 quart	Styrene	Tank Farm concrete containment	An employee discovered the styrene chiller heat-exchanger in the tank farm had a gasket leak and approximately 1 quart of styrene leaked onto the tank farm concrete containment.	Styrene chiller heat exchanger gasket leak.	The inlet/outlet valves on the heat-exchanger were immediately closed. An operator placed a drip-pan under the leak and used absorbents to clean the area. The cleanup materials were placed into a waste drum. The gasket on the heat exchanger was repaired. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003251-FHRPRU003251	N/A
34163	10/31/2009	1/2 cup	Styrene	Building 4	An operator discovered styrene leaking from a flange on reactor 17 in Building 4. Approximately 1/2 cup leaked onto the floor.	Flange leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003252-FHRPRU003252	N/A

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28087	2/9/2011	< 32 ounces	Styrene	Building 4	An operator discovered styrene dripping from the reactor 15 automatic valve while pumping.	Valve leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003271-FHRPRU003271	N/A
53832	9/27/2011	50 gallons	Styrene	Tank Farm concrete containment	An operator discovered styrene was being released from the circulating pump located within the facility's tank farm.	Failed filter vessel lid gasket / Equipment Failure.	The leaking pump along with the associated valves were immediately shutoff to mitigate the spill. Outside contractor services were utilized to recover the spilled styrene (mixed with the storm water runoff) into a vac-truck. The recovered material was shipped off-site for appropriate disposal. A new styrene filtration vessel, gaskets, seals, and system relief valve were installed.	FHRPRU003286-FHRPRU003292	Yes
56043	11/20/2011	1 ounce	Styrene	Tank Farm concrete containment	An operator discovered styrene was dripping from a flange on the technical development styrene supply pump in the tank farm. Approximately 1 ounce of styrene was discovered under the pump pad in the tank farm.	Flange leak.	Absorbent pads were placed under the pump and the equipment was locked out. The pump gasket was replaced, and the leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003293-FHRPRU003293	N/A
68412	10/12/2012	< 32 ounces	Styrene	Tank farm concrete containment	A maintenance technician identified a styrene leak on the building 4 styrene supply pump in the tank farm. The leak was coming from a pump gauge.	Gasket leak.	The pump was isolated, and a containment tray and absorbent pads were placed underneath the pump. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003297-FHRPRU003297	N/A
70546	12/9/2012	< 32 ounces	Styrene	Building 4	An operator identified styrene leaking out of a reactor 17 styrene supply valve packing.	Valve leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003301-FHRPRU003301	N/A
71407	1/2/2013	< 32 ounces	Styrene	Building 4	While pumping styrene into reactor 14, an operator identified styrene leaking out of a coupling near the styrene addition auto valve.	Valve coupling leak.	Styrene addition to reactor 14 was put on hold. Absorbent pads were placed underneath the leak. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003302-FHRPRU003302	N/A
72072	1/18/2013	< 32 ounces	Styrene	Building 4	An operator discovered styrene dripping from a valve above reactor 15's catalyst tank.	Valve leak.	The valve was closed, and the leak stopped. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003309-FHRPRU003309	N/A

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75623	2/13/2013	< 32 ounces	Styrene	Building 4	An operator discovered the packing on reactor 14's manual styrene addition valve was dripping styrene.	Packing leak.	The operator opened the valve all the way and the drip stopped. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003310-FHRPRU003310	N/A
74831	4/4/2013	< 32 ounces	Styrene	Building 4	An operator discovered the packing on reactor 17's manual styrene addition valve was dripping styrene.	Packing leak.	The operator opened the valve all the way and the drip stopped. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003312-FHRPRU003312	N/A
76475	5/20/2013	< 32 ounces	Styrene	Building 4	An operator observed a styrene leak coming from the building 4 styrene supply line.	Flange leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003497-FHRPRU003497	N/A
80268	8/20/2013	< 32 ounces	Styrene	Tank farm concrete containment	An operator observed a styrene leak on styrene tank 200's manual valve handle. The leak rate was approximately 1 drip every 5 to 7 minutes.	Valve leak.	The valve was closed, and a drip pan was placed underneath the leak. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003498-FHRPRU003498	N/A
84852	12/7/2013	< 32 ounces	Styrene	Building 4	An operator discovered a styrene leak on reactor 17's manual styrene addition valve.	Valve leak.	An upstream valve was closed and locked-out. The valve was repaired. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003499-FHRPRU003499	N/A
85463	12/24/2013	< 32 ounces	Styrene	Building 4	An operator discovered a flange leak on reactor 14's manual styrene addition valve.	Flange leak.	The operator opened the valve all the way and the drip stopped. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003500-FHRPRU003500	N/A
85559	12/29/2013	< 32 ounces	Styrene	Building 4	An operator discovered a packing leak on reactor 16's manual styrene addition valve.	Packing leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003501-FHRPRU003501	N/A
85690	1/2/2014	< 32 ounces	Styrene	Building 4	An operator discovered a packing leak on reactor 18's manual styrene addition valve.	Packing leak.	The leak was repaired in accordance with FHR's LDAR program requirements. Absorbent pads were used to catch drips.	FHRPRU003502-FHRPRU003502	N/A
86179	1/5/2014	< 32 ounces	Styrene	Building 4	An operator discovered a styrene leak on reactor 18's manual styrene addition valve.	Valve leak.	An upstream valve was closed. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003503-FHRPRU003503	N/A
50658	2/4/2014	< 32 ounces	Styrene	Tank Farm	An operator discovered styrene leaking from a stripper pump head.	Gasket leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003504-FHRPRU003504	N/A
51435	3/8/2014	< 32 ounces	Styrene	Building 4	An operator discovered a styrene leak on a flange below a manual valve.	Flange leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003505-FHRPRU003505	N/A
52042	4/2/2014	< 32 ounces	Styrene	TD Lab	An operator discovered a styrene leak from a flange on the styrene filter.	Flange leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU003506-FHRPRU003506	N/A
52957	5/26/2014	< 32 ounces	Styrene	Building 4	An operator discovered a styrene drip from a threaded connection on the reactor 16 sample line.	Connector leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU004166-FHRPRU004166	N/A

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58870	2/26/2015	< 32 ounces	Styrene	Building 4	An operator discovered styrene leaking from a valve stem while pumping to reactor 16.	Valve leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU004283-FHRPRU004283	N/A
122891	4/18/2016	< 32 ounces	Styrene	Building 4	An electrician discovered a styrene leak from a flange below a pressure safety valve.	Flange leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU004285-FHRPRU004285	N/A
68321	4/26/2016	< 32 ounces	Styrene	Tank Farm	An operator discovered styrene dripping from a swivel connection on the barge unloading arm.	Gasket leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU004286-FHRPRU004287	N/A
127110	7/25/2016	< 32 ounces	Styrene	Building 4	An operator discovered styrene dripping from an automatic valve stem.	Valve leak.	Secondary containment was placed beneath the leak. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU004291-FHRPRU004291	N/A
70196	8/8/2016	< 32 ounces	Styrene	TD Lab	An operator discovered a styrene automatic valve stem had developed a drip.	Valve leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU004292-FHRPRU004292	N/A
134187	1/8/2017	< 32 ounces	Styrene	Building 4	An operator discovered styrene dripping from Reactor 15's automatic valve packing stem.	Valve leak.	Absorbent pads placed beneath valve. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU004298-FHRPRU004298	N/A
69823	11/27/2017	< 32 ounces	Styrene	Tank Farm	An operator discovered styrene dripping from styrene tank 200 inlet fire valve stem.	Valve leak.	Absorbent pads placed beneath valve. The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU004353-FHRPRU004353	N/A
84950	1/21/2019	< 32 ounces	Styrene	Tank Farm	An operator discovered styrene dripping above a supply pump from a flange.	Flange leak.	The leak was repaired in accordance with FHR's LDAR program requirements.	FHRPRU004412-FHRPRU004412	N/A