

Environmental Reportable Events Summary



Event Date: 05/17/2022							
Event Title: Pump Seal Leak to Ground							
Impacted Media (air, water, or soil): Soil							
Operating Unit: Tank 76, Slop Oil Pump J-49							
<p>Event Summary: During routine rounds on 5/17/22, Suncor operators discovered slop oil released to soil near Tank 76 from a leaking pump. Approximately 2 to 3 barrels of slop oil was spilled. The slop oil was contained within the secondary containment area of the tank, no oil was released off Suncor property and there was no evidence of the spilled material reaching groundwater. Vacuum trucks were deployed to the area to recover liquid on 5/17/22 and soil scraping/excavation was initiated on 5/18/2022. As of this report, all impacted soils related to this release have been excavated. The leaking pump was locked out to prevent further use while a repair or replacement plan is developed. This pump remains out of service.</p> <p>The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p>							
Event Date: 05/22/2022							
Event Title: No. 3 Sulfur Recovery Unit (SRU) Trip							
Impacted Media (air, water, or soil): Air							
Operating Unit: Plant 2 Sulfur Recovery Complex, Plant 2 Flare							
<p>Event Summary: While under normal operation, a component in the process level control (PLC) system failed, which caused the No. 3 SRU to trip offline. Suncor personnel power cycled the component and switched to an alternate piece of equipment to bring the unit back online. The SRU treats refinery flare gas to reduce H₂S concentrations. While the unit was offline, H₂S concentrations remained elevated but were combusted at the flare tip. At the flare tip, and in the refinery fuel gas system, H₂S is combusted, which results in the generation of Sulfur Dioxide (SO₂) and water vapor.</p> <p>This event began 05/22/2022 at 06:00 a.m. and ended on 05/23/2022 at 12:00 a.m. once the electrical issue was resolved and the unit was returned to a stable operating condition.</p> <p>The specific permit terms or conditions exceeded for this event include:</p>							
<table border="1"> <thead> <tr> <th>Permit Term or Condition</th> <th>Reported Value</th> </tr> </thead> <tbody> <tr> <td>162 ppm H₂S in flare gas for a 3-hour average</td> <td>300 ppm H₂S in flare gas for a 3-hour average</td> </tr> <tr> <td>1,416 °F minimum operating temperature (daily average)</td> <td>1,238 °F daily average</td> </tr> </tbody> </table>		Permit Term or Condition	Reported Value	162 ppm H ₂ S in flare gas for a 3-hour average	300 ppm H ₂ S in flare gas for a 3-hour average	1,416 °F minimum operating temperature (daily average)	1,238 °F daily average
Permit Term or Condition	Reported Value						
162 ppm H ₂ S in flare gas for a 3-hour average	300 ppm H ₂ S in flare gas for a 3-hour average						
1,416 °F minimum operating temperature (daily average)	1,238 °F daily average						
<p>In addition, a report was made pursuant to the Emergency Planning and Community Right-to-Know Act (EPCRA) for a reportable quantity (RQ) of SO₂ (over 500 lbs 24-hour total). The RQ was 597 lbs of SO₂ (24-hour total).</p> <p>The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p>							

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Environmental Reportable Events Summary



Event Date: 05/27/2022							
Event Title: Line Leak near Tank 3801							
Impacted Media (air, water, or soil): Soil							
Operating Unit: Tank 3801							
<p>Event Summary: During routine rounds, Suncor operators discovered a water and diesel fuel mixture released to soil near Tank 3801. Approximately 100 to 200 barrels of diesel fuel and water were released. The spilled material was contained within the secondary containment area of the tank, no oil was released off Suncor property and there was no evidence of the spilled material reaching groundwater. Suncor operators located the source of the leak, isolated the section of line that was leaking, and called for vacuum trucks to recover the spilled material. Soil scraping/excavation was initiated on 05/28/2022. As of this report, the large majority of the impacted soil has been excavated with only a small amount of excavation remaining to be completed. This work is scheduled to be completed in the coming weeks. The leaking line currently has a temporary clamp, which prevents leaks from the line, and will be replaced with a new line that will be brought fully above ground.</p> <p>The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p>							
Event Date: 06/01/2022							
Event Title: No. 3 Sulfur Recovery Unit (SRU) Trip							
Impacted Media (air, water, or soil): Air							
Operating Unit: Plant 2 Sulfur Recovery Complex, Plant 2 Flare							
<p>Event Summary: While under normal operation, the valve controlling fuel gas flow to the SRU incinerator closed, which caused the incinerator to trip offline. Suncor personnel took operating units to minimum rates to reduce the creation of fuel gas while instrument technicians were called to replace the solenoid controlling the valve. The SRU treats refinery fuel gas and flare gas to reduce H₂S concentrations. While the unit was offline, H₂S concentrations remained elevated but were combusted at the flare tip and in the refinery fuel gas system. At the flare tip, and in the refinery fuel gas system, H₂S is combusted, which results in the generation of Sulfur Dioxide (SO₂) and water vapor.</p> <p>This event began 06/01/2022 at 2:00 p.m. and ended on 06/02/2022 at 12:00 a.m. once the solenoid was replaced and the unit was brought back into stable operation.</p> <p>The specific permit terms or conditions exceeded for this event include:</p>							
<table border="1"> <thead> <tr> <th>Permit Term or Condition</th> <th>Reported Value</th> </tr> </thead> <tbody> <tr> <td>162 ppm H₂S in fuel gas for a 3-hour average</td> <td>300 ppm H₂S in fuel gas for a 3-hour average</td> </tr> <tr> <td>1,416 °F minimum operating temperature (daily average)</td> <td>1,402 °F daily average</td> </tr> </tbody> </table>		Permit Term or Condition	Reported Value	162 ppm H ₂ S in fuel gas for a 3-hour average	300 ppm H ₂ S in fuel gas for a 3-hour average	1,416 °F minimum operating temperature (daily average)	1,402 °F daily average
Permit Term or Condition	Reported Value						
162 ppm H ₂ S in fuel gas for a 3-hour average	300 ppm H ₂ S in fuel gas for a 3-hour average						
1,416 °F minimum operating temperature (daily average)	1,402 °F daily average						
<p>The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p>							

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Environmental Reportable Events Summary



Event Date: 06/02/2022	
Event Title: Startup Emissions Exceedances	
Impacted Media (air, water, or soil): Air	
Operating Unit: Plant 1 Fluidized Catalytic Cracking Unit (FCC)	
Event Summary: While starting up the Plant 1 FCC, torch oil was introduced to the unit, which caused elevated carbon monoxide (CO) emissions. Additionally, while starting up the main air blower for the FCC, an opacity spike was measured at the FCC stack above the permit limit. During the startup, elevated hydrogen sulfide (H ₂ S) in the flare and fuel gas system was also present as the unit was brought online. At the flare tip, and in the refinery fuel gas system, H ₂ S is combusted, which results in the generation of SO ₂ and water vapor. The CO emissions and opacity events were brought under control after the unit was stabilized following startup activities.	
This event began 06/02/2022 at 01:00 a.m. and ended on 06/04/2022 at 08:00 p.m. once the unit was operating stably.	
The specific permit terms or conditions exceeded for this event were:	
Permit Term or Condition	Reported Value
500 ppm CO at 0% O ₂ for a 1-hour average	2,030 ppm CO at 0% O ₂ for a 1-hour average
Opacity not to exceed 20% for a 6-minute average	36% for a 6-minute average (intermittent)
Opacity not to exceed 30% for a 6-minute average during sandblasting	31% for a 6-minute average during sandblasting (intermittent)
162 ppm H ₂ S in flare gas for a 3-hour average	265 ppm H ₂ S in flare gas for a 3-hour average
162 ppm H ₂ S in fuel gas for a 3-hour average	176 ppm H ₂ S in fuel gas for a 3-hour average
The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.	

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Environmental Reportable Events Summary



Event Date: 06/03/2022							
Event Title: Low Heating Value and Visible Smoke, Plant 2 Flare							
Impacted Media (air, water, or soil): Air							
Operating Unit: No. 2 Crude Unit							
<p>Event Summary: During normal operation, the net heating value indication from the online analyzer on the Plant 2 flare began reading erratically in the Plant 2 main control room. Operations personnel began investigating the issue and found a relief valve from the No. 2 Crude Unit was open to the flare.</p> <p>This event began 06/03/2022 at 05:15 a.m. and ended on 06/04/2022 at 12:00 a.m. when Operations personnel blocked in the relief valve.</p> <p>The specific permit terms or conditions exceeded for this event were:</p>							
<table border="1"> <thead> <tr> <th>Permit Term or Condition</th> <th>Reported Value</th> </tr> </thead> <tbody> <tr> <td>Flare combustion zone Net Heating Value (NHV) 270 Btu/scf for a 15-minute average</td> <td>89 ppm Btu/scf for a 15-minute average</td> </tr> <tr> <td>Flares shall be operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.</td> <td>Between 04:58 a.m. and 02:09 p.m. on 06/03/2022 there was a period of 5 hours and 4 minutes when the flare operated with visible emissions.</td> </tr> </tbody> </table>		Permit Term or Condition	Reported Value	Flare combustion zone Net Heating Value (NHV) 270 Btu/scf for a 15-minute average	89 ppm Btu/scf for a 15-minute average	Flares shall be operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.	Between 04:58 a.m. and 02:09 p.m. on 06/03/2022 there was a period of 5 hours and 4 minutes when the flare operated with visible emissions.
Permit Term or Condition	Reported Value						
Flare combustion zone Net Heating Value (NHV) 270 Btu/scf for a 15-minute average	89 ppm Btu/scf for a 15-minute average						
Flares shall be operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.	Between 04:58 a.m. and 02:09 p.m. on 06/03/2022 there was a period of 5 hours and 4 minutes when the flare operated with visible emissions.						
<p>The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p>							
Event Date: 06/05/2022							
Event Title: No. 1 Crude Unit Vacuum Section Release and Sewer Overflow							
Impacted Media (air, water, or soil): Air and Soil							
Operating Unit: Plant 1 No. 1 Crude Unit, Oily Water Sewer System							
<p>Event Summary: During the startup of the No. 1 Crude Unit in Plant 1, the vacuum section overhead started to heat up. Operations personnel attempted to cool the vapor going to this section of the crude unit, but the changes were not creating enough cooling. A piece of equipment in the crude unit, D-73, was over-pressured, which resulted in spraying oil to the atmosphere through a vent. Oil was sprayed in the crude unit and adjacent areas, including on portions of Brighton Boulevard. This also caused the oily water sewer system inside the refinery to be overwhelmed, which caused an overflow of oil on refinery property. Oil that made it to stormwater retention ponds and water treatment lagoons was contained with oil absorbent and hard booms and skimmed to prevent oil from getting offsite. Impacted soil on refinery property was excavated and concrete swales were pressure washed to remove impacted sediment. No soil staining was noted on Brighton Boulevard, so no additional cleanup was necessary outside of refinery property.</p> <p>This event began 06/05/2022 at 2:00 p.m. and ended on 06/05/2022 at 10:00 p.m. once when the vacuum section of the crude unit was tripped offline allowing appropriate cooling to reduce pressure in the system.</p> <p>The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p>							

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