

**Supplemental Environmental Project
Completion Report**

May 29, 2020

Certification Statements

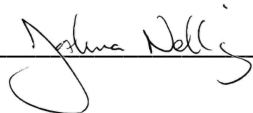
Pursuant to Section 83.b., I certify the SEP has been fully implemented pursuant to the provisions of this CAFO.

Please refer to Appendix A, which contains the itemized final costs and copies of receipts for all claimed expenditures, totaling \$345,557.35, which exceeds the required Two Hundred and Seventy-Five Thousand Dollars (\$275,000).

Pursuant to Section 83.c., I certify that TPC has not, and will not, deduct the SEP from the Company's income tax.

Pursuant to Section 85:

"I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all Appendices, and that based on my inquiry of those individuals immediately responsible for obtaining information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment."

Signed:  _____ Date: May 29, 2020

Description of the SEP

TPC Group LLC (TPC) entered into a Consent Agreement and Final Order (Order) with the USEPA to establish a real-time air quality monitoring network at the facility in Port Neches, Texas as part of a Supplemental Environmental Project (SEP).

The project is a two-pronged approach to monitor and notify TPC of potential off-site impacts, have the company respond and document actions taken to reduce the potential impacts. When any investigation indicates the potential source of the >25 ppb-v concentrations may be located on the PNO site, TPC posts the information on a specified public website by the 15th of the following month. The posting includes information on the location of the source and the corrective actions taken or reason for inaction.

Monitoring

The air monitoring program is structured to comply with the provisions of the Order by providing and recording information on the levels of 1,3-butadiene at four locations around the facility fence line. Alerts have been established to notify TPC potential off-site impacts of releases from the facility, specifically when the concentration level exceeds 25 ppb-v. Each of the monitoring stations is equipped with a gas chromatograph to measure concentrations of 1,3-butadiene. Two of the stations (#2 and #6) are equipped to monitor and record wind direction, wind speed, wind gust, ambient temperature, and barometric pressure. They also log vector and scalar hourly averages of the wind parameters, and calculate the standard deviation of the wind direction (sigma theta).

The monitoring equipment is operated in temperature controlled shelters located near the four corners of the site as specified in the Order. Please refer to Figure 1, a map of the site showing the locations of the monitoring equipment.

Response

Alerts were established to notify TPC personnel when a monitor detects two readings of twenty-five ppb or more within sixty minutes (1 hour). TPC implemented Fence Line Monitoring Response Procedure to establish the expectations for response to the alerts and document the findings and other relevant information as provided in Appendix F of the CAFO. Figure 2 is a flowchart that provides an overview of the procedure.

Upon receiving the alert, the Control Room Operator gathers meteorological, pollutant concentration and location data from the alarming fence line site. This data is used to help identify the potential upwind areas to be investigated to locate the potential source of the emissions. This information is also passed on to the Shift Supervisor and Outside Operators. The Outside Operators begin field surveys and inspections using audio, visual and olfactory observations and may use portable instruments/monitors to track down the location of the emissions.

The Shift Supervisor also notifies the environmental department of the event. As needed, the Shift Supervisor assigns additional personnel to assist in the identification of the emissions source. Operations personnel document their findings per the procedure.

Once the emissions source is identified, Operations personnel initiate measures to mitigate the emissions release as soon as practical. These measures include isolating the emissions source to end the release and/or contacting maintenance to make necessary repairs. Once the release has been stopped, the Shift Supervisor and Environmental Engineer work together to finalize the reports for completeness to close out the event. If the source of the emissions is not located the escalation process is initiated and followed until the source is identified and/or emissions have ended.

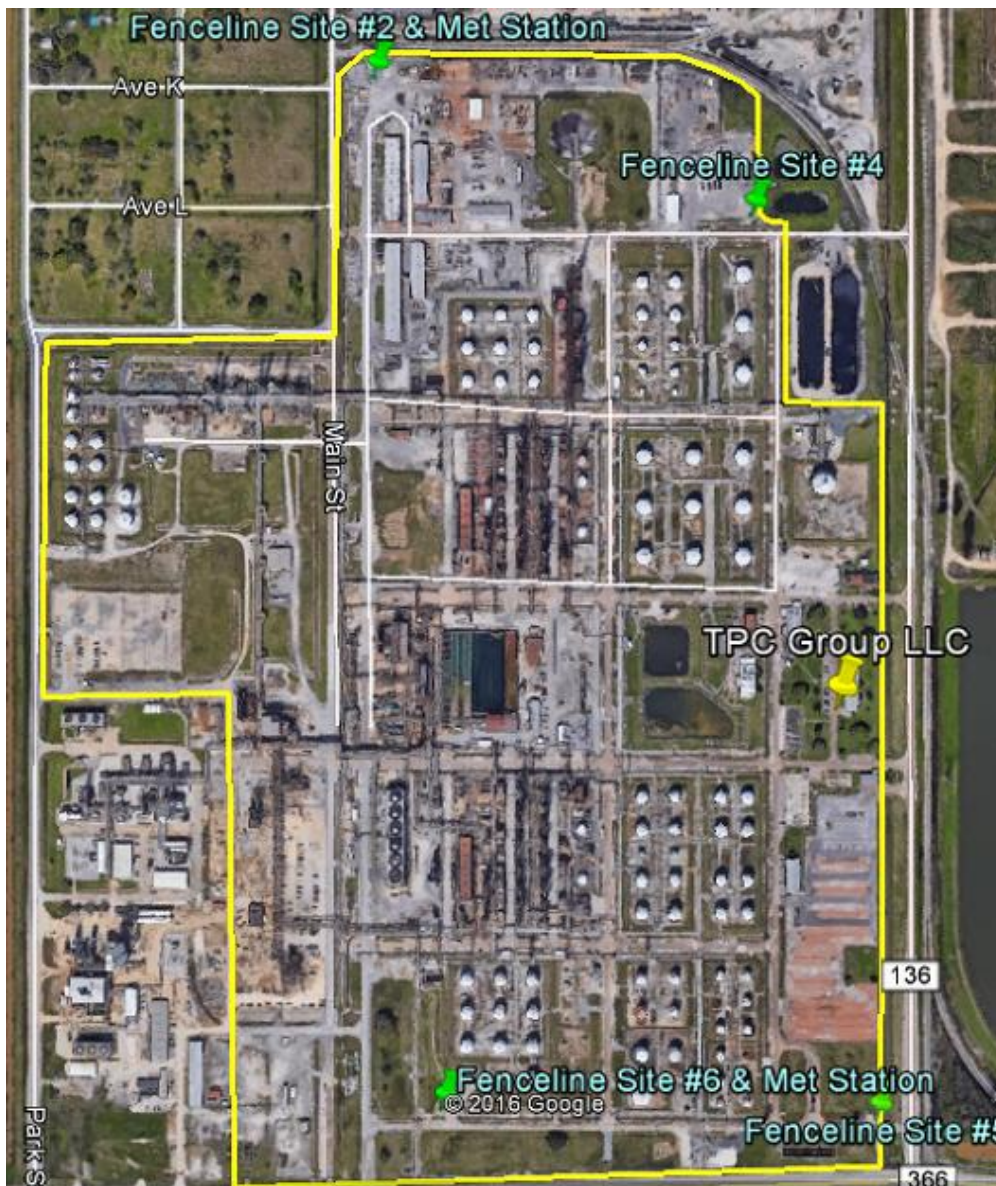
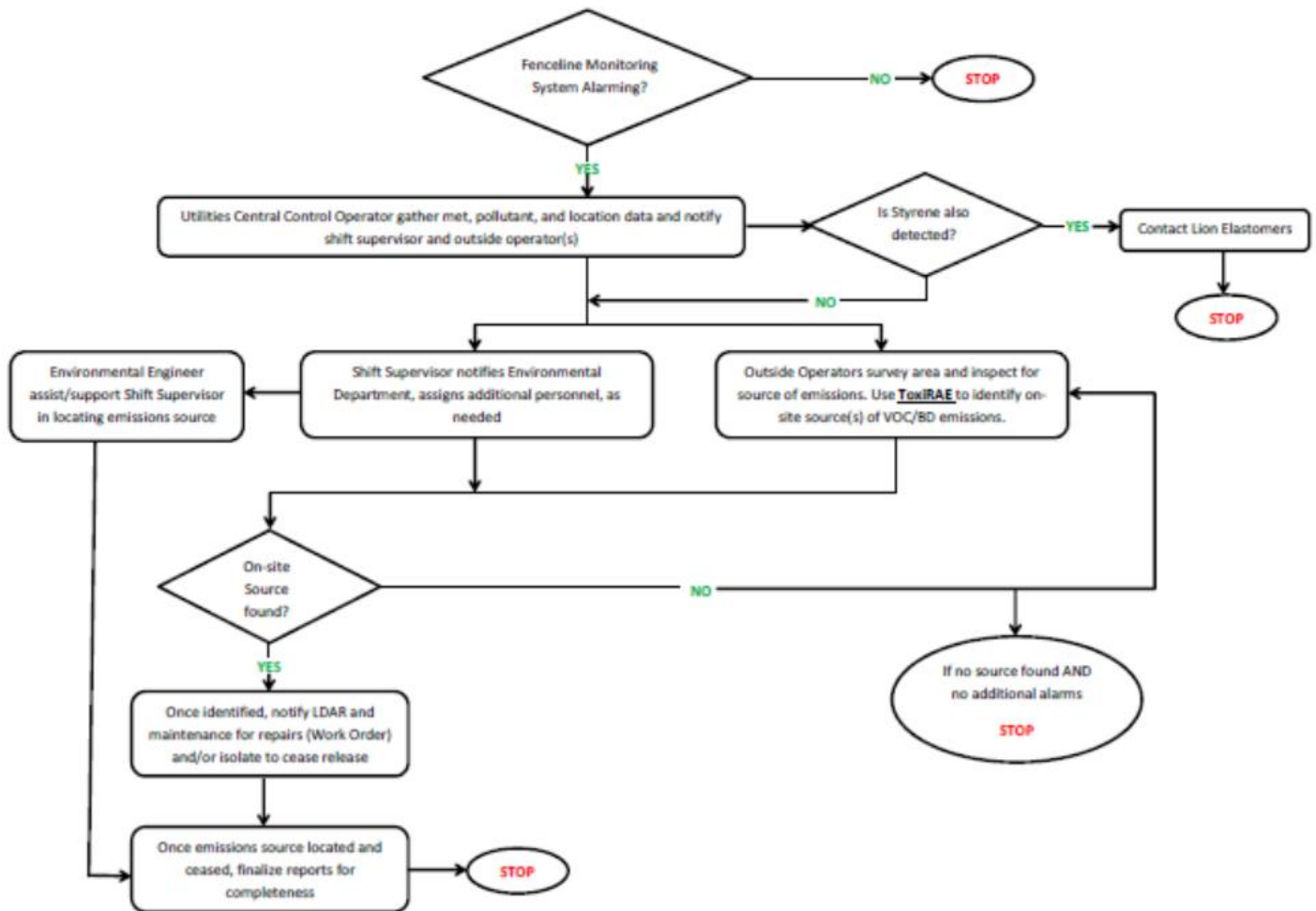


Figure 1

TPC Group LLC, Port Neches Operations
 Fenceline Monitoring Response Procedure Flowchart



January 12, 2018

Figure 2

Instrumentation

The primary instrument used by operations to investigate the alert was the ToxiRae meters, which are capable of detecting 1,3, Butadiene in parts per billion (ppb) concentrations. The meters were calibrated every thirty days consistent with the manufacture's recommendation by 24 HR Safety. The meters provided reminders to have the meter calibrated.

Handheld PID meters were calibrated as by the TPC Instrument Technicians per manufacture's recommendations, as the meters, upon startup, indicate when the next calibration is due. Plant personnel also conducted bump tests as signaled as part of the meter's routine operation.

The concentration of Butadiene was measured at the source, when possible by the Fugitive Monitoring (LDAR) technicians utilizing their calibrated equipment, which are operated in compliance with the applicable EPA methodologies for monitoring fugitive components.

Infrared Gas Imaging Camera was onsite and available for use to assist in locating the potential source of the emissions. If it was utilized during the search, its use was indicated on the Posting Form and information regarding its use

Reduction Measures

Upon discovery of a potential source of the emissions located on the PNO site, operating personnel takes action to address the potential source. There are three types of emission sources:

- LDAR- the source was a fugitive emissions component. The LDAR technicians monitors it, if possible, to quantify the leak. It is added to the database as a leaking component. The first attempt must be made by plant personnel within 5 days and the final repair completed within 15 days. LDAR emissions, when managed through the LDAR Program are considered compliant unless they are determined to be an emissions event. Large leaks constituting an emissions event, would have been corrected as quickly as possible as plant personnel responded to the event. Such events are considered to be permit/regulatory violations. See unauthorized emissions below.
- Permitted activities such as MSS activities. Routine MSS activities are routinely performed to maintain proper operation. Potential emissions are minimized during these activities by Operations personnel following the procedures, which are written to be protective of human health and the environment. Additionally, site personnel may take additional actions to minimize emissions. For example: plant personnel may spray equipment with water spray to minimize emissions.
- Unauthorized emissions- if the discovered condition does not represent an authorized source or activity, it is addressed as an emissions event, with site personnel taking corrective actions to mitigate the event. These events are reported as required and entered as an event in the TPC Database for tracking non-conformances. Events that generate unauthorized emissions are considered non-compliant. These records are reviewed and incorporated into the company and site Key Performance Indicators (KPIs).

Benefits

The implementation of the program resulted in a higher awareness of the potential for off-site impacts. Alerts provided notification to operations personnel, to ensure they were aware of the readings. Fence line alerts and corrective actions were a standing agenda item in the daily morning meeting. Plant management reviewed the alerts, findings and corrective actions taken as well as the status of fugitive (LDAR) leaks to ensure priorities were placed on repairing any fugitive leaks that were identified as potential sources of alerts.

By responding to the alerts by conducting investigations, operations personnel have discovered and mitigated many leaks that otherwise could have had longer durations. This corresponds to a reduction in emissions compared to those that would have occurred without the fence line alert notifications. One event on, September 27, was a reportable event that was isolated and stopped quickly upon discovery. The duration of the event would have likely been longer if operations personnel had not received the alert.

Posting

When the investigation identifies a potential source located on the PNO site, a Fence Line Posting Form is completed. The information about the potential source, the duration of the event, the concentrations

measured by the fence line system during the event, meteorological data, a description of the investigation and corrective actions taken. The completed forms for each month were posted on the designated website by the 15th of the following month.

Appendix A contains copies of the forms posted during this project. The first page of the appendix provides a summary of the instances where a potential source was located on the PNO site, the Compliance Status Determination, information on the

Cost

Please refer to Appendix B, which contains the itemized final costs and copies of receipts for all claimed expenditures, totaling \$345,557.35, which exceeds the required Two Hundred and Seventy-Five Thousand Dollars (\$275,000).

APPENDIX A

Forms Posted on Website

Start Date/Time	End/ Date Time	Meter Readings if Used	Person Taking Readings	Description	Environmental Review	Compliance Status
4/5/2019 3:15AM	04/05/2019 04:45AM			Operators conducted an investigation of the wind bin area and identified a leak on section of piping on Tank 100.	Leaking valve at Tank 100 line	Not permit violation or violation of regulatory requirement, addressed using LDAR procedures
4/10/2019 04:36 AM	04/10/2019 04:51AM			Operators conducted an investigation of the wind bin area and identified an ice build-up on the vent line from Rack 3 Spot 3. Leak was at connection on Vent hose that was not in-use. 4/10/2019 4:53 PM	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
4/10/2019 4:53 PM	4/10/2019 5:38 PM			Operators conducted an investigation of the wind bin area and identified a LDAR leak on a threaded plug on the N4D7 overhead pump.	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
4/18/2019 3:49 PM	4/18/2019 11:04am			This was an intermittent event. Operators conducted an investigation of the wind bin area and identified two sources of emissions. Operations identified a leak on exchanger S4E11A and a leak on the S4D4 tower bottoms control valve.	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
4/19/2019 13:00	4/19/2019	36 ppm in Blk 5; 302 in Blk 5 on 4/20	David Ray	Searched BLK05 & found flange leak on fig-8 blind on TK96 outside suction valve (LDAR tag H-0389A) Found UltraRAE reading of 36 ppm with 15 mph wind. Rechecked 4/20/19 am and reading 302 with 3 mph wind.	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
4/19/2019 5:49pm	4/19/2019 10:49pm	5000 ppm Blk 10		Operators conducted an investigation of the wind bin area and identified the source of the emissions was a known LDAR leak on exchanger S4E11A.	Found LDAR Leak and had them repaired by next day	Not a permit violation or violation of regulatory requirement.
4/20/2019 5:46pm	4/20/2019 6:46pm			Operators conducted an investigation of the wind bin area and didn't locate a specific source. At the time of	On-going activity, but was not identified as a	MSS procedures followed to minimize emissions. Not a permit violation or

Start Date/Time	End/ Date Time	Meter Readings if Used	Person Taking Readings	Description	Environmental Review	Compliance Status
				these samples, Operations was preparing tower N5D1 for maintenance. The fenceline also detected Styrene which is indicative of possible off-site impacts.	source. It was on-going 17:46 – 18:46	violation of regulatory requirement.
4/21/2019 12:01am	4/21/2019 3:01am			Operators conducted an investigation of the wind bin area and didn't locate a specific source. At the time of these samples, Operations was preparing tower N5D1 for maintenance. The fenceline also detected Styrene which is indicative of possible off-site impacts.	This was an activity that was ongoing, but not identified as a source. This is a routine process activity.	It was not a permit violation or violation of regulatory requirement. The operators minimized emissions by following procedures.
4/21/2019 4:16am	4/21/2019 5:15am	5000 ppm in Blk 8	Mark Loupe	Operators conducted an investigation of the wind bin area and Identified the filters on pump 6G6A.	It was an LDAR component leak on filter.	Not a permit violation or violation of regulatory requirement. Operations isolated the filters, to prepare for maintenance.
4/26/2019 12:08pm	4/26/2019 1:07pm			Operators conducted an investigation of the wind bin area and identified the source of the emissions was a known LDAR leak on tower S4D4.	This was an LDAR component leaking.	Not violation or violation of regulatory requirement, addressed using LDAR procedures.
5/3/2019 08:51	5/3/2019 15:05			MSS activities were being performed on valves on equipment located on the west side of Block 8	MSS activities being performed.	Not permit violation or violation of regulatory requirement. Operators minimized emissions by following MSS procedures and clearing equipment prior to opening to atmosphere.
5/9/2019 04:31	5/9/2019 04:31			There was an LDAR Leak that was being cleared to the flare for repair	This was an LDAR Leak Being cleared to the flare	Not a permit violation or violation of regulatory requirement. Operations prepared equipment for repair
5/16/2019 00:37	5/16/2019 3:23	112 ppm at the seal pot	Shane Woodruff	Seal Pot Leak was discovered and isolated for repairs	MSS activity. Pump was out of service.	Not a permit violation or violation of regulatory requirement. Reading

Start Date/Time	End/ Date Time	Meter Readings if Used	Person Taking Readings	Description	Environmental Review	Compliance Status
					This was LDAR Leak from seal pot	was low. Isolated pump and filled the seal pot with water to serve as water seal until pump repaired, including seal pot.
5/19/2019 06:16	5/19/2019 10:25	3-4 ppm in Blk 8t	Brent Stein	On the 19th, personnel discovered a leaking head gasket, which they isolated for repair. The elevated values continued, but no other sources were discovered.	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
5/25/2019 22:00	5/26/2019 00:00			On the 25th, personnel discovered a leak on a coalescer gasket, which they isolated for repair. The elevated values continued intermittently. Styrene concentrations were sporadic during this time.	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
5/27/2019 10:32	5/27/2019 00:00			On the 27th, personnel discovered a leak on a strainer head gasket, which they isolated for repair. The elevated values continued intermittently. Styrene concentrations were sporadic during this time	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement. Operations personnel isolated the equipment immediately and lowered pressure to minimize emissions.
6/1/9/2019 16:35	6/1/2019 23:20			The wind switched to within the windbin at approximately 18:30, with a high BD concentration. A filter bank was found to be leaking. It had been isolated previously, but a valve was leaking by, allowing the filter bank to emit VOC	This was an LDAR component leak	This was not a permit violation or violation of regulatory requirement. Operations personnel purged the equipment immediately to minimize emissions.
6/12/2019 21:30	6/12/2019 22:30			Operator found a leaking fitting in the rail loading area. The leak was stopped.	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
7/22/2019 13:20	7/21/2019 14:01			The fenceline monitor indicated a sharp increase in BD concentration	This was an MSS activity	It was not a permit violation or violation of regulatory requirement.

Start Date/Time	End/ Date Time	Meter Readings if Used	Person Taking Readings	Description	Environmental Review	Compliance Status
				beginning at 13:20 and lasting until 14:01, when it abruptly dropped to zero		The operators minimized emissions by following procedures.
7/25/2019 05:30	7/25/2019 07:00	320 ppm in Blk 9	S. M.	A seal on the pump 6G2S in Block 9. Operations shut the pump down, and freed it up for maintenance.	This was an LDAR component leak	This was not a permit violation or violation of regulatory requirement. Operations personnel purged the equipment immediately to minimize emissions.
8/5/2019 10:45	8/5/2019 11:50			The South flare was smoking. Monitoring indicated low Btu content	Opacity from the flare was a permit violation and was reported in the Title V deviation report.	Operations personnel took actions to minimize opacity. It is not known if the fence line alerts were associated with this opacity
8/9/2019 08:50 AM	8/9/2019 13:35 PM			While preparing equipment, 6G186, for MSS activities, operator noticed a leak from a bleeder valve.	This was an MSS activity. The equipment had been freed up (gas removed) and was waiting to be blinded.	This was not a permit violation. The equipment had been out of service awaiting blinding.
8/16/2019 16:20	8/16/2019 17:10			Train moving in area. Air Liquide s/d. They had a leak on nat gas component. TPC lowering to minimum rates, dynamic operating conditions	This was an activity that was occurring on the site during the time of the alert.	There was no event. The plant was being shutdown per procedure in response to the Air Liquide Shutdown.
08/19/2019 08:50	08/19/2019 10:20			Performing MSS on strainers and installing blinds	This was an MSS activity	It was not a permit violation or violation of regulatory requirement. The operators minimized emissions by following procedures.
8/27/2019 8:05 AM	8/27/2019 8:35 AM			MSS Activities to purge Exchanger Bundle to the flare and then pull it per procedure.	This was an MSS activity.	It was not a permit violation or violation of regulatory requirement. The operators minimized emissions by following procedures.

Start Date/Time	End/ Date Time	Meter Readings if Used	Person Taking Readings	Description	Environmental Review	Compliance Status
8/27/2019 13:05	8/28/2019 09:20			Changing wind caused the LDAR leak to impact three of the Sites. LDAR leak on a distillation tower. First attempts were not successful. TPC ____ determined the tower needed to be shutdown to make the repair. Air Liquide also shutdown due to boiler feedwater level.	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
8/29/2019 02:30	8/29/2019 04:00			Operations personnel discovered LDAR leak at S4D7 valve.	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
8/29/2019 07:05	8/29/2019 09:15			Cleaning a bundle at the bundle slab was an ongoing activity.	This was an MSS activity.	It was not a violation or violation of regulatory requirement. The operators minimized emissions by following procedures.
9/3/2019 18:20	9/4/2019 00:30			Operations personnel identified a potential source associated with a bundle cleaning project that was ongoing.	This was an MSS activity.	It was not a violation or violation of regulatory requirement. The operators minimized emissions by following procedures.
9/5/2019 01:35	9/5/2019 03:05			There was Maintenance activity associated with cleaning a bundle that was identified as a potential source on the TPC site.	This was an MSS activity.	It was not a violation or violation of regulatory requirement. The operators minimized emissions by following procedures.
9/5/2019 19:00	9/6/2019 06:35			While purging S2F8, Operations personnel discovered a leak at a sight glass. They continued to purge the equipment and repaired the leak. Additional readings attached.	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
9/12/2019 02:50	9/12/2019 05:20			Maintenance activities associated with cleaning a bundle may have been a	This was an MSS activity.	It was not a violation or violation of regulatory requirement. The

Start Date/Time	End/ Date Time	Meter Readings if Used	Person Taking Readings	Description	Environmental Review	Compliance Status
				potential source for the butadiene		operators minimized emissions by following procedures.
09/27/2019 05:35	09/27/2019 07:50			There was a Reportable Emissions event that occurred when a connection on a valve in BD service failed. The event was reported to the NRC and to agencies via STEERS	This was an RQ	It was a violation of the permit and other regulatory requirements. Reported to the agencies and on Title V deviation report.
10/3/2019 22:35	10/4/2019 04:45	20 ppm in 6	Chad Williams	Operations personnel notified LDAR contractors. No definitive source was identified, although leaking components were identified.	There was no source identified, but included in review because operation as and LDAR personnel found areas with 20 ppm readings.	
10/16/2019 11:20	10/16/2019 16:55			Maintenance activities were being conducted on an exchanger per procedure.	This was an MSS activity.	It was not a violation or violation of regulatory requirement. The operators minimized emissions by following procedures.
10/16/2019 20:20	10/16/2019 22:50			Maintenance activities were being conducted to clear a line back to a tank	This was an MSS activity.	It was not a violation or violation of regulatory requirement. The operators minimized emissions by following procedures.
10/17/2019 15:10	10/17/2019 21:25			Operations personnel identified LDAR leaks as the potential source	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures
10/22/2019 02:40	10/22/2019 19:10			Operations personnel identified the source of the elevated concentrations to be the head of an exchanger. This was treated consistent with the TPC LDAR program. Attempts were made to	This was an LDAR component leaking.	This was not a permit violation or violation of regulatory requirement, addressed using LDAR procedures

Start Date/Time	End/ Date Time	Meter Readings if Used	Person Taking Readings	Description	Environmental Review	Compliance Status
				repair it, but they were unsuccessful		

Final Report

Fenceline Response

Start Date & Time: 4/5/2019 03:15am

End Date & Time: 4/5/2019 04:45am

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	28	77 deg @ 8 mph
2	46	77 deg @ 10 mph
3	46	72 deg @ 9 mph
4	59	84 deg @ 8 mph
5	77	78 deg @ 10 mph
6	77	79 deg @ 7 mph
7	34	71 deg @ 5 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Operators conducted an investigation of the wind bin area and identified a leak on section of piping on Tank 100.

Actions Taken to Reduce Emissions: TPC personnel deinventoried the tank and put a Nitrogen blanket on the tank to stop the source of emissions. TPC brought in a third party to degas the tank to prepare for Maintenance activities.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 4/10/2019 4:36am

End Date & Time: 4/10/2019 4:51am

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	311	206 deg @ 4 mph
2	173	189 deg @ 4 mph
3		
4		

*Attach Additional pages of data if necessary

Potential Sources Identified: Operators conducted an investigation of the wind bin area and identified an ice build-up on the vent line from Rack 3 Spot 3. Leak was at connection on Vent hose that was not in-use.

Actions Taken to Reduce Emissions: Line was purged and pressure tested to ensure integrity. The loading spot was taken out of service until the o-ring on the vent hose can be replaced.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 4/10/2019 4:53pm

End Date & Time: 4/10/2019 5:38pm

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	63	200 deg @ 13 mph
2	62	209 deg @ 12 mph
3	28	208 deg @ 12 mph
4	41	200 deg @ 9 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Operators conducted an investigation of the wind bin area and identified a LDAR leak on a threaded plug on the N4D7 overhead pump.

Actions Taken to Reduce Emissions: The plug was replaced and the leak stopped.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 4/18/2019 3:49pm

End Date & Time: 4/18/2019 11:04am

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	57	313 deg @ 8 mph
2	42	311 deg @ 10 mph
3	50	310 deg @ 12 mph
4	56	303 deg @ 12 mph
5	49	316 deg @ 8 mph
6	33	329 deg @ 10 mph
7	25	335 deg @ 13 mph
8	64	335 deg @ 12 mph
9	44	301 deg @ 9 mph
10	59	309 deg @ 14 mph
11	45	342 deg @ 19 mph
12	63	313 deg @ 11 mph
13	37	297 deg @ 8 mph
14	47	285 deg @ 7 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: This was an intermittent event. Operators conducted an
investigation of the wind bin area and identified two sources of emissions. Operations
identified a leak on exchanger S4E11A and a leak on the S4D4 tower bottoms control valve.

Actions Taken to Reduce Emissions: Operations contacted the third-party LDAR technicians to
monitor the sources to be tracked as through the LDAR program. The two sources were
repaired within the timelines of the LDAR program.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 4/19/2019 5:49pm

End Date & Time: 4/19/2019 10:49pm

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	45	314 deg @ 17 mph
2	68	307 deg @ 16 mph
3	47	307 deg @ 11 mph
4	35	307 deg @ 13 mph
5	28	316 deg @ 8 mph
6	31	309 deg @ 11 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Operators conducted an investigation of the wind bin area and identified the source of the emissions was a known LDAR leak on exchanger S4E11A.

Actions Taken to Reduce Emissions: The source was repaired within the timelines of the LDAR program.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 4/20/2019 5:46pm

End Date & Time: 4/20/2019 6:46pm

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	163	230 deg @ 12 mph
2	45	226 deg @ 10 mph
3		
4		

*Attach Additional pages of data if necessary

Potential Sources Identified: Operators conducted an investigation of the wind bin area and
didn't locate a specific source. At the time of these samples, Operations was preparing tower
N5D1 for maintenance. The fenceline also detected Styrene which is indicative of possible
off-site impacts.

Actions Taken to Reduce Emissions: TPC followed Operational procedures and MSS permit
conditions to prepare the tower for maintenance.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 4/21/2019 12:01am

End Date & Time: 4/21/2019 3:01am

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	67	237 deg @ 4 mph
2	49	227 deg @ 4 mph
3	36	229 deg @ 4 mph
4	195	239 deg @ 5 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Operators conducted an investigation of the wind bin area and
didn't locate a specific source. At the time of these samples, Operations was preparing tower
N5D1 for maintenance. The fenceline also detected Styrene which is indicative of possible
off-site impacts.

Actions Taken to Reduce Emissions: TPC followed Operational procedures and MSS permit
conditions to prepare the tower for maintenance.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 4/21/2019 4:16am

End Date & Time: 4/21/2019 5:15am

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	34	227 deg @ 4 mph
2		
3		
4		

*Attach Additional pages of data if necessary

Potential Sources Identified: Operators conducted an investigation of the wind bin area and
Identified the filters on pump 6G6A.

Actions Taken to Reduce Emissions: TPC isolated the filters to prepare them for maintenance.
Maintenance replaced the gaskets and returned the equipment to Operations for service.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 4/26/2019 12:08pm

End Date & Time: 4/26/2019 1:07pm

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	45	314 deg @ 17 mph
2		
3		
4		

*Attach Additional pages of data if necessary

Potential Sources Identified: Operators conducted an investigation of the wind bin area and identified the source of the emissions was a known LDAR leak on tower S4D4.

Actions Taken to Reduce Emissions: The source was repaired within the timelines of the LDAR program.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 5/3/2019 08:51

End Date & Time: 5/3/2019 15:05

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	36	145° at 9.0 mph
2	42	145° at 9.0 mph
3	33	164° at 12 mph
4	44	144° at 10 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: MSS activities were being performed on valves on equipment located on the west side of Block 8

Actions Taken to Reduce Emissions: Operations followed MSS procedures, clearing equipment prior to opening it to atmosphere.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 5/9/2019 04:31

End Date & Time: 5/9/2019 12:15

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	37	210° at 10 mph
2	28	196° at 12 mph
3	47	202° at 9 mph
4	70	216° at 4 mph
5	38	198° at 9 mph
6	71	214° at 4 mph
7	43	191° at 9 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: There was an LDAR Leak that was being cleared to the flare for repair

Actions Taken to Reduce Emissions: Preparation for repair was underway

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 5/16/2019 00:37

End Date & Time: 5/16/2019 3:23

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	36	198° at 4 mph
2	46	187° at 3 mph
3	85	183° at 3 mph
4	31	182°, no wind speed indication

*Attach Additional pages of data if necessary

Potential Sources Identified: Seal Pot Leak was discovered and isolated for repairs

Actions Taken to Reduce Emissions: Service request was written, equipment was isolated for repairs and seal pot filled with water.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 5/19/2019 06:16

End Date & Time: 5/19/2019 10:25

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	40	201° at 9 mph
2	40	197° at 9 mph
3	49	206° 8 mph
4		

*Attach Additional pages of data if necessary

Potential Sources Identified: There was an extended period of time during which the Fenceline monitor indicated Bd concentration >25 ppb. During that time, operations personnel investigated to find the potential source. Much of the time it was believed to be from a neighboring industrial sediment pond off site. On the 19th, personnel discovered a leaking head gasket, which they isolated for repair. The elevated values continued, but no other sources were discovered. Styrene concentrations were sporadic during this time.

Actions Taken to Reduce Emissions: The pressure on the equipment was reduced and was prepared for repair.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 5/25/2019 22:00

End Date & Time: 5/26/2019 00:00

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	30	164° at 6 mph
2	328	169° at 6 mph
3	25	153° at 8 mph
4		

*Attach Additional pages of data if necessary

Potential Sources Identified: There was an extended period of time during which the Fenceline monitor indicated Bd concentration >25 ppb. During that time, operations personnel investigated to find the potential source. Much of the time it was believed to be from a neighboring industrial sediment pond off site. On the 25th, personnel discovered a leak on a coaleser gasket, which they isolated for repair. The elevated values continued intermittently. Styrene concentrations were sporadic during this time.

Actions Taken to Reduce Emissions: Repaired the coaleser

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 5/27/2019 10:32

End Date & Time: 5/27/2019 00:00

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	47	200° at 12 mph
2	45	217° at 11mph
3	47	183° at 12 mph
4	28	190° at 9 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: There was an extended period of time during which the Fenceline monitor indicated Bd concentration >25 ppb. During that time, operations personnel investigated to find the potential source. Much of the time it was believed to be from a neighboring industrial sediment pond off site. On the 27th, personnel discovered a leak on a strainer head gasket, which they isolated for repair. The elevated values continued intermittently. Styrene concentrations were sporadic during this time.

Actions Taken to Reduce Emissions: Switched tower service, repaired gasket

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 6/1/9/2019 16:35

End Date & Time: 6/1/2019 23:20

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	51	41 °at 6.0 mph
2	131	238° at 7.0 mph
3	167	193° at 6.0 mph
4	116	229° at 7 mph
5	88	234° at 6 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: The wind switched to within the windbin at approximately 18:30, with a high BD concentration. A filter bank was found to be leaking. It had been isolated previously, but a valve was leaking by, allowing the filter bank to emit VOC

Actions Taken to Reduce Emissions: The equipment was purged to the compressor until the isolation and repair could be performed.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒



Final Report Fenceline Response

Start Date & Time: 6/12/2019 21:30

End Date & Time: 6/12/2019 22:30

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	56	201° at 6 mph
2		
3		
4		

*Attach Additional pages of data if necessary

Potential Sources Identified: Operator found a leaking fitting in the rail loading area. The leak was stopped.

Actions Taken to Reduce Emissions: Stopped the leak when discovered.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 7/22/2019 13:20

End Date & Time: 7/21/2019 14:01

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	528	195.0° at 6.7 MPH
2	364	219.4 ° at 8.0 MPH
3	0	228° at 8.3 MPH
4		

*Attach Additional pages of data if necessary

Potential Sources Identified: The fenceline monitor indicated a sharp increase in BD concentration beginning at 13:20 and lasting until 14:01, when it abruptly dropped to zero

Actions Taken to Reduce Emissions: Investigated the event. Cleaned strainer per procedure and returned to service.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 8/5/2019 10:45

End Date & Time: 8/5/2019 11:50

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	69.9	243.2° at 5 mph
2	81	254.9° at 4 mph
3	17.2	269° at 5 mph
4	5	283.4° at 5 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: The South flare was smoking. Monitoring indicated low Btu content.

Actions Taken to Reduce Emissions: Cut back on some of the systems venting and added more steam, which eliminated the smoking.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☒ No ☐ Additional data sheet

Final Report, Fenceline Response (*Con't*)

	Concentration (ppbv)	Wind Direction & Speed (MPH)
5	3	247° at 4 mph
6	89.9	283.8° at 3.8 mph
7	108	222° at 3 mph
8	34.8	173.6° at 11 mph
9	18	198.3° at 7 mph
10		
11		
12		
13		
14		
15		

Final Report Fenceline Response

Start Date & Time: 8/9/2019 08:50 AM

End Date & Time: 8/9/2019 13:35 PM

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	1	225° at 6 mph
2	222	237° at 10 mph
3	29	229° at 8 mph
4	53	214° at 7 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: While preparing equipment, 6G186, for MSS activities, operator noticed a leak from a bleeder valve.

Actions Taken to Reduce Emissions: Operator immediately blocked it in valve.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☒ No ☐

Is there additional data attached? Yes ☒ No ☐ Additional fenceline data

Final Report, Fenceline Response (*Con't*)

	Concentration (ppbv)	Wind Direction & Speed (MPH)
5	56	247° at 9.0 mph
6	0	231° at 10.0 mph
7	64	203° at 9.0 mph
8	41	241° at 9.0 mph
9	34	224° at 10.1 mph
10	19	235° at 10.0 mph
11	24	214° at 8 mph
12	77	226° at 11 mph
13	15	249° at 8 mph
14	35	257° at 10.9 mph
15	20	254° at 7.9 mph
16	16	204° at 7 mph
17	37	241° at 6.2 mph
18	1	208° at 9 mph
19	34	200° at 6.5 mph
20	10	233° at 9.2 mph

Final Report

Fenceline Response

Start Date & Time: 8/16/2019 16:20

End Date & Time: 8/16/2019 17:10

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	24	77° at 4.7 mph
2	40	81° at 6 mph
3	79	104° at 4 mph
4	54	115° at 4.0 mph
5	18	103° at 6 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Train moving in area. Air Liquide s/d. They had a leak on nat gas component. TPC lowering to minimum rates, dynamic operating conditions

Actions Taken to Reduce Emissions: Controlled shutdown of process in response to Air Liquide S/D

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report Fenceline Response

Start Date & Time: 08/19/2019 08:50

End Date & Time: 08/19/2019 10:20

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	448	229°at 4 mph
2	805	259°at 6 mph
3	480	232°at 6 mph
4	234	270°at 4 mph
5	102	262°at 4.8 mph
6	60	252°at 8.8 mph
7	23	217°at 6 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Performing MSS on strainers and installing blinds

Actions Taken to Reduce Emissions: Performed MSS preparation per procedure

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 8/27/2019 8:05 AM

End Date & Time: 8/27/2019 8:35 AM

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	64	214°at 7 mph
2	25	196°at 7.7 mph
3	11	194°at 7.3 mph
4		

*Attach Additional pages of data if necessary

Potential Sources Identified: MSS Activities to purge Exchanger Bundle to the flare and then pull it per procedure.

Actions Taken to Reduce Emissions: Operators wet the exchanger down as it was being cleaned on the pad.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 8/27/2019 13:05

End Date & Time: 8/28/2019 09:20

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	26	85° at 8 mph (Site 2)
2	27	98° at 9.7 mph (Site 2)
3	31	231° at 3.0 mph (Site 4)
4	27	10° at 6 mph (Site 6)
5	30	350° at 4.1 mph (Site 6)
6	20	329° 7 mph (Site 6)

*Attach Additional pages of data if necessary

Potential Sources Identified: Changing wind caused the LDAR leak to impact three of the Sites. LDAR leak on a distillation tower. First attempts were not successful. TPC determined the tower needed to be shutdown to make the repair. Air Liquide also shutdown due to boiler feedwater level.

Actions Taken to Reduce Emissions: The first attempt to drill the valve was not successful. The process was shutdown following the procedure.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report Fenceline Response

Start Date & Time: 9/3/2019 18:20

End Date & Time: 9/4/2019 00:30

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	35	86° at 8.1 mph
2	46	81° at 9.0 mph
3	97	85° at 3 mph
4	27	98° at 4 mph
5	25	98° at 4 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Operations personnel identified a potential source associated with a bundle cleaning project that was ongoing.

Actions Taken to Reduce Emissions: Operations personnel sprayed the bundle with water and followed procedure to minimize emissions

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 9/5/2019 01:35

End Date & Time: 9/5/2019 03:05

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	27	338° at 2.0 mph
2	129	324° at 2.0 mph
3	78	326° at 2.0 mph
4	52	324° at 2.0 mph
5	39	300° at 2.0 mph
6	43	291° at 2.0 mph
7	22	306° at 3 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: There was Maintenance activity associated with cleaning a bundle that was identified as a potential source on the TPC site.

Actions Taken to Reduce Emissions: Operations personnel followed procedures to minimize potential emissions.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☐ No ☒

Final Report

Fenceline Response

Start Date & Time: 9/5/2019 19:00

End Date & Time: 9/6/2019 06:35

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	43	222° at 8.0 mph
2	51	231° at 8.0 mph
3	69	232° at 5.0 mph
4	72	233° at 7.0 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: While purging S2F8, Operations personnel discovered a leak at a sight glass. They continued to purge the equipment and repaired the leak.

Additional readings attached.

Actions Taken to Reduce Emissions: The equipment was in the process of being shutdown when leak was discovered. Operations personnel contacted Maintenance and LDAR to repair the leak at the sight glass.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☒ No ☐



Final Report, Fenceline Response (*Con't*)

	Concentration (ppbv)	Wind Direction & Speed (MPH)
5	61	242° at 7.0 mph
6	70	237° at 6.0 mph
7	64	243° at 5.0 mph
8	33	253° at 4.0 mph
9	27	247° at 4.0 mph
10	18	250° at 4.0 mph
11	26	317° at 3.8 mph
12	27	311° at 3.0 mph
13	0	282° at 4.8 mph
14		
15		

Final Report

Fenceline Response

Start Date & Time: 9/12/2019 02:50

End Date & Time: 9/12/2019 05:20

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	59	74° at 6.1 mph
2	26	88° at 6.0 mph
3	55	68° at 5.1 mph
4	73	77° at 4.1 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Maintenance activities associated with cleaning a bundle
may have been a potential source for the butadiene.

Actions Taken to Reduce Emissions: Operations personnel followed the procedure,
spraying the bundle with water to minimize the emissions as the equipment was cleaned.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☒ No ☐

Final Report, Fenceline Response (*Con't*)

	Concentration (ppbv)	Wind Direction & Speed (MPH)
5	87	84° at 5.0 mph
6	125	87° at 4.1 mph
7	32	82° at 7.0 mph
8	30	86° at 6.1 mph
9	26	94° at 4.1 mph
10	18	83° at 6.0 mph
11		
12		
13		
14		
15		

Final Report

Fenceline Response

Start Date & Time: 09/27/2019 05:35

End Date & Time: 09/27/2019 07:50

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	14846	145° at 4.0 mph
2	11847	156° at 6.0 mph
3	475	186° at 3.0 mph
4	149	163° at 6.0 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: There was a Reportable Emissions event that occurred when a connection on a valve in BD service failed. The event was reported to the NRC and to agencies via STEERS . Please note: the times on these reports are Central Standard Time. The RQ event occurred from 04:00 AM to 04:20 AM.

Actions Taken to Reduce Emissions: Operations personnel took immediate steps to isolate and purge the line. It was isolated by 4:20

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☒ No ☐



Final Report, Fenceline Response (*Con't*)

	Concentration (ppbv)	Wind Direction & Speed (MPH)
5	118	128° at 3.0 mph
6	83	112° at 3.0 mph
7	53	112° at 4.0 mph
8	48	115° at 4.0 mph
9	40	116° at 4.0 mph
10	5	116° at 3.0 mph
11		
12		
13		
14		
15		



Final Report Fenceline Response

Start Date & Time: 10/3/2019 22:35

End Date & Time: 10/4/2019 04:45

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	39	41° at 6 mph
2	0	45° at 5 mph
3	45	47° at 4 mph
4	32	49° at 5 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Operations personnel notified LDAR contractors. No definitive source was identified, although leaking components were identified.

Actions Taken to Reduce Emissions: Operations personnel investigated the area and identified elevated concentrations, but were unable to find leak, contacted LDAR technicians. The LDAR technicians did not identify a definitive source. All leaks identified were addressed consistent with the TPC Fugitive Emissions Program.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☐

Is there additional data attached? Yes ☒ No ☐

Final Report, Fenceline Response (*Con't*)

	Concentration (ppbv)	Wind Direction & Speed (MPH)
5	33	44° at 4 mph
6	24	48° at 4 mph
7	32	26° at 5 mph
8	14	21° at 4 mph
9	3	2° at 3 mph
10	61	50° at 5 mph
11	9	356° at 7 mph
12	53	39° at 4 mph
13	15	44.2° at 5.02 mph
14	20	21° at 4.03 mph
15	38	44.8° at 4.04 mph
16	47	42.9° at 6 mph
17	6	31° at 5 mph
18	69	44.1° at 5 mph
19	49	11.8° at 5.2 mph
20	38	52° at 5 mph
212	40	43° at 4 mph
22	10	42.2° at 5.9 mph
23	27	51° at 4 mph
24	3	34.2° at 5.9 mph



Final Report Fenceline Response

Start Date & Time: 10/16/2019 11:20 Hours

End Date & Time: 10/16/2019 16:55 Hours

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	109.4	28° at 6.0 mph
2	127.2	34.6° at 10.1 mph
3	140.7	8° at 9.0 mph
4	67	21.3° at 4.2 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Maintenance activities were being conducted on an exchanger per procedure.

Actions Taken to Reduce Emissions: Maintenance activities were conducted following TPC Procedure.

Reason No Action Was Taken: N/A

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☒ No ☐

Final Report, Fenceline Response (Con't)

	Concentration (ppbv)	Wind Direction & Speed (MPH)
5	87.6	14° at 7 mph
6	98	36.7° at 6.1 mph
7	124	44.9° at 8.9 mph
8	39	54° at 8 mph
9	206	51° at 10 mph
10	30	59° at 8 mph
11	0	44° at 7 mph
12	33	343° at 14.7 mph
13	49	29° at 6 mph
14	47	4.2° at 14.2 mph
15	72	5° at 11 mph
16	33	18° at 7 mph
17	21	11.2° at 15 mph
18	16	6.3° at 9.9 mph
19	52	8.8° at 14.4 mph
20	11	11.7° at 8.2 mph
21	9	280.7° at 9.8 mph
22	30	10° at 14 mph
23	6	335° at 9 mph

Final Report Fenceline Response

Start Date & Time: 10/16/2019 20:20 Hours

End Date & Time: 10/16/2019 22:50 Hours

	Concentration (ppbv)	Wind Direction & Speed (MPH)
1	43	16.8° at 6.7 mph
2	74	44.3° at 6 mph
3	33	48.1° at 6.6 mph
4	17	17.4° at 4.4 mph

*Attach Additional pages of data if necessary

Potential Sources Identified: Maintenance activities were being conducted to clear a line back to a tank

Actions Taken to Reduce Emissions: Maintenance activities were conducted following TPC Procedure.

Reason No Action Was Taken: N/A

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☒ No ☐

Final Report, Fenceline Response (*Con't*)

	Concentration (ppbv)	Wind Direction & Speed (MPH)
5	6	34.2° at 4.7 mph
6	72	34.3° at 6 mph
7	44	6.7° at 8.6 mph
8	66	30.5° at 3.8 mph
9	42	12.7° at 7.6 mph
10	31	4.8° at 8.3 mph
11	0	13° at 9.4 mph



Final Report Fenceline Response

Start Date & Time: 10/17/2019 15:10

End Date & Time: 10/17/2019 21:25

	Concentration (ppbv)	Wind Direction, (Degrees)	Wind Speed (MPH)
1	45	49	7.0
2	2	56.4	5.9
3	0	41	4.0
4	0	31	5.1

*Attach Additional pages of data if necessary

Potential Sources Identified: Operations personnel identified LDAR leaks as the potential source

Actions Taken to Reduce Emissions: The leaking LDAR components were identified and repaired consistent with the TPC LDAR program and procedures.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☐ No ☒

Is there additional data attached? Yes ☒ No ☐

Final Report, Fenceline Response (Con't)

	Concentration (ppbv)	Wind Direction, (Degrees)	Wind Speed (MPH)
5	26	34	6.0
6	11	24	5.0
7	40	41	7.0
8	42	6.9	7.0
9	24	15.4	7.0
10	39	37	7.0
11	28	1	8.0
12	13	5	8.0
13	33	8	8.0
14	42	10	6.0
15	17	9	8.0
16	28	6	7.0
17	40	9	8.0
18	35	8	10.0
19	30	19	5.0
20	34	9	10.0
21	40	7	6.0
22	37	6	7.0
23	38	48	5.0
24	40	51	8.0
25	1	30	4

Final Report

Fenceline Response

Start Date & Time: 10/22/2019 02:40

End Date & Time: 10/22/2019 19:10

	Concentration (ppbv)	Wind Direction, (Degrees)	Wind Speed (MPH)
1	33	5	8.0
2	29	7.8	6.3
3	4	10	10
4	46	1.6	7.4

*Attach Additional pages of data if necessary

Potential Sources Identified: Operations personnel identified the source of the elevated concentrations to be the head of an exchanger. This was treated consistent with the TPC LDAR program. Attempts were made to repair it, but they were unsuccessful.

Actions Taken to Reduce Emissions: Several attempts were made to repair it. It was placed on Delay of Repair until the alternate exchangers can be brought on line, scheduled for completion the 2nd week of November.

Reason No Action Was Taken: NA

Was a FLIR Camera Used to Identify Potential Sources? Yes ☒ No ☐

Is there additional data attached? Yes ☒ No ☐

Final Report, Fenceline Response (Con't)

	Concentration (ppbv)	Wind Direction, (Degrees)	Wind Speed (MPH)
5	35	6.1	7.8
6	40	73.4	6.8
7	52	47.8	4.2
8	38	29.5	4.8
9	34	3	7.0
10	34	359	6.0
11	36	26	3.1
12	27	42.5	5.1
13	3	43.8	5.0
14	7	38	4.0
15	45	48.5	5.0
16	17	25	4.0
17	4	43	5.0
18	7	24	3.0
19	31	7.9	5.0
20	32	44	4.0
21	56	36.1	3.95
22	8	13	6.0
23	48	40.2	5.0
24	42	59	5.0
25	20	47.8	6.0
26	5	56	7
27	3	41.3	5.0
28	2	66	4.0
29	0	42	8.0

Final Report, Fenceline Response (Con't)

	Concentration (ppbv)	Wind Direction, (Degrees)	Wind Speed (MPH)
30	8	29	6.0
31	0	46.9	7.0
32	0	45	6.0
33	0	19	5.0
34	41	5	6.0
35	17	15.5	6.1
36	30	342	7.0
37	18	1	6.0
38	38	13	7.0
39	25	6.1	13.8
40	40	33	7.0
41	28	13.1	7.9
42	21	3	12.0
43	24	6.3	10.1
44	34	6	10.0
45	26	1.1	7.9
46	59	346	6.0
47	71	312	8.4
48	31	7	10.0
49	40	353	6.0
50	35	344	10.0
51	21	1	9.0
52	63	341	7.0
53	56	292.8	8.6
54	35	353	7.0
55	42	281	6.4
56	39	10	10.0

Final Report, Fenceline Response (Con't)

	Concentration (ppbv)	Wind Direction, (Degrees)	Wind Speed (MPH)
57	24	276	7.4
58	34	9	8.0
59	66	4.5	8.0
60	30	7	9.0
61	66	349	6.2
62	46	354	4.0
63	67	14	5.0
64	80	44	3.0
65	59	49.6	5
66	7	49	4.0

APPENDIX B

SEP Final Costs

Expenditure Summary

Total Paid for Fence Line Monitoring System

\$345,557.45

Service	PO Number	Invoice Number	Payment Number	Amount Paid	Method
Purchase Equipment	123438			\$165,427.12	
		2000002312	6027986	\$ 687.41	TPC DIRECT ACH
		37998746	6026322	\$ 13,779.82	TPC DIRECT ACH
		37986888	6024612	\$14,713.95	TPC DIRECT ACH
		37972597	6022856	\$115,615.51	TPC DIRECT ACH
		37967111A	6022116	\$20,630.43	TPC DIRECT ACH
2018 Annual PO	126104			\$85,592.17	
		2000156119	6049819	\$8,700.80	TPC DIRECT ACH
		2000052917	6044413	\$6,293.89	TPC DIRECT ACH
		2000019432	6042310	\$2,458.04	TPC DIRECT ACH
		2000078807	6045990	\$7,221.94	TPC DIRECT ACH
		2000091067	6046666	\$4,870.67	TPC DIRECT ACH
		2000065657	6045115	\$5,974.83	TPC DIRECT ACH
		2000106268	6047391	\$8,369.48	TPC DIRECT ACH
		2000027400	6042962	\$11,623.62	TPC DIRECT ACH
		2000040810	6043776	\$,002.73	TPC DIRECT ACH
		2000129520	6048604	\$7,168.89	TPC DIRECT ACH
		412000119009	6048113	\$9,599.27	TPC DIRECT ACH
		2000141434A	6049437	\$5,308.01	TPC DIRECT ACH
2019 Annual PO	135912			\$94,538.16	
		2000267231	6055291	\$6,346.14	TPC DIRECT ACH
		2000327945	6058662	\$403.63	TPC DIRECT ACH
		2000318368	6057742	\$535.35	TPC DIRECT ACH
		*2000167805	6050743	\$2,219.11	TPC DIRECT ACH
		2000231833	6053453	\$10,966.76	TPC DIRECT ACH
		2000306959	6057404	\$2,694.68	TPC DIRECT ACH
		2000193910	6051573	\$8,619.44	TPC DIRECT ACH
		2000219072	6052760	\$7,808.23	TPC DIRECT ACH
		2000340581	6059448	\$1,369.94	TPC DIRECT ACH
		2000207851	6052181	\$10,018.69	TPC DIRECT ACH
		2000243532	6054060	\$8,649.77	TPC DIRECT ACH
		2000352118			Not Paid Yet
		2000255517	6054484	\$5,890.81	TPC DIRECT ACH
		2000294598	6057404	\$8,307.23	TPC DIRECT ACH
		2000169793	6050419	\$3,722.18	TPC DIRECT ACH
		2000180736	6051034	\$7,506.55	TPC DIRECT ACH
		2000280243	6056100	\$9,479.65	TPC DIRECT ACH

* Invoice for PO 126104, but applied to 135912



June 22, 2017

Mr. Kevin Harren
TPC Group
2102 TX-136 Spur
Port Neches, Texas 77651

**SUBJECT: Proposal for Upgrade of TPC Group Port Neches Operations
Air Quality Monitoring Network**

Dear Kevin:

This proposal is for the upgrade of the fence line air quality monitoring network for TPC Group at the Port Neches, Texas facility (PNO). The scope of work has two components, the GC equipment upgrade and the ModBus data delivery system upgrade. In addition to these two components a QA Plan in EPA G-5 format will be created for the upgraded network. The QA Plan will describe the layout of the network, the equipment and methods used to collect data, and the quality control protocol. Each component of the scope of work is discussed in detail below.

Fence line GC Monitoring Equipment Upgrade

The scope of work includes purchasing, configuring, and installing four new SRI GC systems at the sites known as Sites 2, 4, 5, and 6 within PNO property boundaries. The SRI systems will measure the target compounds 1,3-butadiene and styrene, with a 15-minute analysis time cycle. We propose to employ GCs with a Flame Ionization Detector (FID) and a Photoionization Detector (PID). The current system uses a dual FID only, and the benefit of having a PID is in the enhanced ability to verify the presence of the target compound vs. another compound with similar chromatographic characteristics, should a co-elution of a target and non-target compound occur. The cost for the recommended system configuration is slightly less than the original system, and the leased GC currently working at Site 6 is an FID/PID configuration.

Each calibration gas delivery system will be refurbished, minimally consisting of having each mass flow controller rebuilt and calibrated by the manufacturer and testing and replacing any solenoid valves that are not functional or leak-free. New sample conditioning drier units will be purchased as will calibration system pumps.

Sites 2 and 6 also have existing meteorological monitoring equipment for wind speed, wind direction, and ambient temperature. These two sites will have barometric pressure sensors added, and Sites 4 and 5 will have ambient temperature and barometric pressure sensors added. This will enable the pollutant data at each site to be corrected to EPA Standard Conditions of 25°C and 760 mmHg and reported as such. There are existing Campbell Scientific CR10X data loggers at each site, and we will send these to the manufacturer for full operational checkout and performance certification. Any repairs that are required will also be performed.



Mr. Kevin Harren
June 22, 2017
Page 2

ModBus System Upgrade

The existing ModBus software based data delivery system is obsolete and will be replaced. A new software code script will be created and interfaced to a Kepware server program to enable the TPC plant information system to receive continuous data feeds from the monitoring sites. This system will also connect with Site 3 on Lion Elastomers property, in the same manner as is currently in place to receive data from that site. We have recently replaced two computers in the TPC network and will need to replace the remaining two in order to bring the network to equal footing in terms of computing power to maintain the new ModBus system. Additional software coding work will be conducted to upgrade several data collection features, such as 30-minute rolling averages, wind speed reported in meters per second and interior temperature recorded for each monitoring station.

Costs and Schedule

We propose a Time and Materials budget limit of \$168,000; this budget will not be exceeded without consultation with TPC Group in advance and any additional scope of work items will be identified and acted upon only with approval of TPC Group. Of this total the estimated budget for new hardware and software is approximately \$133,000 with the remainder consisting of the labor for procurement, integration, installation/testing, and software coding tasks.

The Time and Materials arrangement that is currently in place can be extended, including the labor rate schedule that is presented as an Attachment to this proposal. It is the same as the schedule used for the operations budget for the network. All other direct costs (non-labor in nature) will be invoiced as incurred with a 10% markup. These costs include, but may not be limited to, equipment and materials purchases, mileage reimbursement costs, supplies, consumables, and any other reasonably incurred costs involved in upgrading the network. Recertified or replacement calibration and support gases are not included in this quote because they are already part of the annual operations budget for the network.

Our anticipated schedule is to complete the network upgrade within 75 days of receipt of a purchase order. The GC manufacturer currently has an order lead time of 40-45 days, and we will need approximately two weeks to complete the GC configuration and testing before deploying the units to the field. All other tasks can be completed well within this schedule.

Terms and Conditions

We assume that this work will continue according to mutually agreeable Terms and Conditions, which historically has been the TPC standard T&C document. The invoice terms are monthly T&M billing (actual costs incurred). Acceptance of this proposal is conditional on the mutual agreement to continue these terms for this scope of work. The services may be contracted via a Purchase Order referencing the proposed scope of work in this letter. Please be advised that AECOM purchased URS Corporation in 2015 and it is our preference that all new work is conducted under the AECOM name at our Austin, Texas address.



Mr. Kevin Harren
June 22, 2017
Page 3

This proposal is valid for a term of 60 days after the date above, after which AECOM reserves the right to revise the cost estimate if needed to account for changes in the basis of the quote. Please let us know if there are questions or comments regarding the cost proposal. We appreciate the opportunity to offer these services to TPC Group.

Sincerely,

A handwritten signature in black ink that reads "James Clarke". The signature is fluid and cursive, with the first name "James" being larger and more prominent than the last name "Clarke".

James Clarke
Senior Project Manager
Phone: (512) 419-5379
Email: james.o.clarke@aecom.com

A handwritten signature in blue ink that reads "Cydney Schwarzlose". The signature is fluid and cursive, with the first name "Cydney" being larger and more prominent than the last name "Schwarzlose".

Cydney Schwarzlose
Vice President, Texas/Gulf Coast Area
Environment Business Unit Leader
Phone: (512) 419-5817
Email: cydney.schwarzlose@aecom.com



ATTACHMENT

2017 Labor Category Rates for TPC Group Port Neches fence line GC air monitoring sites

Staff Category	Status	Rate
PRINCIPAL PROFESSIONAL	Exempt	171.00
PROJECT MANAGER	Exempt	145.00
ENGINEER/SCIENTIST	Exempt	114.00
SENIOR GC TECHNICIAN	Non Exempt*	104.00
GC TECHNICIAN	Non Exempt*	83.00
OPERATIONS SUPERVISOR	Non Exempt*	91.00
SAMPLING TECHNICIAN	Non Exempt*	72.00
CLERICAL	Non Exempt*	62.00

*Non Exempt employees will be compensated for overtime at 1.5 times the regular hourly rate.

Other Direct Costs will be invoiced at cost plus 10% markup

This information is proprietary to AECOM and no other use than this contracted scope of work is authorized.

Payments for Standard Purchase Order: 123438

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\$165,427.12

Payment	Remit-to Supplier	Remit-to Supplier Site	Payment DateSorted in descending order	Currency	Amount	Account	Method	Status	Status Date	Invoice	PO Number	Supplier	Supplier Site
6027986	URS	PAY_ACH	1-Feb-18	USD	687.41	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	2-Feb-18	2000002312	123438	URS	PAY_ACH
6026322	URS	PAY_ACH	19-Dec-17	USD	13,779.82	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	20-Dec-17	37998746	123438	URS	PAY_ACH
6024612	URS	PAY_ACH	29-Nov-17	USD	14,713.95	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	30-Nov-17	37986888	123438	URS	PAY_ACH
6022856	URS	PAY_ACH	26-Oct-17	USD	115,615.51	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	27-Oct-17	37972597	123438	URS	PAY_ACH
6022116	URS	PAY_ACH	12-Oct-17	USD	20,630.43	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	13-Oct-17	37967111A	123438	URS	PAY_ACH

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Payments for Standard Purchase Order: 123438

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Payment	Remit-to Supplier	Remit-to Supplier Site	Payment Date	Currency	Amount	Account	Method	Status	Status Date	Invoice	PO Number	Supplier	Supplier Site
6027986	URS	PAY_ACH	01-Feb-2018	USD	687.41	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	02-Feb-2018	2000002312	123438	URS	PAY_ACH
6026322	URS	PAY_ACH	19-Dec-2017	USD	13,779.82	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	20-Dec-2017	37998746	123438	URS	PAY_ACH
6024612	URS	PAY_ACH	29-Nov-2017	USD	14,713.95	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	30-Nov-2017	37986888	123438	URS	PAY_ACH
6022856	URS	PAY_ACH	26-Oct-2017	USD	115,615.51	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	27-Oct-2017	37972597	123438	URS	PAY_ACH
6022116	URS	PAY_ACH	12-Oct-2017	USD	20,630.43	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	13-Oct-2017	37967111A	123438	URS	PAY_ACH

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Payments for Standard Purchase Order: 126104

Invoices for PO 126104 are Below Payment Screen Shot

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Payment	Remit-to Supplier	Remit-to Supplier Site	Payment DateSorted in descending order	Currency	Amount	Account	Method	Status	Status Date	Invoice	PO Number	Supplier	Supplier Site
6050743	URS	PAY_ACH	4-Apr-19	USD	2,219.11	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	5-Apr-19	2000167805	Multiple	URS	PAY_ACH
6049819	URS	PAY_ACH	31-Jan-19	USD	18,200.80	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	1-Feb-19	Multiple	Multiple	URS	PAY_ACH
6049437	URS	PAY_ACH	10-Jan-19	USD	5,308.01	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	11-Jan-19	2000141434A	126104	URS	PAY_ACH
6048604	URS	PAY_ACH	29-Nov-18	USD	16,668.89	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	30-Nov-18	Multiple	Multiple	URS	PAY_ACH
6048113	URS	PAY_ACH	1-Nov-18	USD	19,099.27	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	2-Nov-18	Multiple	Multiple	URS	PAY_ACH
6047391	URS	PAY_ACH	1-Oct-18	USD	8,369.48	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	1-Oct-18	2000106268	126104	URS	PAY_ACH
6046666	URS	PAY_ACH	30-Aug-18	USD	14,370.67	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	31-Aug-18	Multiple	Multiple	URS	PAY_ACH
6045990	URS	PAY_ACH	2-Aug-18	USD	16,721.94	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	3-Aug-18	Multiple	Multiple	URS	PAY_ACH
6045115	URS	PAY_ACH	29-Jun-18	USD	15,474.83	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	2-Jul-18	Multiple	Multiple	URS	PAY_ACH
6044413	URS	PAY_ACH	31-May-18	USD	15,793.89	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	31-May-18	Multiple	Multiple	URS	PAY_ACH
6043776	URS	PAY_ACH	3-May-18	USD	17,502.73	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	4-May-18	Multiple	Multiple	URS	PAY_ACH
6042962	URS	PAY_ACH	29-Mar-18	USD	11,623.62	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	29-Mar-18	2000027400	126104	URS	PAY_ACH
6042310	URS	PAY_ACH	15-Mar-18	USD	2,458.04	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	16-Mar-18	2000019432	Multiple	URS	PAY_ACH

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Payment	Remit-to Supplier	Remit-to Supplier Site	Payment Date	Currency	Amount	Account	Method	Status	Status Date	Invoice	PO Number	Supplier	Supplier Site
6050743	URS	PAY_ACH	04-Apr-2019	USD	2,219.11	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	05-Apr-2019	2000167805	Multiple	URS	PAY_ACH
6049819	URS	PAY_ACH	31-Jan-2019	USD	18,200.80	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	01-Feb-2019	Multiple	Multiple	URS	PAY_ACH
6049437	URS	PAY_ACH	10-Jan-2019	USD	5,308.01	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	11-Jan-2019	2000141434A	126104	URS	PAY_ACH
6048604	URS	PAY_ACH	29-Nov-2018	USD	16,668.89	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	30-Nov-2018	Multiple	Multiple	URS	PAY_ACH
6048113	URS	PAY_ACH	01-Nov-2018	USD	19,099.27	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	02-Nov-2018	Multiple	Multiple	URS	PAY_ACH
6047391	URS	PAY_ACH	01-Oct-2018	USD	8,369.48	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	01-Oct-2018	2000106268	126104	URS	PAY_ACH
6046666	URS	PAY_ACH	30-Aug-2018	USD	14,370.67	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	31-Aug-2018	Multiple	Multiple	URS	PAY_ACH
6045990	URS	PAY_ACH	02-Aug-2018	USD	16,721.94	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	03-Aug-2018	Multiple	Multiple	URS	PAY_ACH
6045115	URS	PAY_ACH	29-Jun-2018	USD	15,474.83	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	02-Jul-2018	Multiple	Multiple	URS	PAY_ACH
6044413	URS	PAY_ACH	31-May-2018	USD	15,793.89	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	31-May-2018	Multiple	Multiple	URS	PAY_ACH
6043776	URS	PAY_ACH	03-May-2018	USD	17,502.73	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	04-May-2018	Multiple	Multiple	URS	PAY_ACH
6042962	URS	PAY_ACH	29-Mar-2018	USD	11,623.62	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	29-Mar-2018	2000027400	126104	URS	PAY_ACH
6042310	URS	PAY_ACH	15-Mar-2018	USD	2,458.04	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	16-Mar-2018	2000019432	Multiple	URS	PAY_ACH

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Invoices for PO 126104

Invoices for Standard Purchase Order: 126104

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Invoice	Invoice Date	Type	Supplier	Supplier Site	Currency	Amount	Due	Status	On Hold	Payment Status	Remit-to Supplier	Remit-to Supplier Site	Due Date	Payment	PO Number	Receipt	Attachments
2000156119	3-Jan-19	Standard	URS	PAY_ACH	USD	8,700.80	0	Approved		Paid			2-Feb-19	6049819	126104		View
2000141434	27-Nov-18	Standard	URS	PAY_ACH	USD	0	0	Cancelled		Not Paid			27-Dec-18		126104		View
2000052917	1-May-18	Standard	URS	PAY_ACH	USD	6,293.89	0	Approved		Paid			1-Jun-18	6044413	126104		View
2000019432	12-Feb-18	Standard	URS	PAY_ACH	USD	2,458.04	0	Approved		Paid			14-Mar-18	6042310	Multiple		View
2000078807	2-Jul-18	Standard	URS	PAY_ACH	USD	7,221.94	0	Approved		Paid			1-Aug-18	6045990	126104		View
2000091067	31-Jul-18	Standard	URS	PAY_ACH	USD	4,870.67	0	Approved		Paid			30-Aug-18	6046666	126104		View
2000065657	30-May-18	Standard	URS	PAY_ACH	USD	5,974.83	0	Approved		Paid			29-Jun-18	6045115	126104		View
2000106268	4-Sep-18	Standard	URS	PAY_ACH	USD	8,369.48	0	Approved		Paid			4-Oct-18	6047391	126104		View
2000014396	31-Jan-18	Standard	URS	PAY_ACH	USD	0	0	Cancelled		Not Paid			2-Mar-18		Multiple		View
2000027400	1-Mar-18	Standard	URS	PAY_ACH	USD	11,623.62	0	Approved		Paid			31-Mar-18	6042962	126104		View
2000040810	3-Apr-18	Standard	URS	PAY_ACH	USD	8,002.73	0	Approved		Paid			3-May-18	6043776	126104		View
2000129520	30-Oct-18	Standard	URS	PAY_ACH	USD	7,168.89	0	Approved		Paid			29-Nov-18	6048604	126104		View
412000119009	2-Oct-18	Standard	URS	PAY_ACH	USD	9,599.27	0	Approved		Paid			1-Nov-18	6048113	126104		View
2000141434A	27-Nov-18	Standard	URS	PAY_ACH	USD	5,308.01	0	Approved		Paid			11-Jan-19	6049437	126104		View

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Invoice	Invoice Date	Type	Supplier	Supplier Site	Currency	Amount	Due	Status	On Hold	Payment Status	Remit-to Supplier	Remit-to Supplier Site	Due Date	Payment	PO Number	Receipt	Attachments
2000156119	03-Jan-2019	Standard	URS	PAY_ACH	USD	8,700.80	0.00	Approved		Paid			02-FEB-2019	6049819	126104		
2000141434	27-Nov-2018	Standard	URS	PAY_ACH	USD	0.00	0.00	Cancelled		Not Paid			27-DEC-2018		126104		
2000052917	01-May-2018	Standard	URS	PAY_ACH	USD	6,293.89	0.00	Approved		Paid			01-JUN-2018	6044413	126104		
2000019432	12-Feb-2018	Standard	URS	PAY_ACH	USD	2,458.04	0.00	Approved		Paid			14-MAR-2018	6042310	Multiple		
2000078807	02-Jul-2018	Standard	URS	PAY_ACH	USD	7,221.94	0.00	Approved		Paid			01-AUG-2018	6045990	126104		
2000091067	31-Jul-2018	Standard	URS	PAY_ACH	USD	4,870.67	0.00	Approved		Paid			30-AUG-2018	6046666	126104		
2000065657	30-May-2018	Standard	URS	PAY_ACH	USD	5,974.83	0.00	Approved		Paid			29-JUN-2018	6045115	126104		
2000106268	04-Sep-2018	Standard	URS	PAY_ACH	USD	8,369.48	0.00	Approved		Paid			04-OCT-2018	6047391	126104		
2000014396	31-Jan-2018	Standard	URS	PAY_ACH	USD	0.00	0.00	Cancelled		Not Paid			02-MAR-2018		Multiple		
2000027400	01-Mar-2018	Standard	URS	PAY_ACH	USD	11,623.62	0.00	Approved		Paid			31-MAR-2018	6042962	126104		
2000040810	03-Apr-2018	Standard	URS	PAY_ACH	USD	8,002.73	0.00	Approved		Paid			03-MAY-2018	6043776	126104		
2000129520	30-Oct-2018	Standard	URS	PAY_ACH	USD	7,168.89	0.00	Approved		Paid			29-NOV-2018	6048604	126104		
412000119009	02-Oct-2018	Standard	URS	PAY_ACH	USD	9,599.27	0.00	Approved		Paid			01-NOV-2018	6048113	126104		
2000141434A	27-Nov-2018	Standard	URS	PAY_ACH	USD	5,308.01	0.00	Approved		Paid			11-JAN-2019	6049437	126104		

Payments for Standard Purchase Order: 135912
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Invoices for PO 135912 are Below Payment Screen Shot
\$ 180,038.16

Payment	Remit-to		Payment DateSorted in			Amount	Account	Method	Status	Status Date	Invoice	PO Number	Supplier	Supplier Site
	Supplier	Remit-to Supplier Site	descending order	Currency										
6059448	URS	PAY_ACH	14-May-20	USD	1,369.94	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	15-May-20	2000340581	135912	URS	PAY_ACH	
6058662	URS	PAY_ACH	23-Apr-20	USD	403.63	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	24-Apr-20	2000327945	135912	URS	PAY_ACH	
6057742	URS	PAY_ACH	27-Feb-20	USD	535.35	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	28-Feb-20	2000318368	135912	URS	PAY_ACH	
6057404	URS	PAY_ACH	13-Feb-20	USD	11,001.91	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	14-Feb-20	Multiple	135912	URS	PAY_ACH	
6056100	URS	PAY_ACH	26-Nov-19	USD	18,979.65	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	26-Nov-19	Multiple	Multiple	URS	PAY_ACH	
6055291	URS	PAY_ACH	24-Oct-19	USD	15,846.14	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	25-Oct-19	Multiple	Multiple	URS	PAY_ACH	
6054484	URS	PAY_ACH	19-Sep-19	USD	15,390.81	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	20-Sep-19	Multiple	Multiple	URS	PAY_ACH	
6054060	URS	PAY_ACH	29-Aug-19	USD	18,149.77	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	30-Aug-19	Multiple	Multiple	URS	PAY_ACH	
6053453	URS	PAY_ACH	1-Aug-19	USD	20,466.76	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	2-Aug-19	Multiple	Multiple	URS	PAY_ACH	
6052760	URS	PAY_ACH	27-Jun-19	USD	17,308.23	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	28-Jun-19	Multiple	Multiple	URS	PAY_ACH	
6052181	URS	PAY_ACH	30-May-19	USD	19,518.69	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	31-May-19	Multiple	Multiple	URS	PAY_ACH	
6051573	URS	PAY_ACH	2-May-19	USD	18,119.44	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	3-May-19	Multiple	Multiple	URS	PAY_ACH	
6051034	URS	PAY_ACH	11-Apr-19	USD	7,506.55	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	12-Apr-19	2000180736	135912	URS	PAY_ACH	
6050743	URS	PAY_ACH	4-Apr-19	USD	2,219.11	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	5-Apr-19	2000167805	Multiple	URS	PAY_ACH	
6050419	URS	PAY_ACH	14-Mar-19	USD	13,222.18	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	15-Mar-19	Multiple	Multiple	URS	PAY_ACH	

Oracle Screenshot of Payments for PO 135912

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Payments for Standard Purchase Order: 135912

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Payment	Remit-to Supplier	Remit-to Supplier Site	Payment Date	Currency	Amount	Account	Method	Status	Status Date	Invoice	PO Number	Supplier	Supplier Site
6059448	URS	PAY_ACH	14-May-2020	USD	1,369.94	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	15-May-2020	2000340581	135912	URS	PAY_ACH
6058662	URS	PAY_ACH	23-Apr-2020	USD	403.63	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	24-Apr-2020	2000327945	135912	URS	PAY_ACH
6057742	URS	PAY_ACH	27-Feb-2020	USD	535.35	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	28-Feb-2020	2000318368	135912	URS	PAY_ACH
6057404	URS	PAY_ACH	13-Feb-2020	USD	11,001.91	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	14-Feb-2020	Multiple	135912	URS	PAY_ACH
6056100	URS	PAY_ACH	26-Nov-2019	USD	18,979.65	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	26-Nov-2019	Multiple	Multiple	URS	PAY_ACH
6055291	URS	PAY_ACH	24-Oct-2019	USD	15,846.14	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	25-Oct-2019	Multiple	Multiple	URS	PAY_ACH
6054484	URS	PAY_ACH	19-Sep-2019	USD	15,390.81	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	20-Sep-2019	Multiple	Multiple	URS	PAY_ACH
6054060	URS	PAY_ACH	29-Aug-2019	USD	18,149.77	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	30-Aug-2019	Multiple	Multiple	URS	PAY_ACH
6053453	URS	PAY_ACH	01-Aug-2019	USD	20,466.76	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	02-Aug-2019	Multiple	Multiple	URS	PAY_ACH
6052760	URS	PAY_ACH	27-Jun-2019	USD	17,308.23	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	28-Jun-2019	Multiple	Multiple	URS	PAY_ACH
6052181	URS	PAY_ACH	30-May-2019	USD	19,518.69	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	31-May-2019	Multiple	Multiple	URS	PAY_ACH
6051573	URS	PAY_ACH	02-May-2019	USD	18,119.44	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	03-May-2019	Multiple	Multiple	URS	PAY_ACH
6051034	URS	PAY_ACH	11-Apr-2019	USD	7,506.55	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	12-Apr-2019	2000180736	135912	URS	PAY_ACH
6050743	URS	PAY_ACH	04-Apr-2019	USD	2,219.11	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	05-Apr-2019	2000167805	Multiple	URS	PAY_ACH
6050419	URS	PAY_ACH	14-Mar-2019	USD	13,222.18	BANK OF AMERICA - FUNDING/WIRES-84	TPC DIRECT ACH	Reconciled	15-Mar-2019	Multiple	Multiple	URS	PAY_ACH

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Invoices for Standard Purchase Order: 135912
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Invoice	Invoice Date	Type	Supplier	Supplier Site	Currency	Amount	Due	Status	On Hold	Payment Sta	Remit-to	Remit-to Sup	Due Date	Payment	PO Numbe	Receipt
2000267231	24-Sep-19	Standard	URS	PAY_ACH	USD	6,346.14		0 Approved		Paid			24-Oct-19	6055291	135912	
2000327945	24-Feb-20	Standard	URS	PAY_ACH	USD	403.63		0 Approved		Paid			25-Mar-20	6058662	135912	
2000318368	30-Jan-20	Standard	URS	PAY_ACH	USD	535.35		0 Approved		Paid			29-Feb-20	6057742	135912	
2000167805	29-Jan-19	Standard	URS	PAY_ACH	USD	2,219.11		0 Approved		Paid			28-Feb-19	6050743	Multiple	
2000231833	2-Jul-19	Standard	URS	PAY_ACH	USD	10,966.76		0 Approved		Paid			1-Aug-19	6053453	135912	
2000306959	6-Jan-20	Standard	URS	PAY_ACH	USD	2,694.68		0 Approved		Paid			5-Feb-20	6057404	135912	
2000193910	2-Apr-19	Standard	URS	PAY_ACH	USD	8,619.44		0 Approved		Paid			2-May-19	6051573	135912	
2000219072	30-May-19	Standard	URS	PAY_ACH	USD	7,808.23		0 Approved		Paid			29-Jun-19	6052760	135912	
2000340581	30-Mar-20	Standard	URS	PAY_ACH	USD	1,369.94		0 Approved		Paid			29-Apr-20	6059448	135912	
2000207851	3-May-19	Standard	URS	PAY_ACH	USD	10,018.69		0 Approved		Paid			2-Jun-19	6052181	135912	
2000243532	30-Jul-19	Standard	URS	PAY_ACH	USD	8,649.77		0 Approved		Paid			29-Aug-19	6054060	135912	
2000352118	29-Apr-20	Standard	URS	PAY_ACH	USD	9,504.22	9,504.22	In-Process	Qty Rec	Not Paid			29-May-20		135912	
2000255517	26-Aug-19	Standard	URS	PAY_ACH	USD	5,890.81		0 Approved		Paid			25-Sep-19	6054484	135912	
2000294598	4-Dec-19	Standard	URS	PAY_ACH	USD	8,307.23		0 Approved		Paid			3-Jan-20	6057404	135912	
2000169793	1-Feb-19	Standard	URS	PAY_ACH	USD	3,722.18		0 Approved		Paid			3-Mar-19	6050419	135912	
2000180736	27-Feb-19	Standard	URS	PAY_ACH	USD	7,506.55		0 Approved		Paid			29-Mar-19	6051034	135912	
2000280243	29-Oct-19	Standard	URS	PAY_ACH	USD	9,479.65		0 Approved		Paid			28-Nov-19	6056100	135912	

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Invoices for Standard Purchase Order: 135912

Invoice	Invoice Date	Type	Supplier	Supplier Site	Currency	Amount	Due Status	On Hold	Payment Status	Remit to Supplier	Remit to Supplier Site	Due Date	Payment	PO Number	Receipt	
2000267231	24-Sep-2019	Standard	URS	PAY_ACH	USD	6,346.14	0.00 Approved		Paid			24-OCT-2019	6055291	135912		
2000327945	24-Feb-2020	Standard	URS	PAY_ACH	USD	403.63	0.00 Approved		Paid			25-MAR-2020	6058662	135912		
2000318368	30-Jan-2020	Standard	URS	PAY_ACH	USD	535.35	0.00 Approved		Paid			29-FEB-2020	6057742	135912		
2000167805	29-Jan-2019	Standard	URS	PAY_ACH	USD	2,219.11	0.00 Approved		Paid			28-FEB-2019	6050743	Multiple		
2000231833	02-Jul-2019	Standard	URS	PAY_ACH	USD	10,966.76	0.00 Approved		Paid			01-AUG-2019	6053453	135912		
2000306959	06-Jan-2020	Standard	URS	PAY_ACH	USD	2,694.68	0.00 Approved		Paid			05-FEB-2020	6057404	135912		
2000193910	02-Apr-2019	Standard	URS	PAY_ACH	USD	8,619.44	0.00 Approved		Paid			02-MAY-2019	6051573	135912		
2000219072	30-May-2019	Standard	URS	PAY_ACH	USD	7,808.23	0.00 Approved		Paid			29-JUN-2019	6052760	135912		
2000340581	30-Mar-2020	Standard	URS	PAY_ACH	USD	1,369.94	0.00 Approved		Paid			29-APR-2020	6059948	135912		
2000207851	03-May-2019	Standard	URS	PAY_ACH	USD	10,018.69	0.00 Approved		Paid			02-JUN-2019	6052181	135912		
2000243532	30-Jul-2019	Standard	URS	PAY_ACH	USD	8,649.77	0.00 Approved		Paid			29-AUG-2019	6054060	135912		
2000352118	29-Apr-2020	Standard	URS	PAY_ACH	USD	9,504.22	9,504.22 In-Process	Qty Rec	Not Paid			29-MAY-2020		135912		
2000255517	26-Aug-2019	Standard	URS	PAY_ACH	USD	5,890.81	0.00 Approved		Paid			25-SEP-2019	6054484	135912		
2000294598	04-Dec-2019	Standard	URS	PAY_ACH	USD	8,307.23	0.00 Approved		Paid			03-JAN-2020	6057404	135912		
2000169293	01-Feb-2019	Standard	URS	PAY_ACH	USD	3,722.18	0.00 Approved		Paid			03-MAR-2019	6050419	135912		
2000180736	27-Feb-2019	Standard	URS	PAY_ACH	USD	7,506.55	0.00 Approved		Paid			29-MAR-2019	6051034	135912		
2000280243	29-Oct-2019	Standard	URS	PAY_ACH	USD	9,479.65	0.00 Approved		Paid			28-NOV-2019	6056100	135912		

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