U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VIII WATER BRANCH, ENFORCEMENT
AND COMPLIANCE ASSURANCE DIVISION
CLEAN WATER ACT
COMPLIANCE INSPECTION REPORT

for

Name of Facility: Suncor Energy (USA) Inc. Commerce City Refinery
Facility Address: 5801 Brighton Blvd., Commerce City, CO 80022
Mailing Address: 5801 Brighton Blvd., Commerce City, CO 80022

Report Prepared on: 8/23/2021 By: _____,
Date Sr. Environmental Scientist (PG Environmental)
Signature

Report Final as of: 9/01/2021 By: _____, EPA
Date NPDES & Wetlands Enforcement Section Chief
Signature

General Information

Type of Inspection:	Industrial Stormwater CEI
Owner:	Suncor Energy (USA) Inc.
Operator:	Suncor Energy (USA) Inc.
Permittee:	Suncor Energy (USA) Inc.
NPDES Permit No:	COS000009
NPDES Permit Effective Date:	September 27, 2012
NPDES Permit Expiration Date:	October 31, 2017 (administratively extended)
SIC Codes:	2911, 3599
Number of Outfalls:	9
Receiving Water:	Sand Creek; Unnamed tributary to the South Platte River
Latitude and Longitude:	39.75 N, -104.883333 W

On-Site Facility Inspection Overview

Inspection Dates: June 22, 23, and 24, 2021
Approximate Entry Time: 9:00 a.m. (MDT) on June 22, 2021
Approximate Exit Time: 3:40 p.m. (MDT) on June 24, 2021

On June 22–24, 2021, a representative from U.S. Environmental Protection Agency (EPA) Region VIII and EPA's contract inspectors from PG Environmental (the EPA Inspection Team), conducted an industrial stormwater compliance evaluation inspection at the Suncor Energy (USA) Inc. Commerce City Refinery (Facility) in Commerce City, Colorado. Suncor Energy (USA) Inc. is identified as the Permittee and owns and operates the Facility.

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I. INTRODUCTION

On June 22-24, 2021, a representative from U.S. Environmental Protection Agency (EPA) Region VIII and EPA's contract inspectors from PG Environmental (hereinafter, collectively referred to as the EPA Inspection Team) inspected the Suncor Energy (USA), Inc. Commerce City Refinery (hereinafter, Facility) in Commerce City, Colorado. Suncor Energy (USA), Inc. (hereinafter, Permittee or Suncor) is identified as the Permittee and owns and operates the Facility. The EPA Inspection Team was joined on the inspection by a representative from EPA Region X for training purposes, as well as a representative from Colorado Department of Public Health and Environment (CDPHE). The primary purpose of the inspection was to review and evaluate Facility operations and stormwater management, to review the accuracy and reliability of the Permittee's self-monitoring and reporting program, and to obtain information that will assist EPA in assessing the Permittee's compliance with the requirements of the Permit. The weather at the time of the inspection each day was warm and mostly sunny.

The Facility is authorized to discharge stormwater associated with industrial activity and specified non-stormwater discharges, to Sand Creek and the South Platte River, consistent with the terms and conditions of Colorado Discharge Permit System (CDPS) Permit No. COS000009 (hereinafter, the Permit). The Permit was issued on November 1, 2012 and expired on September 27, 2017 but has been administratively extended.

Photographs taken during the inspection are maintained on file with EPA Region VIII, some of which are included in this report as Appendix A, Photograph Log. Supporting documentation is included in Appendix B, Exhibit Log. The Suncor Energy USA Commerce City Refinery April 2021 Stormwater Management Plan (SWMP) is included as Appendix C. A copy of the Permit is included as Appendix D. Furthermore, a pre-inspection records request submitted by the EPA Inspection Team and completed by Suncor on June 3, 2021 is included in this report as Appendix E.

This inspection was conducted concurrently with an evaluation of the Permittee's compliance with CDPS Permit No. CO0001147 associated with process wastewater discharges to Sand Creek; observations pertaining to CDPS Permit No. CO0001147 are documented in a separate inspection report.

Facility Description

The Facility is a 98,000-barrel-per-day petroleum refinery producing gasoline, diesel and distillate fuels, paving-grade asphalt, and other petroleum products. The Facility is located in Commerce City, Colorado, in southwestern Adams County.

The Facility is approximately 274 acres and located just south of Sand Creek and Highway 270. The Facility comprises three separate process areas referred to by the Permittee as Plant 1, Plant, 2, and Plant 3 (refer to Appendix B, Exhibit 1). Brighton Boulevard bisects the Facility from north to south, with Plant 1 located west and Plants 2 and 3 located east of Brighton Boulevard. Two Suncor-owned buildings are located to the north of Highway 270, the Nelson Property (a contractor-operated maintenance facility) and the ERT building (used to house spill and emergency response equipment). Private businesses border the south and east perimeters of the Facility along 56th Avenue and York Street. Metro Wastewater Reclamation District and Denver Water operate facilities immediately west of Plant 1 and opposite the Burlington Ditch waterway.

Plants 1, 2, and 3 are each bordered by Sand Creek to the north, which flows northwest into the South Platte River approximately 1/3-mile downstream of the Facility. An unnamed tributary of the South Platte River runs west along the southern boundary of the Facility. The Burlington Ditch flows north along the west perimeter of the Facility (west of Plant 1). The Facility is not permitted to discharge industrial stormwater or wastewater to the Burlington Ditch from any outfall.

Industrial Stormwater Management and Monitoring

The Permittee's stormwater management plan (SWMP) identifies nine (9) Storm Water Areas (SWAs) (Nos. 1 through 4 and 6 through 10) throughout the Facility for stormwater runoff from industrial activities containing potential pollutant sources that discharge directly through nine (9) stormwater outfalls to both Sand Creek and the unnamed tributary of the South Platte River (refer to Appendix C, SWMP Figures 1 through 10). These stormwater outfalls are described below. The Facility's industrial activities generally include materials loading and unloading, outdoor storage, outdoor manufacturing and/or processing, onsite waste handling and disposal, and dust and particulate generating activities. Industrial stormwater runoff from areas of the Facility outside these SWAs is captured and treated at the Facility's industrial wastewater treatment plant (hereinafter, WWTP), discussed below.

COS000009 Outfall Descriptions (refer to Appendix B, Exhibit 2):

- Outfall 004A – Outfall to Sand Creek from Mary's Pond located in the northwest corner of Plant 3 (asphalt plant) (SWA Nos. 6, 7, and 10) (refer to Appendix A, Photographs 1 and 2).
- Outfall 021A – Constructed outlet at the northeast corner of the Nelson Property (Suncor contractor operated maintenance facility) (SWA No. 4) (refer to Appendix A, Photographs 3 and 4).
- Outfall 022A – Outfall from retention pond located at the northwest corner of Nelson Property (SWA No. 4) (refer to Appendix A, Photograph 5).
- Outfall 023A – Outfall from detention area located at west end of swale south of Sand Creek (SWA Nos. 1 and 2) (refer to Appendix A, Photographs 6, 7 and 8).
- Outfall 024A – Outfall from detention area located at north end of Plant 2 (SWA No. 8) (refer to Appendix A, Photograph 9).
- Outfall 025A – High flow contingency discharge point at Plant 1 sulfur rail loading gate (SWA No. 3) (not visited during inspection).
- Outfall 026A – High flow contingency discharge point at ditch inlet to Mary's Pond at Plant 3 (SWA Nos. 6, 7, and 10) (refer to Appendix A, Photographs 1 and 10).
- Outfall 027A – Manual pumping of accumulated stormwater from East Tank Farm in Plant 2 (no longer used) (not visited during inspection).
- Outfall 028A – Outlet of retention pond located in the southwest corner of Plant 2, approximately 1,700 feet east-northeast of the intersection of Brighton Blvd. and York St (SWA No. 9) (not visited during inspection).

The Facility's SWMP describes SWAs stormwater runoff flow characteristics and area specific Best Management Practices (BMPs) to control pollutants in stormwater discharges from each plant process area (Plant 1, Plant 2, and Plant 3). Surface water flow direction at the Facility is generally north towards Sand Creek with the exception of some runoff from the middle portions of the Facility flowing south into an unnamed tributary to the South Platte River (refer to Appendix B, Exhibits 1 and 3).

Plant 1

The Permittee is authorized to discharge stormwater runoff from Plant 1 at Outfall 023A (SWAs Nos. 1 & 2) and Outfall 025A (SWA No. 3). Refer to Appendix B, Exhibit 2 for outfall locations.

Figure 1. SWA Nos. 1 and 2.

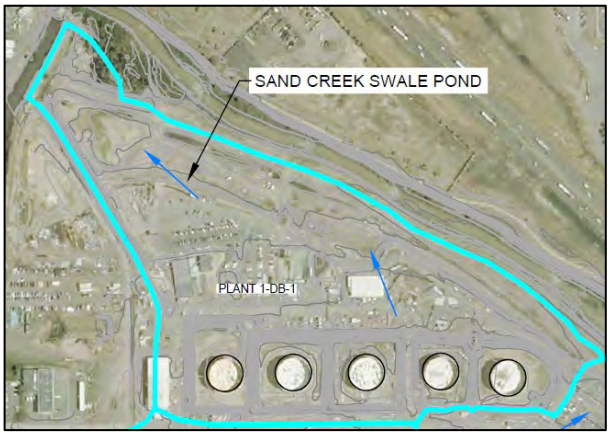

Figure 2. Plant 1 drainage and location of Sand Creek Swale Pond.

Stormwater runoff from SWA Nos. 1 and 2 (areas within Plant 1 where stormwater runoff is not treated by the WWTP; see Figure 1) is collected in the stormwater detention area upgradient of Outfall 023A (refer to Appendix A, Photographs 6 and 13). This stormwater detention area also receives runoff from the contaminated groundwater swale (referred to as the Sand Creek Swale Pond, see Figure 2) located between Plant 1 and Sand Creek during significant storm events (refer to Appendix A, Photograph 12). Additionally, stormwater runoff from an unnamed stormwater detention area located immediately east of the groundwater treatment systems (GWTS) (refer to Appendix A, Photograph 11) also drains to the stormwater detention area at Outfall 023A. Stormwater runoff from SWA No. 2 first collects in a concrete conveyance channel that runs north and northwest along the boundary of Plant 1 and adjacent to Metro Wastewater Reclamation District property and ultimately conveyed by culvert into the stormwater detention area at Outfall 023A.

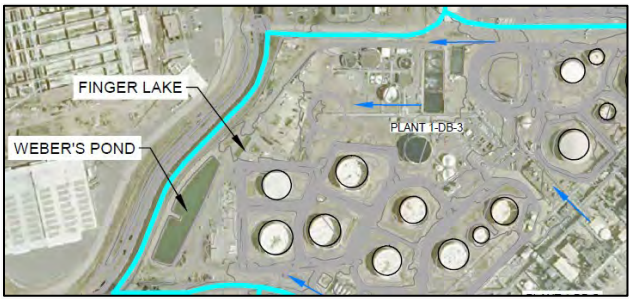

Figure 3. Plant 1 drainage and location of Finger Lake and Webber's Pond.

Stormwater runoff from the remaining portions of Plant 1 that does not flow to the stormwater detention area at Outfall 023A or to Outfall 025A and is not captured and conveyed to the Facility's oily water and non-oily water sewer systems which flow to the WWTP, drains to two impoundments referred to as Finger Lake and Webber's Pond located on the western portion of the Facility (refer to Appendix A, Photographs 17 and 18 and Figure 3). Finger Lake is a concrete lined rectangular impoundment which collects both stormwater runoff and non-stormwater sources, including firefighting training waters. Webber's Pond is a poly-lined impoundment located approximately 50 feet east of the Burlington Ditch waterway. According to Facility representatives, stormwater that accumulates in the tank farm secondary containment areas may also be pumped to Webber's Pond to promote evaporation. Mr. Marler (Suncor's Sr. Environmental Advisor) explained that stormwater and non-stormwater that collects in these two impoundments is not discharged through any stormwater Permit (CDPS Permit No. COS0000009) outfalls. He explained that Finger Lake may be pumped to the WWTP for treatment after being sampled for WWTP effluent parameters (CDPS Permit No. COS0001147). If the samples show compliance with Permit conditions, it is pumped (refer to Appendix A, Photograph 23) directly to Lagoon 1 of the WWTP (bypassing the majority

of the WWTP treatment units) and subsequently discharged through Outfall 002B and ultimately Outfall 020A. If sampling identifies contamination which may risk compliance exceedances for CDPS Permit No. CO0001147 (wastewater Outfall 020A), Finger Lake is then pumped to Tank TP-60 where it is then fed into the headworks of the WWTP (for full treatment). As stated by Facility representatives, these internal samples of the onsite impoundments are not reported on DMRs or shared with CDPHE.

Plant 2

Stormwater runoff from Plant 2 is authorized to be discharged at Outfall 024A (SWA No. 8; see Figure 4) and Outfall 28A (SWA No. 9). Refer to Appendix B, Exhibit 2 for outfall locations.

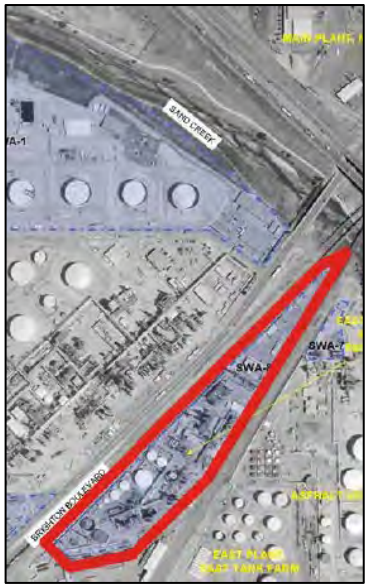

Figure 4. SWA No. 8.

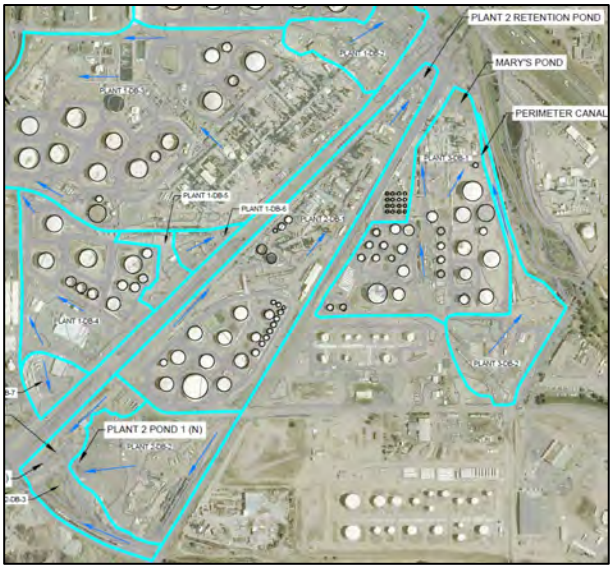

Figure 5. Plant 2 drainage.

Runoff at Plant 2 generally flows north and northeast toward Sand Creek; however, the south side of Plant 2 drains to the south and southwest into an unnamed tributary to the South Platte that follows a railroad right-of-way to the west along the Facility's southern boundary (see Figure 5). Stormwater runoff from Plant 2 that is not captured (primarily employee parking area) by the oily water and non-oily water sewer systems collects in a stormwater detention basin located upgradient of Outfall 024A (refer to Appendix A, Photograph 9). According to Facility representatives, this basin is normally pumped back to the WWTP headworks for treatment but can discharge to Outfall 024A via gate valve, as needed.

Plant 3

Stormwater runoff from Plant 3 is authorized to be discharged at Outfall 004A (SWA Nos. 6, 7, and 10; see Figure 6), Outfall 026A (SWA Nos. 6, 7, and 10), and Outfall 027A. Refer to Appendix B, Exhibit 2 for outfall locations.

Figure 6. SWA Nos. 6, 7, and 10.

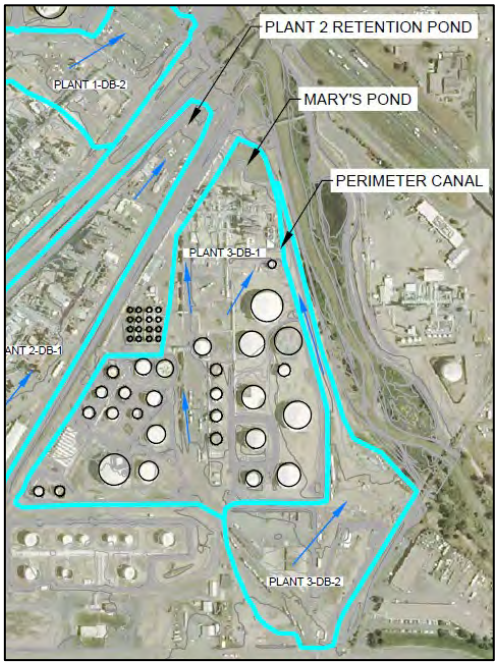

Figure 7. Plant 3 drainage.

Runoff at Plant 3 generally flows to the north towards Mary's Pond or Sand Creek via the north entrance road (see Figure 7). During the inspection, Facility representatives explained that Outfall 027A, a manual release outfall associated with SWA No. 6, is no longer utilized for stormwater discharges. Stormwater runoff from Plant 3 is captured in Mary's Pond, a concrete lined stormwater retention basin. According to Facility representatives, during normal conditions, all stormwater runoff captured in this pond is pumped to the WWTP headworks for treatment (refer to Appendix A, Photographs 22 and 23). During significant storm events, Mary's Pond is discharged to Sand Creek through a manually controlled valve to Outfall 004A (refer to Appendix A, Photograph 2). During significant storm events, a concrete conveyance channel flowing northwest along the eastern perimeter of Plant 3 into Mary's Pond may overtop the channel wall upstream of the inlet into Mary's Pond. Stormwater that overtops this channel overland flows north into Sand Creek (refer to Appendix A, Photograph 10). This high flow contingency discharge point has been permitted by CDPHE as Outfall 026A.

Nelson Property (Suncor contractor operated maintenance facility)
Stormwater runoff from the Nelson Property north of Highway 270 is authorized to be discharged to Outfall 021A (SWA No. 4) and Outfall 022A (SWA No. 4) (refer to Appendix A, Photographs 3, 4, and 5), and ultimately to Sand Creek. Refer to Appendix B, Exhibit 2 for outfall locations.

Additional industrial stormwater runoff from the process areas of Plants 1, 2, and 3 is collected and conveyed by the Facility's oily water and non-oily water sewer systems to the WWTP for treatment and subsequent discharge through the Facility's WWTP (CDPS Permit No. CO0001147) Outfall 020A. According to Facility representatives, stormwater impoundments associated with Outfalls 004A (Mary's Pond; refer to Appendix A, Photographs 22 and 23) and Outfall 024A (refer to Appendix A, Photograph 9) are pumped to the WWTP for treatment during typical conditions, and stormwater is typically retained onsite and allowed to evaporate when possible.

As stated in the Facility SWMP, "During most storm events, discharge is only expected to occur at outfalls 021A (Nelson Property) and/or 024A (Plant 2). Outfalls 004A and 027A are manually controlled and do not normally discharge during a storm event. The remaining outfalls (022A, 023A, 025A, 026A, and 028A) are only expected to have stormwater discharge during very large or sustained storm events." Based on discharge data, the EPA Inspection Team noted this statement in the SWMP to be generally accurate. The

Facility received significant storm events in May and June 2021 which resulted in a discharge from the manually controlled gates associated with the stormwater detention area located in the northwest portion of the Facility to Outfall 023A and subsequently Sand Creek.

Stormwater visual inspections, monitoring, and quarterly assessments at the Facility are performed by a third-party contractor, PSS. When needed, Suncor staff is available to assist with inspections and monitoring. The applicable Suncor departments responsible for inspection and monitoring support to PSS when needed is described in the SWMP. Oil and grease and pH NPDES compliance samples for permitted outfalls are analyzed by the onsite Suncor laboratory. Analyses for all other parameters (total organic carbon (TOC), selenium, benzene, and methyl tert-butyl ether (MTBE)) are conducted by a contract laboratory, Technology Labs in Fort Collins, Colorado.

II. INSPECTION PROCESS

Inspection Opening Conference

The EPA Inspection Team arrived at the Facility on June 22, 2021 at 9:00 AM (EDT) for the inspection. Jared Richardson and Anthony D'Angelo of PG Environmental, and Stephanie Meyers of EPA Region VIII displayed their Clean Water Act inspector credentials to Wes McNeil (Suncor Environmental Team Lead, Commerce City Refinery) and Eric Marler (Senior Environmental Advisor, Commerce City Refinery) at the onset of the inspection and explained the purpose of the inspection was to observe compliance with the Permit. The EPA Inspection Team informed the Permittee that any information that the Facility deemed to be confidential business information ("CBI") should be identified to EPA representatives during the inspection and it would be handled as CBI according to EPA's CBI procedures. No information provided to the EPA Inspection Team was identified as CBI during the course of the inspection. Table 1 describes the individuals that participated in the inspection.

Table 1. Inspection Attendee List

Name	Affiliation	Telephone	Email
EPA Inspectors and Contractors			
Jared Richardson	PG Environmental (EPA Contractor)	(720) 789-8036	Jared.richardson@pgenv.com
Anthony D'Angelo	PG Environmental (EPA Contractor)	(720) 789-8049	Anthony.dangelo@pgenv.com
Stephanie Meyers	EPA Region VIII	(303) 312-6938	Meyers.stephanie@epa.gov
Michelle Lanzoni	EPA Region X	(907) 271-6627	Lanzoni.michelle@epa.gov
Colorado Department of Public Health and Environment (CDPHE) Representatives			
Clayton Moores	Unit Manager, Field Services Unit 1	(303) 241-9296	clayton.moores@state.co.us
Meg Parish*	Permits Section Manager, Water Quality Control Division	--	meg.parish@state.co.us
Suncor Energy (USA), Inc. Representatives			
Eric Marler	Sr. Environmental Advisor	(303) 227-7524	EMarler@Suncor.com
Wes McNeil	Environmental Team Lead	(720) 838-1644	wmcneil@suncor.com
Donald Austin*	Vice President of Commerce City Refinery	--	daustin@suncor.com
Brian Nelson	EHS Manager	(303) 286-5711	bnelson@suncor.com

Brian Lilly	ORC	(303) 286-5748	blilly@suncor.com
Aaron James	CFT Manager	(720) 322-2503	ajames@suncor.com
Chris Mack	WWTP Superintendent	(303) 286-5745	chmack@csuncor.com
Brian Killough	Remediation Advisor	(303) 286-5714	bkillough@suncor.com
Heather Sazdov*	Operations Manager	--	--
Jacy Rock*	Senior Legal Council	--	--
Ana Rodriguez	Document Control	(720) 630-3495	arodriguez@suncor.com
Lisa Kouf	Document Control	(970) 213-5035	lkouf@suncor.com

*only present for closing conference on June 24, 2021

Facility Site Walk

Over the course of June 22, 23, and 24, 2021, the EPA Inspection Team observed various areas of the Facility to observe SWMP implementation and Permit compliance, including stormwater outfalls, conveyances, impoundments, and industrial areas. At the time of the inspection, the Permittee was finishing a scheduled maintenance turnover of Plants 1 and 3 which occurs every 5 years. As such, additional maintenance activities, laydown areas, and contractors were present throughout the Facility compared to normal operating conditions.

Stormwater impoundments viewed and/or discussed with Facility representative during the inspection include the following (refer to Appendix B, Exhibit 3):

- Unnamed stormwater detention area east of GWTS that subsequently flows to Sand Creek Swale and/or Outfall 023A stormwater detention area (refer to Appendix A, Photograph 11).
- Sand Creek Swale Pond (used to retain contaminated groundwater that surfaces) (refer to Appendix A, Photograph 12).
- Stormwater detention area and associated Outfall 023A (equipped with two gate check valves) (refer to Appendix A, Photographs 6 and 13).
- Plant 2 North Outfall 024A stormwater detention area (refer to Appendix A, Photograph 9).
- Nelson Property Outfalls 021A and 022A and associated stormwater detention basins (refer to Appendix A, Photographs 3, 4, 5, 14, and 16).
- Finger Lake and Webber's Pond (refer to Appendix A, Photographs 17 through 21).
- Outfall 004A (Mary's Pond) (refer to Appendix A, Photographs 1 and 2).
- Plant 2 Outfall 028A stormwater detention basins (not visited).
- Various other small sumps and impoundments within Plants 1, 2, and 3 used to manage stormwater runoff.

Records Review

The EPA Inspection Team conducted a records review to evaluate the Permittee's compliance with the Permit. On May 27, 2021, EPA Inspector Stephanie Meyers provided a records request to the Permittee which was completed on June 3, 2021 (refer to Appendix E, Suncor Completed EPA Records Request). Additional records were requested during and following the course of the inspection. Most of the records and reports required by the Permit were available for review prior to, during, and after the inspection. However, some records provided by the Permittee were noted as deficient (refer to Section III. Summary of Observations of this report for details).

III. SUMMARY OF OBSERVATIONS

The following section summarizes the EPA Inspection Team's observations relative to Permit requirements, including the status of certain treatment units, operation and maintenance practices, and the Permittee's monitoring and reporting documentation.

Part I.E.2.a, Maintenance of Control Measures and Associated Documentation, of the Permit states, "The permittee must maintain all control measures used to achieve the effluent limits required by this permit (see Part I.B–Effluent Limitations) in effective operating condition. For this permit, maintenance includes preventative and routine maintenance, modification, repair, replacement, or installation of new control measures."

Observation 1. The EPA Inspection Team observed that stormwater containment capacity, including freeboard, at the Facility may not be sufficient to contain and limit stormwater discharges from the Facility to Sand Creek to the maximum extent practicable demonstrated by previous stormwater discharge events and containment capacity assessments conducted by the Permittee.

While the Permit does not specify a requirement for the Facility to retain stormwater from a 25-year/24-hour storm event onsite, this is a recommended industry standard. Section 2.1.3, Discharge or Drainage Controls [§112.7(a)(3)(iii)], of the Facility's Spill Prevention Control and Countermeasures (SPCC) Plan, dated May 2021, states, "it should be noted that not all tertiary containments are adequate during a 25-year storm event." This information is based on an August 16, 2014 Containment and Drainage Analysis Technical Memorandum to Suncor from Golder Associates (refer to Appendix F) which, in Table 3 of the memo, identifies that Webber's Pond, Finger Lake, Mary's Pond, and the Sand Creek Swale Pond were not designed or constructed to retain stormwater runoff from a 25-year/24-hour storm event (identified in the technical memorandum based on 2013 NOAA data as 3.60 inches). Additionally, Section 2.1.3.1. Plant 1, of the Facility's May 2021 SPCC Plan states, "Plant 1 drainage can flow westward toward the Burlington Ditch and accumulate in two collecting ponds (Finger Lake and Webber's Pond), which offer containment volumes that do not meet that needed for Plant 1 drainage associated with inadequate secondary containments along with stormwater from areas not otherwise contained."

At the time of the inspection, upon request the Permittee was unable to provide current design calculations or volume capacities for any of the stormwater impoundments (i.e., controls) at the Facility. Additionally, the Permittee had not made any Facility changes to-date based upon the recommendations to increase berm height or provide additional containment areas to accommodate a 25-year/24-hour stormwater runoff event, as outlined in the Golder memo (see Figure 8).

Table 3: Summary of Tertiary Drainage Basins

Tertiary Drainage Basins	Ponds	Tertiary Containment Volume (gallons)	25-Year Stormwater Volume (gallons)	Adequate for 25-year Stormwater
Plant 1-DB-1	Sand Creek Swale	1,663,201	2,962,934	No
Plant 1-DB-3 & Plant 1-DB-4	Webers Pond, and Finger Lake	1,573,340	5,632,252	No
Plant 2-DB-1	Plant 2 Northern Retention Basin	8,907	2,594,194	No
Plant 2-DB-2	Plant 2 South 1 Pond	170,687	1,509,075	No
Plant 2-DB-3	Plant 2 South 2, Plant 2 South 3	75,319	837,037	No
Plant 3-DB-1	Mary's Pond, Perimeter Canal	619,181	2,658,431	No

Figure 8. Golder memo excerpt.

It should be noted that Section 7.2.1.5 of the SWMP states, "Plant 1 drainage can flow westward toward the Burlington Ditch and accumulate in two collecting ponds (Finger Lake and Webber's Pond), which offer containment volumes that exceed that needed for Plant 1 associated with drainage out of inadequate secondary containments plus stormwater from areas not otherwise contained." This statement in the SWMP contradicts the statement made in Section 2.1.3.1, Plant 1, of the Facility's May 2021 SPCC Plan and Golder memo, mentioned in Figure 8 above.

The EPA Inspection Team noted instances during heavy rain events in 2015, 2016, and 2017, where the Permittee was unable to contain all stormwater runoff collected by Webber's Pond and Finger Lake resulting in discharges to both the Burlington Ditch and Sand Creek. Specifically, the Permittee reported to CDPHE that on May 10, 2015, that the Facility received heavy rain which caused Webber's Pond to overflow the western perimeter wall of the Facility and discharge into the Burlington Ditch, a water of the State (refer to Appendix A, Photograph 24). It should be noted that Facility representatives stated that Finger Lake and Webber's Pond collects both stormwater runoff and non-stormwater sources, including firefighting training waters, from throughout Plant 1.

Additionally, Suncor submitted a Corrective Action Report to CDPHE (on March 29, 2016), for storm events experienced at the Facility in late March 2016 which states (refer to Appendix B, Exhibit 8), "In order to prevent an unpermitted storm water discharge into Burlington Canal, water from SW-6 (Webber's Pond) was pumped to the area of the former pond at Sand Creek during the night of 3/24/2016 and morning of 3/25/2016. The area of the former pond was already nearly full of storm water and at 10:00 am on 3/25/2016, stormwater was discharged from Outfall 023A to prevent the water from overflowing from the former pond and swale."

Further information provided by Mr. Marler in email correspondence following the inspection, on August 2, 2021 (refer to Appendix B, Exhibit 9), stated that the temporary discharge line used for the March 25, 2016 Webber's Pond pumping and discharge event (described above) was again used on January 20, 2017 and May 11, 2017 to reduce levels in Webber's Pond and Finger Lake to prevent an overflow to the Burlington Ditch. Refer to Observation No. 2 of this report for additional details.

Since the 2015, 2016, and 2017 events described above, the Permittee has expanded and increased its treatment capacity at the WWTP (CDPS Permit No. COS0001147) to handle larger quantities of stormwater runoff able to be pumped from Finger Lake and Webber's Pond to prevent an overflow to Burlington Ditch or discharge through Outfall 023A. However, no modifications or changes have been made to stormwater impoundments as a result of the abovementioned events.

Part II.A.2, Change in Discharge, of the Permit states, "The permittee shall give advance notice to the Division of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

Whenever notification of any planned physical alterations or additions to the permitted facility is required pursuant to this section, the permittee shall furnish the Division such plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge, the stream, or ground water. If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application and shall follow the procedures specified in Sections 61.5 through 61.6, and 61.15 of the Colorado Discharge Permit System Regulations."

Observation 2. The EPA Inspection Team did not observe documentation that pumping events from Webber's Pond to Outfall 023A, due to storm events in January and May 2017 in order to prevent the potential for overflowing to the Burlington Ditch were reported to CDPHE and there is no note of these occurrences in the 2017 Annual Report. A temporary discharge line is visible in Google Earth aerial imagery dated May 13, 2017, June 9, 2017, and May 31, 2018 (refer to Appendix B, Exhibits 4, 5, and 6, respectively). The additional information provided by Mr. Marler via email following the inspection indicates that this temporary discharge line was ultimately dismantled in 2018 (refer to Appendix B, Exhibit 9).

Part I.A.2 Allowable Non-Stormwater Discharges, of the Permit does not authorize the discharge of contaminated groundwater.

Observation 3. The EPA Inspection Team observed that contaminated groundwater enters the Outfall 023A stormwater detention area and is discharged through Outfall 023A to Sand Creek, which is not authorized by the Permit.

Facility representatives stated that during wet weather events and times of elevated groundwater levels, contaminated groundwater periodically surfaces to a vegetated swale on the inside of the slurry wall, near the wastewater (CDPS Permit No. COS0001147) Outfall 020A to Sand Creek, referred to as the Sand Creek Swale Pond. Facility representatives stated historic groundwater contamination has been identified at this location on the Facility's property and near the boundary with Sand Creek since the previous owner, Conoco Phillips, operated the Facility. Suncor acquired the property and/or portions thereof from approximately 2003 to 2005.

Water captured in the Sand Creek Swale Pond is typically allowed to evaporate or infiltrate back into the ground where it can be pumped to the GWTS; however, Mr. Marler explained that during significant storm events, contaminated groundwater commingled with stormwater exits the southwest side of the swale and flows unimpeded into the Outfall 023A stormwater detention area (refer to Appendix A, Photographs 6, 12, and 13). GoogleEarth aerial imagery from May 13, 2017 shows the Sand Creek Swale Pond and Outfall 023A stormwater pond as hydraulically connected (refer to Appendix B, Exhibit 4) The EPA Inspection Team observed two manual release gate check valves: one for the stormwater detention area and one for the discharge through Outfall 023A to Sand Creek (refer to Appendix A, Photographs 6, 7, and 8). Mr. Marler explained that visual observations and analytical monitoring of the stormwater detention area is conducted prior to opening the two check valves and discharging to Outfall 023A. The Permittee has constructed netting over the Sand Creek Swale Pond to prevent wildlife access (refer to Appendix A, Photograph 12).

Per the Permittee's 2016 Annual Report (refer to Appendix B, Exhibit 10), "Stormwater discharge from Outfall 023A (Sand Creek former pond area) exceeded the permit 30-day average benzene benchmark concentration of 5 ug/I on 3/25/2016." "The area of the former pond was already nearly full of storm water and at 10:00 am on 3/25/2016, stormwater was discharged from Outfall 023A to prevent the water from overflowing from the former pond and swale…The discharge showed no visible signs of contamination, and a sample of water in the area of the outfall taken on 3/23/2016 was below the detection limit for benzene. However, two samples taken of the discharge on 3/25/2016 both exceeded the benchmark concentration. It is believed that hydrocarbons coming to the surface in the swale likely contributed to the benzene exceedance. The

hydrocarbons came to the surface during the time the remediation wells lost power as a result of the Substation 16 power cutover."

The Permittee's March 29, 2016 Corrective Action Report further states (refer to Appendix B, Exhibit 8), "In the event that accumulated stormwater in the area of Sand Creek swale threatens to flow offsite from the former pond area, pumps and piping/hose will be proactively set up to transfer the water to the WWTS headworks or 4th Lagoon rather than directly discharging via Outfall 023A. Written directions and specifications for setting up the pumping will be prepared." Mr. Marler explained that the Facility also discharged stormwater from Outfall 023A in May 2021 and June 2021 due to significant storm events. However, it is unclear why the water was not pumped to the WWTP as specified by the written directions noted in the Permittee's March 29, 2016 Corrective Action Report or if the commingled contaminated groundwater in the Sand Creek Swale Pond and stormwater detention area were prevented from being discharged through Outfall 023A during these storm events.

According to Facility representatives, the current GWTS and slurry wall, used to treat and control groundwater, was constructed by Conoco Phillips in approximately 2001. The Permittee is in-process of constructing a new subsurface slurry wall and upgrades to the GWTS wells to create an additional interstitial space between the two slurry walls along the northern property boundary with Sand Creek extending toward Brighton Boulevard. This project is in response to an Order from CDPHE based on ongoing pollutant discharges (i.e., sheens) observed in Sand Creek.

The slurry wall is intended to inhibit contaminated groundwater migration to the surface and into Sand Creek. Currently, approximately 30 groundwater wells within the slurry wall pump contaminated groundwater to the Facility's GWTS for treatment. The EPA Inspection Team noted a recent, May 7, 2020 (CDPHE Case No. 2020-0222), where the Permittee reported a visible oil sheen on Sand Creek approximately 500 feet upstream of wastewater (CDPS Permit No. COS0001147) Outfall 020A. Facility representatives stated that this was likely caused by seepage from the historic groundwater contamination beyond the subsurface slurry wall to Sand Creek.

Part I.A.2, Allowable Non-Stormwater Discharges, of the Permit states, "The following non-stormwater discharges are authorized by this permit provided that appropriate control measures are implemented to minimize erosion and sediment transport resulting from such discharges, and the non-stormwater component(s) of the discharge and the control measure(s) used are identified in the SWMP (see Part I.G of SWMP—Specific SWMP Requirements):

a. Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids."

And

Part I.B.2.e, Erosion and Sediment Controls, of the Permit states, "The permittee must stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions taken to meet this effluent limit, flow velocity dissipation devices must be placed at discharge locations and within outfall channels where necessary to minimize erosion and/or settle out pollutants."

Observation 4. During the inspection, the EPA Inspection Team observed a continual non-stormwater flow (i.e., cooling water) eroding the ground surface and causing sediment transport to flow into the open stormwater concrete conveyance channel along the east perimeter of

Plant 3 that subsequently flows to Mary's Pond and/or Outfall 026A. Mr. Marler stated the source of the flow was non-contact cooling water from the adjacent Plant 3 cooling towers. This flow appeared to have been occurring for some time as evident by channelization and erosion on the unstabilized ground surface between the cooling towers and the conveyance channel (refer to Appendix A, Photograph 31).

A Corrective Action Report from June 14, 2016 (refer to Appendix B, Exhibit 8) states, "Plant 3. Immediately following the storm event, a large amount of debris was found to have washed down the concrete channel leading to Mary's Pond, partially blocking the bar screen at the inlet to the pond. Visible signs of a high-water mark and erosion indicate that water may have discharged from the ditch just upstream of Outfall 026A. However, if this occurred, it must have been for a very brief period of time, because the water level in the ditch was approximately 2 feet below the top of the ditch soon after the storm, and there was more than adequate capacity remaining in Mary's Pond…Whether or not an actual discharge occurred, it is clear that a buildup of debris in the channel has the potential for backing up stormwater in the channel which could result in a preventable stormwater discharge. Furthermore, signs of erosion east of Outfall 026A indicate that there is a potential for discharge to the east of the designated discharge structure."

This issue was also identified by the Facility's contract inspectors from PSS during monthly stormwater inspections on June 17, 2019 and September 9, 2019 (refer to Appendix B, Exhibit 11).

Part II.A.9, Proper Operation and Maintenance, of the Permit states, "The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance and adequate laboratory and process controls, including appropriate quality assurance procedures (40 CFR 122.41(e)). This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when necessary to achieve compliance with the conditions of the permit."

Observation 5. At the time of the inspection, the EPA Inspection Team observed accumulated sediment and vegetative growth in the stormwater detention basin upgradient of Outfall 021A and in the stormwater detention basin associated with Outfall 022A located at the Suncor "Nelson Property." Accumulated sediment was observed in the valley/gutter stormwater conveyance channel that flows north into the basin associated with Outfall 021A (refer to Appendix A, Photographs 14 and 15). Additionally, significant vegetative growth was observed potentially diminishing the capacity and effectiveness of the basin located in the northwest corner of the Nelson Property (refer to Appendix A, Photograph 16).

Observation 6. The EPA Inspection Team observed Webber's Pond to be in need of maintenance. Specifically, the EPA Inspection Team observed evidence of erosion and rill formation on the east embankment of Webber's Pond resulting in deposition of sediment into the pond (refer to Appendix A, Photographs 32 and 33). Additionally, the EPA Inspection Team observed trash and debris within the pond (refer to Appendix A, Photographs 18 and 19) and a torn and deteriorated poly liner on the central-east side of Webber's Pond (refer to Appendix A, Photographs 33 and 36). Furthermore, Mr. Marler explained that to the best of his knowledge, Webber's Pond has never been maintained due to risk associated with tearing the poly liner of the pond.

Part I.B.1, Effluent Limitations, Permitted Features, requires the Permittee to discharge and monitor only from those permitted discharge features (i.e., outfalls) specified in the Permit.

Observation 7. The EPA Inspection Team observed evidence of a previous stormwater discharge and release of sediment offsite from the southern boundary of the Facility, just south of Webber's Pond at a location not specified in the Permit. Uncovered and uncontained used chemical and oil totes and drums were observed adjacent to the Facility's southern perimeter in this area. Accumulated sediment against the perimeter wall indicated an area where stormwater runoff had accumulated. The depth of sediment and grit in this location was at or near the height of the perimeter wall. A visible crack in the wall was observed along with evidence that stormwater and sediment had previously mobilized through and onto the ground surface offsite and south of the Facility boundary (refer to Appendix A, Photographs 25 through 30). Section 7.2.1, Structural Controls and Best Management Practices, of the SWMP, states that "All drums and containers are labeled and closed/secured with lids" and "Berms and surface structures have been located to limit uncontrolled movement of stormwater runoff." Part II.A.8 of the Permit, Discharge Point, states, "Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited."

Part I.F.1., SWMP Requirement, of the Permit states, "The permittee must develop, implement, and maintain a SWMP for each facility authorized by this permit."

Observation 8. The EPA Inspection Team observed uncovered scrap and waste dumpsters immediately upgradient the Webber's Pond stormwater control. Evidence of leaching from the dumpsters was observed (refer to Appendix A, Photograph 35). Section 7.1.2, Materials Handling, of the SWMP (refer to Appendix C) stated "Storage of any scrap/surplus materials that may contain deleterious or hazardous wastes within any of the storm water control areas is prohibited."

Observation 9. The EPA Inspection Team observed, six (6) hazardous waste storage dumpsters outside secondary containment and the designated Hazardous Wastes Storage Area directly east of Webber's Pond. Mr. Marler explained that the Facility generates larger amounts of hazardous waste during turnaround events, and the paved surface area directly east of the Hazardous Wastes Storage Area containment area is often used as overflow during these times. The EPA Inspection Team observed that this area did not provide secondary containment and that stormwater runoff from this overflow area would flow north and west into a storm drain that flows into the adjacent Webber's Pond (refer to Appendix A, Photographs 37, 38, and 39).

Part I.I.2., Representative Sampling, of the Permit states, "Samples and measurements taken as required herein shall be representative of the nature of the monitored discharge."

Observation 10. The EPA Inspection Team observed that the sampling activities conducted for Outfall 021A may not be representative of the quantity and quality of stormwater discharges from the Facility's Nelson Property. Specifically, Outfall 021A is located at the outlet of the northeastern stormwater detention basin of the Nelson Property. Mr. Marler identified the stormwater monitoring point and explained that this point is located at a low point just outside the property fence line along Colorado Boulevard (refer to Appendix A, Photographs 3, 4 and 5). He explained that a single storm drain culvert owned by the City of Commerce City also flows into this low point, accumulating stormwater runoff from the Nelson Property and City of Commerce City, and that it is difficult to collect a sample and visually monitor Facility discharges at this location because Facility runoff comingles

with stormwater runoff from the City of Commerce City's Colorado Boulevard. Additionally, he explained that during significant storm events, stormwater collected in this low point does not discharge anywhere but rather backs up into the Nelson Property and adjacent right-of-way. Section 8.1 of the SWMP (refer to Appendix C) states the Facility does not discharge to an MS4.

Part I.G.7, Inspection Procedures and Documentation, of the Permit states, "The permittee shall document inspection procedures, and maintain such procedures and other documentation with the SWMP, as follows:

A. The permittee shall document procedures for performing the facility inspections required by Part I.H (Inspections) of the permit. Procedures must identify:

i) Person(s) or positions of person(s) responsible for inspection;
ii) Schedules for conducting inspections; and
iii) Specific items to be covered by the inspection, including inspection schedules for specific outfalls."

Observation 11. The EPA Inspection Team observed that the Permittee had not adequately documented and described the processes and procedures in the SWMP for how the Facility will conduct and document Facility inspections by Part I.G.7 of the Permit. Section 7.1.3 of the SWMP does not identify that inspections are conducted by Suncor's contractor, PSS, and is vague about inspection frequencies (refer to Appendix C). The SWMP identifies visual inspections and employee audits as on-going; however, Section 4.4 of the SWMP states, "Refer to Appendix D for Monthly Inspection Forms." Appendix D of the SWMP only included a form titled "Stormwater Inspection Form" which does not indicate a monthly frequency for completion.

Part I.G.3., Facility Map, of the Permit states, "The SWMP shall include a legible site map(s), showing the entire facility, and vicinity as appropriate, identifying" (items a through l of the Permit).

Observation 12. The EPA Inspection Team observed that the SWMP site maps (referred to as Figures 1 through 4, and 6 through 10 in the SWMP; Appendix C) do not identify multiple elements required by Part I.G.3 of the Permit, including stormwater inlets, conveyances, stormwater flow direction, structural controls, and locations of pollutant sources. The SWMP site maps appear to only indicate the boundaries of each Facility SWA. The EPA Inspection Team noted that some of this information was included in the SPCC Plan maintained by the Permittee.

Observation 13. The maps and description of discharges included in the SWMP were not representative of conditions observed onsite at the time of the inspection. The EPA Inspection Team observed that the Figure 4 narrative of the SWMP identifies several storm drains in the center of the Nelson Property that convey stormwater to "the City's storm water sewer system"; however, Facility representatives stated there are no storm drains located at the Nelson Property (confirmed during course of field inspection).

Further, Section 8.1 of the SWMP (refer to Appendix C) states the Facility does not discharge to an MS4; however, the EPA Inspection Team observed stormwater runoff at the Facility Nelson Property was conveyed by valley gutters into two stormwater detention basins in the northeast and northwest corners of the property equipped with stormwater outfall structures to the Commerce City MS4 along Colorado Boulevard (refer to Appendix A, Photographs 3, 4, and 5).

Part I.H.3., Inspection Documentation, of the Permit states, "The permittee shall document the findings for each inspection in an inspection report or checklist, and keep the record onsite with the facility SWMP. The permittee shall ensure each inspection report documents the observations, verifications and assessments required in Part I.H.2above, and additionally includes

a. Weather information and a description of any discharges occurring at the time of the inspection."

Observation 14. The EPA Inspection Team observed multiple monthly Facility inspection reports from 2018, 2019, and 2020 that do not document weather information at the time of the inspection. The following monthly inspection reports reviewed did not identify the weather information at the time of these Facility stormwater inspections (refer to Appendix B, Exhibit 7 for Page 1 only copies of the reports):

- August 20, 2018
- April 15, 2019
- October 14, 2019
- December 16, 2019
- January 15, 2020

Part I.G.8., Monitoring Procedures and Documentation, of the Permit states, "The permittee shall document monitoring procedures, and maintain such procedures and other documentation with the SWMP, as follows:

b. The permittee shall document procedures for performing the monitoring required by the permit.
c. For each type of monitoring, procedures must identify
   i) Locations where samples are collected, and outfall identification by its unique identifying number
   ii) Staff responsible for conducting stormwater sampling
   iii) Procedures for sample collection and handling, including any deviations from sampling within the first 30 minutes of a measurable storm event (see Part I.I.5);
   iv) Parameters for analysis, holding times and preservatives, analytical methods, and laboratory quantitation levels;
   v) Procedures for sending samples to a laboratory;
   vi) The numeric control values (benchmarks, effluent limitations guidelines, TMDL-related requirements, or other requirements) applicable to discharges from each outfall."

Observation 15. The EPA Inspection Team observed that Section 9.5, Sampling, of the SWMP (refer to Appendix C) incorrectly identifies the Permittee's contract laboratory as Test America; however, Facility representatives confirmed the contract laboratory used for stormwater sample analysis as Technology Laboratories in Fort Collins, Colorado.

Observation 16. The EPA Inspection Team observed that Section 9.5, Sampling, of the SWMP (refer to Appendix C) incorrectly states that pH does not have a holding time. Sample procedures and methods in 40 CFR 136 identifies the required holding time for a pH sample as 15 minutes.

Part I.I.1., Monitored Outfalls, of the Permit states, "Applicable monitoring requirements apply to each outfall authorized by this permit."

Observation 17. The EPA Inspection Team observed that Outfall 027A, located at Plant 2, is no longer used according to Facility representatives, and potentially should be removed as an outfall from the Permit during any future Permit renewals.

IV. CLOSING CONFERENCE

At approximately 3:00 p.m. on June 24, 2021, the EPA Inspection Team met with the Facility representatives for a closing conference and shared preliminary observations. Additional Suncor and CDPHE personnel called in remotely to the closing conference who were not otherwise present during the onsite inspection. The EPA Inspection Team reiterated that all preliminary observations discussed were not compliance determinations. Any preliminary observations shared were subject to further investigation by the EPA Inspection Team upon the additional review of records and documentation. Additional observations may be contained in this inspection report that were not identified at the time of the closing conference after the additional review of materials following the inspection.

The inspection concluded on June 24, 2021 at approximately 3:40 p.m. (MDT).