EPC STORMWATER REVIEW COMMENTS
IN ORANGE BOXES WITH BLACK TEXT

McDonald's at Fontaine and Marksheffel

STORMWATER MANAGEMENT PLAN (SWMP)
EDARP FILE NO.: EA2467
EPC FILE NO: PPR2427

OCTOBER 2024

Prepared By:

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McDonald's USA, LLC
110 N. Carpenter Street
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206.348.4374

Stormwater Manager:

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ENGINEER'S STATEMENT

"The Stormwater Management Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County and State for Stormwater Management Plans."

Signature:_____ Date:_____

Printed Name: JESSICA MCCALLUM, P.E.

DEVELOPER/OWNER'S STATEMENT

"The owner will comply with the requirements of the Erosion and Stormwater Quality Control Plan including temporary BMP inspection requirements and final stabilization requirements. I acknowledge the responsibility to determine whether the construction activities on these plans require Colorado Discharge Permit System (CDPS) permitting for Stormwater discharges associated with Construction Activity."

Developer/Owner Signature:_____

Name of Developer/Owner: Robert Yagusesky Date: _____

DBA: McDonald's USA, LLC Phone: 206.348.4374

Title: Area Construction Manager Email: Robert.Yagusesky@US.MCD.com

Address:110 N. Carpenter Street, Chicago, IL, 60607 Fax:_____

REVIEW ENGINEER

"The Stormwater Management Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request."

Signature:_____ Date:_____

Printed Name:

PERMITTEE / OPERATOR RESPONSIBILITIES

This Stormwater Management Plan (SWMP) is prepared for McDonald's USA, LLC (the "Developer") to meet the Construction Activities Stormwater Management Plan for the El Paso County (The County) and the State of Colorado Department of Public Health and Environment (CDPHE) for NEC Fontaine Boulevard and Marksheffel Road, Colorado Springs, CO (the "Project"). This narrative, in conjunction with the Stormwater Management Plans included in the Appendices, examines measures taken onsite to improve stormwater quality leaving the site, and addresses important erosion control measures implemented prior to and during construction. A general overview of the procedures outlined in the SWMP which the Operator (the "Contractor") shall follow is provided below for reference.

	Responsibility Operator
1. Submit and Receive the Colorado Discharge Permit System (CDPS) General Permit (COR090000) through CDPHE	☐
2. General Contractor to provide the CDPS permit.	☐
3. Complete the Permittee / Operator SWMP Certifications provided within the SWMP Narrative.	☐
4. Complete the Operator / Qualified Stormwater Manager Contact Information identified in the SWMP Narrative.	☐
5. Post the Site in accordance with the requirements identified on the Erosion and Sediment Control Plans.	☐
6. Commence BMP installation and construction in accordance with the Phased BMP Implementation in the ESC Plans.	☐
7. Complete Land Disturbance / BMP Installation/ Stabilization Log, a copy of which is included in the appendices of this report.	☐
8. Complete Inspections in accordance with the SWMP Inspection Schedule and Procedures outlined within the SWMP Narrative.	☐
9. Complete field maintenance or field modifications to Stormwater Management Practices based upon the results of the Inspection.	☐
10. Maintain current records of the SWMP Inspections in accordance with the Inspection Record Keeping identified in the SWMP Narrative in under the Inspection and Maintenance Section.	☐
11. Maintain current records of the Land Disturbance / BMP Installation/ Site Stabilization Log, a copy of which is included in the appendices of this report.	☐
12. Maintain current records of the BMP Corrective Action Log, a copy of which is included in the appendices of this report.	☐
13. Maintain current records of the SWMP Amendment Log, a copy which is included in the appendices of this report.	☐
14. Achieve Final Stabilization in accordance with the Final Stabilization practices outlined within the SWMP Narrative.	☐
15. File the City Construction Stormwater Inactivation Notice.	☐

This summary is provided for Permittee / Operator convenience only and shall not be considered all-inclusive with respect to stormwater management responsibilities. The Permittee / Operator shall familiarize themselves with the CDPS General Permit and SWMP and implement stormwater management strategies based upon the recommendations identified herein and varying site conditions.

GENERAL REQUIREMENTS

INTRODUCTION AND PURPOSE

This SWMP is provided to support the approval of the Stormwater Management Plan through the County and the issuance of a Colorado Discharge Permit System General Permit (CDPS Permit) through CDPHE. This Report, in conjunction with the Stormwater Management Plan Construction Drawings, provides a site and project understanding along with guidelines for implementation and maintenance of erosion, sediment and stormwater quality control measures prior to and during construction of the Project.

The primary goal of pollution prevention efforts during project construction is to control sediment and pollutants that originate on the site and prevent them from flowing to surface waters. The purpose of this SWMP is to provide guidelines for achieving that goal. A successful pollution prevention program also relies upon careful inspection and adjustments during the construction process in order to enhance its effectiveness.

This SWMP must be implemented before construction begins on the site. It primarily addresses the impact of storm rainfall and runoff on areas of the ground surface disturbed during the construction process. In addition, there are recommendations for controlling other sources of pollution that could accompany the major construction activities. Applicability of this SWMP shall be terminated when disturbed areas are stabilized, temporary erosion controls are removed, and construction activities covered herein have ceased.

PERMIT COVERAGE AND APPLICATIONS

Based upon a Site Disturbance Area of one (1) acre or more, this site requires a Colorado Discharge Permit System (CDPS) - Stormwater Discharge Associated with Construction Activities Application (the General Permit) through the Colorado Department of Public Health and Environment (CDPHE).

The primary goal of pollution prevention efforts during Project construction is to control sediment and pollutants that originate on the site and prevent them from flowing to surface waters. A successful pollution prevention program also relies upon careful inspection and adjustments during the construction process to enhance its effectiveness. It is the intent of this plan to implement stormwater control measures, also referred to as best management practices (BMP) for enhancing the quality of stormwater discharges associated with the construction activity. Control measures designs are based on the criteria set forth by the General Permit, the Urban Storm Drainage Criteria Manual, Volume 3, El Paso County Drainage Criteria Manual Vol. 2 (“DCM”) and the El Paso County Engineering Criteria Manual (“ECM”). This plan must be implemented before construction begins on the site. It primarily addresses the impact of storm rainfall and runoff on areas of the ground surface disturbed during the construction process. In addition, there are recommendations for controlling other sources of pollution that could accompany the major construction activities. Applicability of this plan shall be terminated when disturbed areas are stabilized, temporary erosion controls are removed, construction activities covered herein have ceased and the permit has been inactivated.

DEFINITIONS

CDPHE – Colorado Department of Public Health and Environment

Operator – The group or individual that is responsible for day-to-day operations on the project site. The Operator will be assigned the Qualified Stormwater Manager role and these terms are used interchangeably in the SWMP.

SWMP – Construction Activities Stormwater Management Plan

Qualified Stormwater Manager – The specific individual(s), position or title that is responsible for developing, implementing, maintaining and revising the SWMP. The activities and responsibilities of the Manager shall address all aspects of the facility's SWMP. The Operator will be assigned the Qualified Stormwater Manager role and these terms are used interchangeably in the SWMP.

SITE DESCRIPTION

GENERAL PROJECT DESCRIPTION

The proposed McDonald's development is located within a portion of the south half of the southeast Quarter of Section 15, Township 15 South, Range 65 West of the 6th Principal Meridian, County of El Paso, State of Colorado. The site is bounded by proposed commercial developments to the east and west, a proposed storage development to the north, and Fontaine Boulevard to the south.

The Site is approximately 1.263± acres total and 1.10± acres are anticipated to be disturbed as part of this Project. The site is zoned commercial service (CS). The Project will consist of grading within the limits of construction and the construction of one McDonald's fast-food restaurant with dual drive-thru, associated parking, landscaping, and utility infrastructure.

PROJECT CONTACTS

SWMP PREPARER

Company:	Kimley-Horn and Associates, Inc.
Contact:	Jessica McCallum, P.E.
Address:	2 North Nevada Avenue, Suite 900
	Colorado Springs, CO 80903
Phone:	719.453.0180
Email:	Jessica.McCallum@Kimley-Horn.com

QUALIFIED STORMWATER MANAGER

Company:	
Contact:	
Address:	

Phone:

Email:

PROJECT LOCATION AND HISTORICAL LAND USE

City/County: City of Colorado Springs / El Paso County

Section/Township/Range: Section 15 / Township 15 South / Range 65 West

Existing Address:

Latitude/Longitude: 38.738305, -104.648182

ADJACENT LAND USE

- North: Proposed Storage
- East: Proposed Fast Food
- South: Fontaine Boulevard
- West: Proposed Convenience Store

HISTORICAL LAND USE

- The overall parcel is undeveloped, with the only existing structure being a screening wall. The Leased Parcel is currently undeveloped and vacant. Adjacent properties to the north, east, and west are also undeveloped.

VICINITY MAP

A vicinity map is provided below for reference:

Figure 1: The location of the project site (NTS)

EXISTING SITE INFORMATION

Threatened and Endangered Species

No known threatened or endangered species have been observed within the project area.

Wetlands

There are no known wetlands or wetlands channels located on the site.

Topography and Drainage Patterns

The property's existing topography generally drains to existing storm inlets in the southeast portion of the site. The overall ±1.263 acre site varies in elevation from a low of approximately 5708 feet to a high of approximately 5713 feet. Respective runoff sheet flows across the property at varying slopes, generally around 0.5% to 3%.

Site Conditions and Existing Vegetation

The leased parcel is currently undeveloped, with the exception of a screening wall that runs along the southern property line of the site. Most land cover within the leased parcel is gravel. There are native grasses and vegetation that screen the southerly property frontage and extend west into the adjacent lot, then follow the easterly property frontage northwards towards Marksheffel Road.

Soils and Erosion Potential Information

According to the United States Department of Agriculture (USDA) National Resources Conservation Service (NRCS) Soil Survey, the soils were found to consist mostly of Manzanst clay loam, 0 to 3 percent slopes which has an NRCS Soil Type of C, Wind Erodibility Index of 86, and K Factor of 0.32. Soil groups in the project vicinity are minorly to mildly susceptible to soil erosion. Sediment control logs and inlet protection shall be placed per the plans to mitigate sediment transport throughout the detention facility.

Per the geotechnical report by UES dated August 18, 2023, a shallow water table is present onsite. Site preparation, excavation, and soil improvements are to take place per the recommendations made in the geotechnical report.

Information regarding the project site soils is included in the Appendix C of this report.

Total Site Area and Disturbance Area

Site area and disturbance area for the anticipated project construction activities are as indicated below:

- The Total Site Area Contains ± 1.263 acres
- The Anticipated Project Disturbance Area Contains ±1.110 acres

These areas are as indicated on the Stormwater Management Plan Construction Drawings included in the Appendices of this report.

Flood Hazard Zone

This property is located within Zone X (areas determined to be outside of the 0.2% annual chance floodplain) as determined by the Federal Emergency Management Agency, Flood Insurance Rate Map No. 08041C0533G, effective date December 7, 2018.

PROPOSED SITE DESCRIPTION

Project Description

The project parcel contains a Leased Parcel, ±1.263 acres in size, which is the project site (Site). The project is anticipated to disturb ±1.110 acres. The site is zoned commercial service (CS). The purpose of this project is to construct one McDonald's fast-food restaurant with dual drive-thru, associated parking, landscaping, and utility infrastructure. The proposed development will consist of one 3,694 SF McDonald's restaurant.

Topography and Drainage Patterns

The existing site, and surrounding sites generally drain from northwest to southeast at grades ranging from 1%-3.5%. The runoff flows northwest to southeast to an existing storm sewer network. The proposed runoff will be captured by an onsite private storm sewer network which routes flows to the existing master development storm sewer system and is routed southeast. There are no offsite drainage conditions that directly affect the project site.

Site Vegetation

Of the ±1.110 acres to be disturbed, the site is anticipated to have 24.51% vegetative cover, including all proposed landscaping. Existing vegetative cover is impacted by the limits of disturbance for the site, and there is currently no impervious are on the existing site. In total, the site was calculated to be approximately 47.8% in the proposed condition. These calculations were performed using the recommended land use percent imperviousness values found in Table 6-3 in Urban Drainage & Flood Control (UDFCD) Manual Volume I Chapter 6.

Landscaping = 0%

Roofs = 90%

Pavement = 100%

Receiving Waters

Receiving waters were determined using the USGS website: The National Map Viewer (http://nmviewogc.cr.usgs.gov) and the State of Colorado Department of Natural Resources, Division of Water Resources Colorado River Basins map and are as follows:

- Ultimate Receiving Waters – Jimmy Camp Creek
- Stream Crossings – None currently exist on-site

PROPOSED CONSTRUCTION ACTIVITIES

Construction activities are tentatively planned to begin Spring 2025, end Fall 2025, and achieve final stabilization by Fall 2025. General construction sequencing and activities associated with this project consist of the following:

INITIAL PHASE

The Initial Phase shall consist of the temporary construction BMPs to minimize potential for erosion and sediment transfer while mobilizing and preparing the site for construction activities. Operator shall minimize site disturbance by minimizing the extent of grading and clearing to effectively reduce sediment yield. The Operator shall complete the anticipated initial phase sequencing as follows:

1. Contractor to prepare and submit the State of Colorado, Colorado Department of Public Health and Environment (CDPHE) Colorado Discharge Permit System (CDPS) General Permit or notice of reassignment if the owner has already obtained a general permit. A copy of the permit shall be provided to the Owner upon the receipt from the CDPHE.
2. Install SWMP information sign (S) in accordance with applicable City, State, and Owner requirements.
3. Ensure that general construction BMPs which are required throughout the project at locations shown on the SWMP or as dictated by construction activities are operational.
4. Install perimeter fencing (CF) and ensure that the limits of construction (LOC) are defined as necessary or known by all parties which will be responsible for construction on the site. Limit site disturbance to only those areas necessary for site demolition. Site fencing shall follow the perimeter of property.
5. Install perimeter control BMPs, silt fence (SF) and sediment control logs (SCL) as indicated on the GEC Plans.
6. Install inlet protection (IP) for existing stormwater conveyance facilities as indicated on the GEC plans or necessitated by field conditions.
7. Install stabilized vehicle tracking control pads (VTC) as indicated on the GEC Plans.
8. Construct required stabilized staging area (SSA). Notate any changes to stabilized staging area location and sizes on the SWMP. Contractor shall determine location and size that best suites the construction activity requirements. Stabilized staging areas may be adjusted and/or relocated as appropriate in this phase or future phases, based on construction activity sequencing. The SWMP shall be updated accordingly throughout the project.
9. Complete demolition of existing site improvements and clearing and grubbing of the site as necessary to proceed with initial grading operations. Stockpile materials in accordance with the stockpile management (SP) BMP. Notate any changes to stockpile location and sizes on the SWMP.
10. Contractor to implement a Noxious Weed Control Plan once disturbance begins.

INTERIM PHASE

The Interim Phase shall consist of the temporary construction BMPs to minimize potential for erosion and sediment transfer during overlot grading, utility, storm sewer, and roadway infrastructure construction, building pad preparation, and limited site improvements. The operator shall complete the anticipated Interim Phase sequencing as follows:

1. Confirm existing BMPs from the Initial Phase, which are to be maintained throughout construction, are in working order and compliant with applicable regulations.
2. Repair and/or replace any existing BMPs, including dust control, debris control, etc. which are deemed inadequate.

3. Disturb only what is necessary to extend and construct utilities, storm sewer, roadways, overlot grading, and prepare building pads.
4. Install additional inlet protection for proposed stormwater facilities as constructed in the field.
5. Temporary stabilization (TS) shall be implemented within 14 days of disturbance.
6. Contractor shall install rough cut street control within all roadways under construction that will not be paved within 14 days of grading.
7. Install concrete washout area (CWA) prior to construction of concrete improvements.
8. Complete required grading operations necessary for the construction of the proposed commercial building, associated site, and utility improvements. Stockpile materials in accordance with the stockpile management (SP) BMP.
9. Construct underground utilities, storm sewer, establish overlot grades (top of subgrade), and complete building pad preparation. Install inlet protection (IP) as storm sewer structures are constructed and conveyed to the Water Quality Facilities.

FINAL PHASE

The Final Phase shall consist of construction of industrial improvements and final stabilization of the site. The operator shall complete the anticipated Final Phase sequencing as follows:

1. Confirm existing BMPs from the Initial and Interim Phases, which are to be maintained throughout construction, are in working order and compliant with applicable regulations.
2. Repair and/or replace any existing BMPs which are deemed inadequate.
3. Complete fine grading and proceed with temporary stabilization (TS) and permanent stabilization (PS) practices in accordance with approved landscape plans.
4. Final drainage infrastructure to be installed including inlet protection (IP).
5. Continue with buildings and final Water Quality Facility/Structure construction.
6. Install final pavement for roadway infrastructure.
7. Complete grading and permanent stabilization over all areas in accordance with City, CDPHE, and Owner requirements.
8. Remove remaining BMPs once permanent stabilization (PS) has been achieved. Repair and stabilize areas disturbed through BMP removal.
9. Notify the owner of intent to file the notice of inactivation with CDPHE and receive owner acceptance to proceed with stormwater management close-out.
10. Proceed with filing the notice of inactivation with CDPHE.
11. Provide the Owner with a copy of all stormwater documentation (permits, inspection reports, logs, etc.). Upon completion of the project, file the notice of inactivation.

STORMWATER MANAGEMENT CONTROLS

QUALIFIED STORMWATER MANAGER

The Qualified Stormwater Manager is the Operator selected for the project. The Stormwater Manager is responsible for developing, implementing, maintaining, and revising the SWMP. The activities and responsibilities of the Manager shall address all aspects of the facility's SWMP.

Company:

Contact:

Address:

Phone:

Email:

SITE SPECIFIC POLLUTION SOURCES

Further identification of site-specific pollutants that fall within the categories outlined in the next section may be field noted using the corresponding log included in the appendices of this report. The logs are intended to record site specific pollutants, the date of arrival on the site, the date removed from the site, and the methods of treatment.

All concrete discharge during construction activities will be diverted to the concrete washout structure, as shown on the GEC Plans in **Appendix A.**

IDENTIFICATION OF POLLUTANT SOURCES

Evaluation of general sediment and non-sediment pollution sources associated with site construction activities, as outlined within the General Permit, consist of the following:

- **Disturbed and Stored Soils** – Earth disturbing activities (grading, excavation, etc.) will be necessary for this project; therefore, the potential exists for disturbed site soils to contribute sediment to stormwater discharges.
- **Vehicle Tracking and Sediment** – Construction traffic will be entering and exiting the Site; therefore, the potential exists for vehicle tracking to contribute sediment to stormwater discharges. Off-site soil tracking will be mitigated with the use of a VTC per El Paso County Standards. Street sweeping shall take place as necessary
- **Management of Contaminated Soils** – Contaminated soils are not anticipated on this Site. If encountered, the Qualified Stormwater Manager shall take appropriate containment and treatment measures.
- **Loading and Unloading Operations** – Loading and unloading operations will be taking place at the Site; therefore, the potential exists for these operations to introduce sediment and non-sediment pollutants to stormwater discharges.
- **Outdoor Storage of Materials** – Limited outdoor storage of materials is anticipated with construction of this site; however, outdoor storage of chemicals, fertilizers, etc. is not anticipated.
- **Vehicle and Equipment Maintenance and Fueling** – Routine maintenance and fueling of vehicles and equipment is anticipated with this Site; therefore, the potential exists for pollutants associated with these activities to contribute pollutants to stormwater discharges.
- **Significant Dust or Particulate Generating Processes** – Earth disturbing activities (grading, excavation, etc.) will be necessary for this project; therefore, the potential exists for windblown site soils to contribute sediment to stormwater discharges. Qualified Stormwater Manager shall use Dust Control and other specified BMPs from the ESCP to control sediment.
- **Routine Maintenance** – Routine maintenance involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc., other than those identified within Vehicle and Equipment Maintenance and Fueling are not anticipated with this project. If encountered, the Qualified Stormwater Manager shall take appropriate containment and treatment measures.
- **Onsite Waste Management** – Waste management consisting of dumpsters are anticipated onsite; therefore, the potential exists for these operations to introduce sediment and non-sediment pollutants to stormwater discharges. The qualified Stormwater Manager/Contractor shall routinely observe the available capacity of waste bins on site and shall inspect for leaks and discharge as well. Waste bins shall be emptied as needed, not exceeding 2-weeks.

- **Concrete Truck / Equipment Washing** – Concrete truck and equipment washing are anticipated with this project. The Qualified Stormwater Manager shall take appropriate containment and treatment measures. A concrete washout structure is proposed for the containment of concrete runoff.
- **Dedicated Asphalt and Concrete Batch Plants** – Dedicated asphalt and/or concrete batch plants are not anticipated with this project. If encountered, the Qualified Stormwater Manager shall take appropriate containment and treatment measures and document as necessary.
- **Non-Industrial Waste Sources** – Non-Industrial waste sources limited to portable sanitary facilities are anticipated with this project. Worker trash receptacles and toilets will be provided in the locations shown on the GEC Plans**.**
- **Form Oil** – If encountered, the Qualified Stormwater Manager shall take appropriate containment and treatment measures and document as necessary.
- **Pesticides and/or Herbicides** – If encountered, the Qualified Stormwater Manager shall take appropriate containment and treatment measures and document as necessary.
- **Saw Cutting Operations** – Saw cutting operations are not anticipated with this project. If water is used during saw cutting, Qualified Stormwater Manager shall take appropriate containment and treatment measures to prevent illicit material from leaving the site.
- **Additional Pollutant Sources** – Additional areas or procedures where potential spills could occur are not anticipated with this project. Should additional pollutant sources be present, contractor shall implement appropriate treatment methods; add source to this plan and report to the inspector.

Logs for the identification of pollutant sources are included in the Appendices for reference and use.

Based on the following, the potential to contribute pollutants to stormwater discharges is not significant for most of the pollutants identified above:

- Relatively Low Frequency of the Activities
- The Ability to Schedule Activities During Dry Weather
- Existing Site Topography
- The Ability to Implement Primary and Secondary Containment for Product Storage

Potential pollutant sources noted below shall be mitigated by use of Best Management Practices (BMPs) as noted in the following sections:

- Disturbed and Stored Soils
- Vehicle Tracking and Sediment
- Loading and Unloading Operations
- Outdoor Storage
- Vehicle Equipment and Maintenance Fueling
- Significant Dust or Particulate Generating Processes
- Non-Industrial Waste Sources

NON-STORMWATER DISCHARGE COMPONENTS

Only specifically authorized non-stormwater discharges are allowed to enter the storm sewer and all authorized non-stormwater discharges shall be eliminated or reduced to the extent practicable.

Appropriate BMPs shall be used to minimize the discharge of pollutants. Such control measures will be

strictly followed to ensure any impacts from non-stormwater discharges are reduced or eliminated. Appropriate BMPs are:

- Uncontaminated ground water or spring water
  If possible, direct uncontaminated ground water or spring water to stabilized points of discharge. If discharged to a disturbed area, assure measures to control erosive velocities and sediment control measures are implemented. Velocity control measures include riprap aprons and other conveyance measures. Sediment control measures might include stone check dams, sediment traps and basins.

  If uncontaminated ground water is discharged off-site, a Construction Dewatering Permit will be required. This Permit will not apply if dewatering is not performed or if water is not discharged off-site.

- Landscape Irrigation Return Flows
  Volume of water used for irrigation prior to establishment of vegetation shall be controlled to prevent excess runoff and erosion. Temporary sediment control measures shall remain in place until all upstream disturbed areas are stabilized. Sediment loss will be controlled through the use of sediment control measures such as wattles, sediment fence, and vegetative buffers.

- Concrete Runoff
  All concrete waste during construction activities will be collected using a concrete washout structure, and disposed of appropriately, as to not mix contaminants within the stormwater runoff.

BEST MANAGEMENT PRACTICES FOR STORMWATER POLLUTION PREVENTION

There are three general types of BMPs that will be utilized for the Project: Construction Control, Erosion Control, and Sediment Control BMPs. Construction Control BMPs are related to construction access and staging. Erosion Control BMPs are used to limit the amount and extent of erosion. Sediment Control BMPs are designed to capture eroded sediments prior to their conveyance offsite. Several BMPs described below may be categorized into more than one of the types described above. Also, these BMPs may be categorized into one or more of the following construction stages which pertain to the stage of development in which they may be implemented. Initial Stage BMPs shall be installed on existing grades prior to the commencement of construction activities at the outset of construction. Interim Stage BMPs shall be installed on proposed grades and drainage features after initial site grading. Final Stage BMPs shall be installed as one of the last steps in the construction process. Construction of the identified improvements will take place under two phases of construction anticipated as identified within the construction sequencing included within this report.

Refer to the Erosion and Sediment Control Plans for the location and specifications for implementation of erosion control measures for the stages of the Project. The following is a brief description of temporary sediment and erosion control BMP's to be utilized on this Site and the application those BMP's are treating.

CONSTRUCTION CONTROL

Construction entrances with Vehicle Tracking Control (VTC) per isolated area shall be installed in an effort to reduce off-site sediment tracking. The VTC shall be installed during the initial stage of construction activities.

Concrete Washout Areas (CWA) will be installed per the GEC Plans found in **Appendix A** to help isolate concrete truck washout operations. CWAs are installed when a site anticipates the generation of concrete wash water. CWAs provide an area for the proper collection and disposal of all liquid concrete waste. CWAs will be installed during the interim stage of construction activities. Three basic approaches are available to the Contractor and include an above-grade storage area, excavation of a pit in the ground, and a prefabricated haul-away concrete washout container. All concrete washout areas shall, as a minimum adhere to the following guidelines:

- Maintain a minimum distance of 400 feet from a stream or water body.
- Maintain a minimum distance of 1,000 feet from any wells or drinking water source.
- Shall not be located in a natural draw or drainage swale.
- Shall not be located in areas of highly permeable soils, i.e., gravels and sands.
- The chosen location shall be sited so that if a failure or overtopping occurs, the flow would be directed to a flat or depressed grassy area away from any water sources.
- The use of solvents, cleaners, or hazardous materials when cleaning or removing concrete is strictly prohibited.
- Backflushing shall not be permitted on site.
- Adequate and proper disposal of contents is required once the CWA has reached ½ capacity and at the end of concrete construction activities.

A SWMP Information Sign (S) provides stormwater related information for the Site and shall be located near the project entrance, visible to the public. All staging will be done at the southern portion of the Site.

EROSION CONTROL

Protection of steep slopes is anticipated on this project. Steep slopes are defined as slopes greater than 4:1 that are higher than 5-feet vertically. Temporary slopes during construction that are greater than 4:1 need to be addressed along with any permanent slopes which are greater than 4:1. The Permittee may need to implement the use of diversion ditches to reroute the storm runoff, terrace the grades to break up the flow of incidental runoff down slopes, compost mulch to protect the exposed soil or other BMP as approved by the inspector. Slopes steeper that 4:1 shall be protected with an erosion control blanket. No un-protected final grades shall be allowed greater than 3:1.

Permanent soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within fourteen (14) calendar days after final grading or the final earth disturbances has been completed. When it is not possible to permanently stabilize a disturbed area after an earth disturbance has been completed or where significant earth disturbance activity ceases, temporary soil erosion control measures shall be implemented within fourteen (14) calendar days. All temporary soil erosion control measures shall be maintained until permanent soil erosion measures are implemented.

All disturbed areas shall be stabilized as soon as possible. Seeding and Mulching (SM), to provide protection against rain and wind erosion, shall be performed temporarily, as needed, during the initial, and interim phases and maintained until final stabilization is completed. Site Stabilization will be achieved through use of temporary seeding and mulching (TS) and ultimately permanent landscaping (PS). All disturbed areas which are either final graded, or will remain inactive for a period of more than 30 days shall be required to be stabilized within 14 days of the completion of the grading activities.

SEDIMENT CONTROL

Rough Cut Street Control (RCSC) is a temporary rock or earthen berm used to control erosion and divert runoff. This BMP should be installed at construction road access points and intermittently as the proposed maintenance access road is being constructed.

Check Dams (CD) are constructed from rock, gravels, sandbags, or proprietary devices and are meant to limit erosion and reduce velocity. Check dams should be installed along all drainage swales.

Diversion Ditch (DD) are used as temporary storm drain conveyance channels to divert runoff or convey flow to sediment control BMPs. All drainage swales shall be installed to prevent ponding and riprap shall be grouted. Embankments should be compacted to ninety (90) percent of maximum density. All drainage swales shall be lined with geotextile or mat per **Erosion Control Blanket (ECB)** standards. Drainage swales shall be installed in the initial stage.

Construction Fence (CF) should be installed parallel to the Limits of Disturbance (LOD) for each phase are area of construction. Plastic mesh fence is recommended for this project.

Street Sweeping and Vacuuming (SS) is used to remove sediment that has been tracked onto a roadway and prevents sediment from being swept or washed into the storm drain or surface drainage system. Paved and impervious surfaces which are adjacent to construction sites must be swept on a weekly basis or as needed during the week when sediment and other materials are tracked or discharged onto them. Either sweeping by hand or use of street sweepers is acceptable. Street sweepers using water while sweeping is preferred in order to minimize dust. Scraped or swept material shall not be deposited in the storm sewer. Materials collected by the inlet protection shall be removed and shall not be deposited in the storm sewer.

Temporary and Permanent Seeding (TS/PS) is used to stabilize areas that have been disturbed but will be inactive for thirty (30) days or more. Refer to the DEN Turf and Grass Technical Specification for seeding requirements prior to seeding. Drill seeding is the recommended method. Hand seeding is preferred to hydroseeding in areas where the slope will not allow drilling equipment. The soil must be capable of revegetation, which may require imported topsoil of the existing soil may have to be amended so that proper conditions can be achieved. Before grading is completed, a minimum of six (6) inches of topsoil should be salvaged. Surface roughening or rototilling will need to be performed after any grading operations.

Inlet Protection (IP) serves to reduce the sediment in runoff from entering inlets. Inlet protection should be installed at all existing inlets to remain and proposed inlets. Protection should be installed immediately after completion of construction of inlet. Silt fence and straw are not acceptable forms of inlet protection at DEN.

Temporary Outlet Protection (OP) is intended to reduce any erosion that may occur downstream of the outlet. Outlet protection should be installed at all existing outlets to remain and all proposed outlets. Protection should be installed immediately after completion of construction of outlet. If riprap outlet protection is used, it must be grouted.

Earth Dikes (ED) are used to divert and slow runoff. Earth dikes are installed parallel to select Drainage Swales (DS) to provide settling prior to runoff discharge into swale. Earth dikes should also be installed in upstream construction areas where disturbance will occur, such as around the Stabilized Staging Area

(SSA). All earth dikes shall be installed to prevent ponding and riprap shall be grouted. Embankments should be compacted to ninety (90) percent of maximum density.

Terracing (T) is the grading of steep slopes into a series of flat or nearly flat sections to shorten uninterrupted flow lengths on steep slopes to control erosion. Terraces should be graded back to slope at a minimum three (3) percent grade and should be compacted to ninety (90) percent of maximum density.

Rock Socks (RS) are placed upstream of inlets to prevent transport of sediment. Rock socks should be installed in the locations indicated on the GEC Plans. They should be installed at angles along the curb line, typically near inlet protection or access driveways.

Sediment Basins (SB) or Sediment Traps (ST) are ponds designed to capture sediment from eroded or disturbed soil. Due to the disturbed greater than 1-acre, one SB or two ST are required. Two sediment traps are provided – sized/located to capture the entire disturbed area. 2 Sediment Basins are shown on the plans. Revise accordingly

Stockpile Management (SP) is intended to minimize erosion and sediment transport from soil stockpiles. All stockpiles shall be protected from stormwater with the use of appropriate erosion and sediment control BMPs to inhibit soil transport as well as at material storage areas. All stockpiles shall:

- Not be located adjacent to a waterway.
- Be stabilized within 14 days after establishment for stockpiles lasting more than 30 days. Stabilization shall include, but not be limited to, surface roughening, seeding, and mulching.
- Not exceed 15 feet in height.
- Utilize earth dikes on all down slope sides of the stockpile.

ADDITIONAL BMP DETAILS

The Permittee is not to affect areas beyond the Limits of Disturbance (LOD) noted on the GEC Plans without the approval of the Inspector, adjacent property owners, and the Engineer of Record. Vehicle Tracking Control (VTC) is provided at each area of construction. Construction traffic shall be limited to these access points. All construction site operators shall control waste such as discarded waste materials, hazardous chemicals (to include but not be limited to, heavy equipment maintenance fluids, motor oil, antifreeze and secondary containment of vehicle fuel), litter, and sanitary waste at the construction site that may cause adverse impacts to water quality. Chemicals, paints, solvents, fertilizers, and other toxic materials must be stored in weatherproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated, and disposed at an approved solid waste or chemical disposal facility.

Throughout build-out, the developer shall be responsible for implementing and maintaining Best Management Practices (BMPs) to control erosion and sediment problems on all idle areas of the project.

All persons engaged in earth disturbances shall design, implement, and maintain acceptable soil erosion and sedimentation control measures, in conformance with the erosion and sediment control technical standards adopted by DEN and CCD. All temporary erosion and sediment control facilities, and all permanent facilities intended to control erosion of any earth disturbance operation shall be installed before any earth disturbance operations take place. Any earth disturbances shall be conducted in such a manner so as to effectively control runoff volumes, reduce accelerated soil erosion, sediment movement, and deposition off-site. All earth disturbances shall be completed in such a manner so that the total amount of soil exposed at any given time shall be minimized, and the exposed area of any disturbed land

shall be limited to the shortest possible period of time. Temporary soil erosion control facilities shall be removed and earth disturbance areas graded and stabilized with permanent soil erosion control measures pursuant to approved plans and specifications.

A Land Disturbance, BMP Installation, and Stabilization Log is provided in the Appendices and shall be filled out accordingly during BMP implementation.

OTHER POTENTIAL POLLUTION CONSIDERATIONS

MATERIALS HANDLING AND SPILL PREVENTION

Any hazardous or potentially hazardous material that is brought onto the construction site shall be handled properly in order to reduce the potential for stormwater pollution. In an effort to minimize the potential for a spill of petroleum product or hazardous materials to come in contact with stormwater, the following steps shall be implemented:

- Material Safety Data Sheets (MSDS) information shall be kept on site for any and all applicable materials.
- All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, additives for soil stabilization, concrete, curing compounds and additives, etc.) shall be stored in a secure location, under cover and in appropriate, tightly sealed containers when not in use.
- The minimum practical quantity of all such materials shall be kept on the job site and scheduled for delivery as close to time of use as practical.
- A spill control and containment kit shall be provided on the construction.
- All of the product in a container shall be used before the container is disposed of. All such containers shall be triple rinsed, with water prior to disposal. The rinse water used in these containers shall be disposed of in a manner in compliance with State and Federal regulations and shall not be allowed to mix with stormwater discharges.
- All products shall be stored in and used from the original container with the original product label and used in strict compliance with the instructions on the product label.
- The disposal of excess or used products shall be in strict compliance with instructions on the product label.

Fueling for construction is anticipated to be conducted with a fuel truck that will not be kept permanently on-site. If utilized, temporary onsite fuel tanks for construction vehicles shall meet all state and federal regulations. Tanks shall have approved spill containment with the capacity required by the applicable regulations. From NFPA 30: All tanks shall be provided with secondary containment (i.e. containment external to and separate from primary containment). Secondary containment shall be constructed of materials of sufficient thickness, density and composition so as not to be structurally weakened as a result of contact with the fuel stored and capable of containing discharged fuel for a period of time equal to or longer than the maximum anticipated time sufficient to allow recovery of discharged fuel.

The tanks shall be in sound condition free of rust or other damage which might compromise containment. Fuel storage areas shall meet all Environmental Protection Agency (EPA), OSHA and other regulatory requirements for signage, fire extinguisher, etc. Hoses, valves, fittings, caps, filler nozzles and associated hardware shall be maintained in proper working condition at all times. The location of fuel tanks shall be shown on the Site Maps and shall be located to minimize exposure to weather and surface water drainage features.

The Operator shall develop and implement a Materials Handling and Spill Prevention Plan (MHSPP) in accordance with the EPA and State of Colorado requirements. In the event of an accidental spill, immediate action shall be undertaken by the Operator to contain and remove the spilled material. All hazardous materials, including contaminated soil, shall be disposed of by the Operator in the manner specified by federal, state and local regulations and by the manufacturer of such products.

For ANY suspected or confirmed release or spill of oil, fuel, solid waste, hazardous waste, unknown materials, lavatory waste, or miscellaneous chemicals, etc., that occurs as the result of the Contractor's activities on the property, the Contractor is required to take immediate action to mitigate the release or spill and report it to the DEN Project Manager and to the DEN Communications Center at **(303) 342-4200**. As required under the provisions of the Clean Water Act and DEN Division 01 Specification Section 015719 – Any spill or discharge entering waters of the United States shall be properly reported. The Operator shall prepare a written record of any spill and associated clean-up activities of petroleum products or hazardous materials in excess of 1 gallon or reportable quantities, whichever is less.

Accidental spills shall be handled expeditiously as outlined in CDPHE guidance. Any spills of petroleum products or hazardous materials in excess of Reportable Quantities as defined by EPA or the state or local agency regulations, shall be immediately reported to the DEN Communications Center.

A Spill Response Plan has been provided in **Appendix H.**

VEHICLE TRACKING AND DUST CONTROL

Vehicle Tracking Control BMPs (structural and non-structural) shall be implemented in order to control potential sediment discharges from vehicle tracking. Practices shall be implemented for all areas of potential vehicle tracking which include, but are not limited to reduced site access and utilization of designated haul routes.

Areas of soil that are denuded of vegetation and have little protection from particles being picked up and carried by wind should be protected with a temporary cover or kept under control with water or other soil adhering products to limit wind transported particles exiting the site perimeter.

WASTE MANAGEMENT AND DISPOSAL

An effective first step towards preventing pollution in stormwater from work sites involves using a common sense approach to improve the facility's basic housekeeping methods. Poor housekeeping practices result in increased waste and potential for stormwater contamination.

No solid materials are allowed to be discharged from the site with stormwater. All solid waste, including disposable materials incidental to the construction activities, must be collected and placed in containers. Secure covers for the containers shall be provided at all times to meet state and local requirements. The location of solid waste receptacles shall be identified on the SWMP by the Operator. Containers shall be removed and replaced as necessary, not exceeding 2-weeks at a time during active construction activities.

Concrete waste is anticipated with this project; and therefore, a dedicated concrete washout is required. The Qualified Stormwater Manager shall take appropriate containment and treatment measures and document as necessary.

GROUNDWATER AND STORMWATER DEWATERING

Except as noted below, all discharges covered by this permit shall be composed entirely of stormwater associated with construction activity.

- Emergency Fire Fighting Activities
- Uncontaminated Spring Water or Ground Water
- Landscape Irrigation Return Flows

Groundwater dewatering may be required during storm sewer infrastructure excavation. If encountered, the operator shall file for appropriate dewatering permits (Permit No. COG070000) with the CDPHE. Testing and monitoring of the dewatered discharge may be required depending on where the water is discharged. Typically, the flow, pH, oil and grease, and total suspended solids shall be monitored at a minimum. Specific monitoring and testing requirements for the discharge outfall will vary depending on location. Once dewatering is determined to be required, CDPHE shall be contacted to determine these requirements.

STABILIZATION AND STORMWATER MANAGEMENT

TEMPORARY STABILIZATION AND SHORT-TERM STORMWATER MANAGEMENT

The County considers the completion of over-lot grading operations, by definition, to be substantially complete; therefore, all areas that will be dormant for more than 30 days after the completion of the over-lot grading will require temporary seeding within 14 days of establishment. This does not preclude the 7-day requirement for areas fully completed in the future. At a minimum in ensuring that this requirement is followed, adequate phasing/scheduling will be required.

FINAL STABILIZATION AND LONG-TERM STORMWATER MANAGEMENT

Final Stabilization has been completed if the following criteria have been met:

1. All ground surface disturbing activities at the construction site have been completed.
2. Must provide non-vegetative erosion control measures designed and installed for either permanent or temporary (which would completely degrade and decompose without leaving litter) placement to provide cover. BMP controls may be used in lieu of erosion control measures provided that they are selected and designed to protect the seed and surface from erosion as much as possible without active maintenance until the natural stabilizing effect of vegetation is established.
3. All disturbed areas must be permanently stabilized, either by means of pavement, concrete, or stabilized road-base. The soil must be compacted per the Geotechnical Report found in **Appendix D**, to ensure final stabilization.
4. Must attempt to reestablish a perennial vegetative cover using topsoil preserved from the site and/or with additional (preferably local) topsoil from off-site, mulch, fertilizer, and/or other methods with seeding and planting. The vegetative cover, preferably of an indigenous seed mix, should be equivalent to the background cover. The permanent stabilization must include a uniform vegetative cover with an individual plant density of at least 70 percent of pre-disturbance levels, and is expected to occur within 3 to 3.5 years after project completion with average precipitation.

5. The onsite road base will be finalized once the soil has been stabilized and the base course has been installed immediately after soil compaction and subgrade has been established.
6. Inlets within the Project area will require temporary erosion control measures (i.e. Inlet Protection approved equivalent) to ensure excessive sediment or debris is not circulated within the system.
7. Curb and gutter will be installed to direct flows towards the storm sewer infrastructure.
    a. Storm sewer infrastructure to be protected until upstream drainage areas are fully stabilized.

Long-Term Stormwater Management:

The proposed stormwater system includes a storm sewer system throughout the site, discharging into either existing full spectrum extended detention basin, located South of the site. All long-term stormwater management systems will be maintained by the Metro District established with the Master Development. The detention facility will release flows at a less than historic rate and will discharge to the south, per the existing condition. Seeding shall be installed within 48 hours of final grading and meet the final stabilization requirements stated above.

INSPECTION AND MAINTENANCE

Inspections shall be the responsibility of the Qualified Stormwater Manager throughout the construction process.

INSPECTION SCHEDULE REQUIREMENTS

Inspection and maintenance of erosion control measures shall comply with the criteria set forth by the CDPS General Permit (COR090000), or the following, whichever is more stringent.

The Permittee or Contractor shall make routine checks of all erosion control measures to determine if repairs or sediment removal is necessary. Written inspection records a minimum of once every seven (7) days and within 24 hours after every significant precipitation event or after every significant precipitation event that causes surface erosion. All necessary maintenance and repair shall be completed immediately. If more frequent inspections are required to ensure that BMPs are properly maintained and operated, the inspection schedule shall be modified to meet this need. Once construction is complete, but stabilization has not been fully established, all BMPs may be inspected once a month. A copy of the SWMP shall be maintained at the site at all times. Any degradation of the BMPs described in the SWMP or excessive accumulation of sediments shall be remedied immediately upon discovery. The Contractor shall record all storm events on the Storm Event Log included in the Appendices.

INSPECTION PROCEDURES

The inspection shall include observations of:

- The Construction Site Perimeter and Discharge Points;
- All Disturbed Areas;
- Vehicles and Equipment;
- Areas Used for Material / Waste Storage That are Exposed to Precipitation;
- Other Areas Determined to Have a Significant Potential for Stormwater Pollution;
- Erosion and Sediment Control Measures Identified in the SWMP; and
- Any Other Structural BMPs That May Require Maintenance.

The inspection must determine if there is evidence of, or the potential for, pollutants entering the drainage system. BMPs should be reviewed to determine if they still meet the design intent and operational criteria in the SWMP and if they continue to adequately control pollutants at the site. Any BMPs not operating in accordance with the SWMP must be addressed as soon as possible, immediately in most cases, to minimize the discharge of pollutants and the SWMP must be updated and inspections must be documented.

Examples of specific items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. Ultimately, it is the responsibility of the Contractor to assure the adequacy of site pollutant discharge controls. Actual physical site conditions or contractor practices could make it necessary to install more controls than are shown on the plans. Assessing the need for additional controls and implementing them or adjusting existing controls will be an ongoing requirement until the site achieves final stabilization.

1. Vehicle Tracking Control - Locations where vehicles enter and exit the site shall be inspected for evidence of offsite sediment tracking. Exits shall be maintained as necessary to prevent the release of sediment from vehicles leaving the site. Any sediment deposited on the adjacent roadway shall be removed as necessary throughout the day or at the end of every day and disposed of in an appropriate manner. Sediment shall not be washed into storm sewer systems.
2. Erosion Control Devices - Rolled erosion control products (nets, blankets, turf reinforcement mats) and marginally vegetated areas (areas not meeting required vegetative densities for final stabilization) must be inspected frequently. Rilling, rutting and other signs of erosion indicate the erosion control device is not functioning properly and additional erosion control devices are warranted.
3. Sediment Control Devices - Sediment barriers (earth dikes, etc.) and basins must be inspected and they must be cleaned out at such time as their original capacity has been reduced by 50 percent. All material excavated from behind sediment barriers or in traps and basins shall be incorporated into onsite soils or spread out on an upland portion of the site and stabilized. To minimize the potential for sediment releases from the Project, site perimeter control devices shall be inspected with consideration given to changing up-gradient conditions.
4. Material Storage Areas - Material storage areas should be located to minimize exposure to weather. Inspections shall evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system or discharging from the site. If necessary, the materials must be covered or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas. All state and local regulations pertaining to material storage areas shall be adhered to.
5. Vegetation - Seed/Sod shall be free of weedy species and appropriate for site soils and regional climate. Seeding, sodding, tacking, and mulching shall be completed, in accordance with the requirements outlined within the Project Manual and locations identified within the plans, immediately after topsoil is applied and final grade is reached. Grassed areas shall be inspected to confirm that a healthy stand of grass is maintained. Rip-rap, mulch, gravel, decomposed granite or other equivalent permanent stabilization measures may be employed in lieu of vegetation based on site-specific conditions and Owner approval.
6. Discharge Points - All discharge points must be inspected to determine whether erosion and sediment control measures are effective in preventing discharge of sediment from the site or impacts to receiving waters.

Based on the inspection results, all necessary maintenance and repair shall be completed immediately and in no cases longer than seventy-two (72) hours after identification. The associated GEC Plans are a living document and should therefore be reviewed and modified in the field as necessary. The qualified stormwater manager shall amend the SWMP when there is a change in design, construction, O&M of the site, addition or revision of BMPs, if the SWMP proves to be ineffective in achieving the objective of

controlling pollutants in stormwater discharges associated with construction activity, or if BMPs are no longer necessary and are removed. The inspection reports must be completed after each inspection. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the site was in compliance with the SWMP at the time of inspection and specifically identify all incidents of non-compliance.

The Qualified Stormwater Manager shall ensure that, at a minimum, the following is recorded for each inspection and kept onsite for reference:

- Inspection Date and Time
- Name(s), Title(s), and Signature(s) of Inspection Personnel
- Location(s) of Discharges of Sediment and Other Pollutants from the Site
- Location(s) of BMPs Requiring Maintenance
- Location(s) of Failed BMPs
- Location(s) of Additional Required BMPs
- Deviations from the Minimum Inspections Schedule (If Applicable)
- Description of Corrective Actions
- Certification of SWMP Compliance after adequate corrective action(s) taken, or where a report does not identify any incidents requiring corrective action, this certification shall be made by the inspector indicating compliance with the permit
- Weather Conditions
- Phase of Construction
- Estimate acreage of disturbance at the time
- Description of Minimum Inspection Frequency

The use and maintenance of logbooks, photographs, field notebooks, drawings or maps should also be included in the SWMP records when appropriate.

BMP MAINTENANCE / REPLACEMENT AND FAILED BMPS

Site inspection procedures noted above must address maintenance of BMPs that are found to no longer function as needed and designed, as well as preventive measures to proactively ensure continued operation.

The Qualified Stormwater Manager shall implement a preventative maintenance program to ensure that BMP breakdowns and failures are handled proactively. Site inspections should uncover any conditions which could result in the discharge of pollutants to storm sewers and surface waters and shall be rectified. For example, sediment shall be removed from silt fences on a regular basis to prevent failure of the BMP. Sediment shall be removed to an appropriate location so that it will not become an additional pollutant source.

The inspection process must also include replacement of BMPs when needed or the addition of new BMPs in order to adequately manage the pollutant sources at the site. This project is not dependent on BMPs or control measures owned or operated by another entity.

Any BMP deficiencies, replacement or additional BMPs that may be required shall be documented on the Stormwater Management Site Map and on the appropriate Inspection Form. If amendments to the SWMP are required, these amendments shall be documented on the SWMP Amendment Log included in the Appendices for reference and use.

REFERENCES

Colorado Discharge Permit System (CDPS) – Stormwater Discharge Associated with Construction Activities Application - Prepared by Water Quality Control Division, Colorado Department of Public Health and Environment; Revised April 2011.

Colorado Discharge Permit System (CDPS) General Permit – Stormwater Discharges Associated with Construction Activity - Prepared by Water Quality Control Division, Colorado Department of Public Health and Environment; signed and issued on May 31, 2007 and administratively continued effective July 1, 2012.

NRCS Web Soil Survey - Website: http://websoilsurvey.nrcs.usda.gov.

El Paso County "Drainage Criteria Manual", dated October 31, 2018 – Website: https://library.municode.com/co/el_paso_county/codes/drainage_criteria_manual?nodeId=DRCRMACOELPACO

El Paso County "Engineering Criteria Manual" Revision 6, dated December 13, 2016 – Website: https://epc-assets.elpasoco.com/wp-content/uploads/sites/13/Documents/EngineeringCriteriaManual.pdf

City of Colorado Springs "Drainage Criteria Manual (DCM) Volume 1", dated May, 2014 – Website: https://coloradosprings.gov/document/dcmvolume1revjan2021.pdf

Precipitation-Frequency Atlas of the Western United States - NOAA ATLAS 14, Volume III-Colorado. Prepared by the US Department of Commerce, National Oceanic and Atmospheric Administration and National Weather Service; dated 1973.

Stormwater Discharges Associated with Construction Activity – Stormwater Management Plan Preparation Guidance - Prepared by Water Quality Control Division, Colorado Department of Public Health and Environment; Revised April 2011.

Threatened, Endangered, Candidate and Proposed Species by County - Prepared by US Department of the Interior, Fish and Wildlife Services, Ecological Services, Colorado Field Offices; printed April 2015.

Urban Storm Drainage Criteria Manual, Volume 3 - Urban Drainage and Flood Control District, Denver, CO.; January 2016.

APPENDIX

SEE APPROVED GEC PLANS

APPENDIX B – CDPHE STORMWATER PERMIT

STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
Water Quality Control Division

CDPS GENERAL PERMIT

STORMWATER DISCHARGES ASSOCIATED WITH

CONSTRUCTION ACTIVITY

AUTHORIZATION TO DISCHARGE UNDER THE

COLORADO DISCHARGE PERMIT SYSTEM (CDPS)

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), this permit authorizes the discharge of stormwater associated with construction activities (and specific allowable non-stormwater discharges in accordance with Part I.A.1. of the permit) certified under this permit, from those locations specified throughout the State of Colorado to specified waters of the State.

Such discharges shall be in accordance with the conditions of this permit. This permit specifically authorizes the facility listed on the certification to discharge in accordance with permit requirements and conditions set forth in Parts I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

This permit becomes effective on April 1, 2019, and shall expire at midnight March 31, 2024.

Issued and signed this 1st day of November 2018.

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Ellen Howard Kutzer, Permits Section Manager
Water Quality Control Division

Permit History
Originally signed and issued October 31, 2018; effective April 1, 2019.

Table of Contents

Part I
Note: At the first mention of terminology that has a specific connotation for the purposes of this permit, the terminology is electronically linked to the definitions section of the permit in Part I.E.

A. COVERAGE UNDER THIS PERMIT

1. Authorized Discharges

This general permit authorizes permittee(s) to discharge the following to state waters: stormwater associated with construction activity and specified non-stormwater associated with construction activity. The following types of stormwater and non-stormwater discharges are authorized under this permit:

a. Allowable Stormwater Discharges

i. Stormwater discharges associated with construction activity.

ii. Stormwater discharges associated with producing earthen materials, such as soils, sand, and gravel dedicated to providing material to a single contiguous site, or within ¼ mile of a construction site (i.e. borrow or fill areas)

iii. Stormwater discharges associated with dedicated asphalt, concrete batch plants and masonry mixing stations (Coverage under this permit is not required if alternative coverage has been obtained.)

b. Allowable Non-Stormwater Discharges

The following non-stormwater discharges are allowable under this permit if the discharges are identified in the stormwater management plan in accordance with Part I.C. and if they have appropriate control measures in accordance with Part I.B.1.

i. Discharges from uncontaminated springs that do not originate from an area of land disturbance.

ii. Discharges to the ground of concrete washout water associated with the washing of concrete tools and concrete mixer chutes. Discharges of concrete washout water must not leave the site as surface runoff or reach receiving waters as defined by this permit.

iii. Discharges of landscape irrigation return flow.

c. Emergency Fire Fighting

Discharges resulting from emergency firefighting activities are authorized by this permit.

2. Limitations on Coverage

Discharges not authorized by this permit include, but are not limited to, the discharges and activities listed below. Permittees may seek individual or alternate general permit coverage for the discharges, as appropriate and available.

a. Discharges of Non-Stormwater

Discharges of non-stormwater, except the authorized non-stormwater discharges listed in Part I.A.1.b., are not eligible for coverage under this permit.

b. Discharges Currently Covered by another Individual or General Permit

c. Discharges Currently Covered by a Water Quality Control Division (division) Low Risk Guidance Document

3. Permit Certification and Submittal Procedures

a. Duty to apply
The following activities shall apply for coverage under this permit:

i. Construction sites that will disturb one acre or more; or

ii. Construction sites that are part of a common plan of development or sale; or

iii. Stormwater discharges that are designated by the division as needing a stormwater permit because the discharge:

(a) Contributes to a violation of a water quality standard; or

(b) is a significant contributor of pollutants to state waters.

b. Application Requirements
To obtain authorization to discharge under this permit, applicants applying for coverage following the effective date of the renewal permit shall meet the following requirements:

i. Owners and operators submitting an application for permit coverage will be co-permittees subject to the same benefits, duties, and obligations under this permit.

ii. Signature requirements: Both the owner and operator (permittee) of the construction site, as defined in Part I.E., must agree to the terms and conditions of the permit and submit a completed application that includes the signature of both the owner and the operator. In cases where the duties of the owner and operator are managed by the owner, both application signatures may be completed by the owner. Both the owner and operator are responsible for ensuring compliance with all terms and conditions of the permit, including implementation of the stormwater management plan.

iii. Applicants must use the paper form provided by the division or the electronic form provided on the division's web-based application platform when applying for coverage under this permit.

iv. The applicant(s) must develop a stormwater management plan (SWMP) in accordance with the requirements of Part I.C. The applicant(s) must also certify that the SWMP is complete, or will be complete, prior to commencement of any construction activity.

v. The applicant(s) must submit a complete, accurate, and signed permit application electronically, by mail or hand delivery to the division at least 10 days prior to the commencement of construction activity except that construction activities that are in response to a public emergency related site shall apply for coverage no later than 14 days after the commencement of construction activities. The provisions of this part in no way remove a violation of the Colorado Water Quality Control Act if a point source discharge occurs prior to the issuance of a CDPS permit.

vi. The application must be signed in accordance with the requirements of Part IA. Applications submitted by mail or hand delivered should be directed to:

Colorado Department of Public Health and Environment
Water Quality Control Division
Permits Section, WQCD-PS-B2
4300 Cherry Creek Drive South
Denver, CO 80246

vii. The applicant(s) must receive written notification that the division granted permit coverage prior to conducting construction activities except for construction activities that are in response to a public emergency related site

c. Division Review of Permit Application

Within 10 days of receipt of the application, and following review of the application, the division may:

i. Issue a certification of coverage;

ii. request additional information necessary to evaluate the discharge;

iii. delay the authorization to discharge pending further review;

iv. notify the applicant that additional terms and conditions are necessary; or

v. deny the authorization to discharge under this general permit.

d. Alternative Permit Coverage

i. Division Required Alternate Permit Coverage:
The Division may require an applicant or permittee to apply for an individual permit or an alternative general permit if it determines the discharge does not fall under the scope of this general permit. In this case, the Division will notify the applicant or permittee that an individual permit application is required.

ii. Permittee Request for alternate permit coverage:
A permittee authorized to discharge stormwater under this permit may request to be excluded from coverage under this general permit by applying for an individual permit. In this case, the permittee must submit an individual application, with reasons supporting the request, to the Division at least 180 days prior to any discharge. When an individual permit is issued, the permittee's authorization to discharge under this permit is terminated on the effective date of the individual permit.

e. Submittal Signature Requirements

Documents required for submittal to the division in accordance with this permit, including applications for permit coverage and other documents as requested by the division, must include signatures by both the owner and the operator, except for instances where the duties of the owner and operator are managed by the owner.

Signatures on all documents submitted to the division as required by this permit must meet the Standard Signatory Requirements in Part II.K. of this permit in accordance with 40 C.F.R. 122.41(k).

i. Signature Certification
Any person(s) signing documents required for submittal to the Division must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

f. Compliance Document Signature Requirements
Documents which are required for compliance with the permit, but for which submittal to the division is not required unless specifically requested by the division, must be signed by the individual(s) designated as the Qualified Stormwater Manager, as defined in Part I.E.

i. Any person(s) signing inspection documents required for compliance with the permit must make the following statement:

"I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit."

g. Field Wide Permit Coverage for Oil and Gas Construction
At the discretion of the division, a single permit certification may be issued to a single oil and gas permittee to cover construction activity related discharges from an oil and gas field at multiple locations that are not necessarily contiguous.

h. Permit Coverage without Application
Qualifying Local Program: When a small construction site is within the jurisdiction of a qualifying local program, the owner and operator of the construction activity are authorized to discharge stormwater associated with small construction activity under this general permit without the submittal of an application to the division. Sites covered by a qualifying local program are exempt from the following sections of this general permit:

Part I.A.3.a.; Part I.A.3.b.; Part I.A.3.c.; Part I.A.3.d.; Part I.A.3.g.; Part I.A.3.i.; Part I.A.3.j.; Part I.A.3.k.

Sites covered by a qualifying local program are subject to the following requirements:

i. Local Agency Authority: This permit does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control discharges of stormwater to storm drain systems or other water courses within their jurisdiction.

ii. Permit Coverage Termination: When a site under a Qualifying Local Program is finally stabilized, coverage under this permit is automatically terminated.

iii. Compliance with Qualifying Local Program: Qualifying Local Program requirements that are equivalent to the requirements of this permit are incorporated by reference. Permittees authorized to discharge under this permit, must comply with the equivalent requirements of the Qualifying Local Program that has jurisdiction over the site as a condition of this permit.

iv. Compliance with Remaining Permit Conditions. Requirements of this permit that are in addition to or more stringent than the requirements of the Qualifying Local Program apply in addition to the requirements of the Qualifying Local Program.

v. Written Authorization of Coverage: The division or local municipality may require any permittee within the jurisdiction of a Qualifying Local Program covered under this permit to apply for, and obtain written authorization of coverage under this permit. The permittee must be notified in writing that an application for written authorization of coverage is required.

i. Permittee Initiated Permit Actions

Permittee initiated permit actions, including but not limited to modifications, contact changes, transfers, reassignments, and terminations, shall be conducted following division guidance and using appropriate division-provided forms.

j. Sale of Residence to Homeowner

Residential construction sites only: The permittee may remove residential lots from permit coverage once the lot meets the following criteria:

i. the residential lot has been sold to the homeowner(s) for private residential use;

ii. a certificate of occupancy, or equivalent, is maintained on-site and is available during division inspections;

iii. the lot is less than one acre of disturbance;

iv. all construction activity conducted on the lot by the permittee is complete;

v. the permittee is not responsible for final stabilization of the lot; and

vi. the SWMP was modified to indicate the lot is no longer part of the construction activity.

If the residential lot meets the criteria listed above then activities occurring on the lot are no longer considered to be construction activities with a duty to apply and maintain permit coverage. Therefore, the permittee is not required to meet the final stabilization requirements and may terminate permit coverage for the lot.

k. Permit Expiration and Continuation of Permit Coverage

Authorization to discharge under this general permit shall expire at midnight on March 31, 2024. While Regulation 61.4 requires a permittee to submit an application for continuing permit coverage 180 days before the permit expires, the division is requiring that permittees desiring continued coverage under this general permit must reapply at least 90 days in advance of this permit expiration. The Division will determine if the permittee may continue to discharge stormwater under the terms of the general permit. An individual permit may be required for any facility not reauthorized to discharge under the reissued general permit.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued and remain in force and effect. For permittees that have applied for continued permit coverage, discharges authorized under this permit prior to the expiration date will automatically remain covered by this permit until the earliest of:

i. An authorization to discharge under a reissued permit, or a replacement of this permit, following the timely and appropriate submittal of a complete application requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or

ii. The issuance and effect of a termination issued by the Division; or

iii. The issuance or denial of an individual permit for the facility's discharges; or

iv. A formal permit decision by the Division not to reissue this general permit, at which time the Division will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will cease when coverage under another permit is granted/authorized; or

v. The Division has informed the permittee that discharges previously authorized under this permit are no longer covered under this permit.

B. EFFLUENT LIMITATIONS

1. Requirements for Control Measures Used to Meet Effluent Limitations

The permittee must implement control measures to minimize the discharge of pollutants from all potential pollutant sources at the site. Control measures must be installed prior to commencement of activities that may contribute pollutants to stormwater discharges. Control measures must be selected, designed, installed and maintained in accordance with good engineering, hydrologic and pollution control practices. Control measures implemented at the site must be designed to prevent pollution or degradation of state waters.

a. Stormwater Pollution Prevention

The permittee must implement structural and/or nonstructural control measures that effectively minimize erosion, sediment transport, and the release of other pollutants related to construction activity.

i. Control Measures for Erosion and Sediment Control

Control measures for erosion and sediment control may include, but are not limited to, wattles/sediment control logs, silt fences, earthen dikes, drainage swales, sediment traps, subsurface drains, pipe slope drains, inlet protection, outlet protection, gabions, sediment basins, temporary vegetation, permanent vegetation, mulching, geotextiles, sod stabilization, slope roughening, maintaining existing vegetation, protection of trees, and preservation of mature vegetation. Specific non-structural control measures must meet the requirements listed below.

Specific control measures must meet the requirements listed below.

(a) Vehicle tracking controls shall either be implemented to minimize vehicle tracking of sediment from disturbed areas, or the areas where vehicle tracking occurs shall meet subsection Part I.B.1.a.i(b);

(b) Stormwater runoff from all disturbed areas and soil storage areas for which permanent or temporary stabilization is not implemented, must flow to at least one control measure to minimize sediment in the discharge. This may be accomplished through filtering, settling, or straining. The control measure must be selected, designed, installed and adequately sized in accordance with good engineering, hydrologic and pollution control practices. The control measure(s) must contain or filter flows in order to prevent the bypass of flows without treatment and must be appropriate for stormwater runoff from disturbed areas and for the expected flow rate, duration, and flow conditions (i.e., sheet or concentrated flow);

(c) Outlets that withdraw water from or near the surface shall be installed when discharging from basins and impoundments, unless infeasible.

(d) Maintain pre-existing vegetation or equivalent control measures for areas within 50 horizontal feet of receiving waters as defined by this permit, unless infeasible.

(e) Soil compaction must be minimized for areas where infiltration control measures will occur or where final stabilization will be achieved through vegetative cover.

(f) Unless infeasible, topsoil shall be preserved for those areas of a site that will utilize vegetative final stabilization.

(g) Minimize the amount of soil exposed during construction activity, including the disturbance of steep slopes.

ii. Practices for Other Common Pollutants

(a) Bulk storage, 55 gallons or greater, for petroleum products and other liquid chemicals must have secondary containment, or equivalent protection, in order to contain spills and to prevent spilled material from entering state waters.

(b) Control measures designed for concrete washout waste must be implemented. This includes washout waste discharged to the ground as authorized under this permit and washout waste from concrete trucks and masonry operations contained on site. The permittee must ensure the washing activities do not contribute pollutants to stormwater runoff, or receiving waters in accordance Part I.A.1.b.ii. Discharges that may reach groundwater must flow through soil

that has buffering capacity prior to reaching groundwater, as necessary to meet the effluent limits in this permit, including Part I.B.3.a. The concrete washout location shall be not be located in an area where shallow groundwater may be present and would result in buffering capacity not being adequate, such as near natural drainages, springs, or wetlands. This permit authorizes discharges to the ground of concrete washout waste.

iii. Stabilization Requirements
The following requirements must be implemented for each site.

(a) Temporary stabilization must be implemented for earth disturbing activities on any portion of the site where ground disturbing construction activity has permanently ceased, or temporarily ceased for more than 14 calendar days. Temporary stabilization methods may include, but are not limited to, tarps, soil tackifier, and hydroseed. The permittee may exceed the 14-day schedule when either the function of the specific area of the site requires it to remain disturbed, or, physical characteristics of the terrain and climate prevent stabilization. The SWMP must document the constraints necessitating the alternative schedule, provide the alternate stabilization schedule, and identify all locations where the alternative schedule is applicable on the site map.

(b) Final stabilization must be implemented for all construction sites. Final stabilization is reached when all ground surface disturbing activities at the construction site are complete; and, for all areas of ground surface disturbing activities, either a uniform vegetative cover with an individual plant density of at least 70 percent of pre-disturbance levels is established, or equivalent permanent alternative stabilization methods are implemented. The division may approve alternative final stabilization criteria for specific operations.

(c) Final stabilization must be designed and installed as a permanent feature. Final stabilization measures for obtaining a vegetative cover or alternative stabilization methods include, but are not limited to, the following as appropriate:

(1) Seed mix selection and application methods;

(2) Soil preparation and amendments;

(3) Soil stabilization methods (e.g., crimped straw, hydro mulch or rolled erosion control products);

(4) Appropriate sediment control measures as needed until final stabilization is achieved;

(5) Permanent pavement, hardscape, xeriscape, stabilized driving surfaces;

(6) Other alternative stabilization practices as applicable;

(d) The permittee(s) must ensure all temporary control measures are removed from the construction site once final stabilization is achieved, except when the control measure specifications allow the control measure to be left in place (i.e., bio-degradable control measures).

b. Maintenance

The permittee must ensure that all control measures remain in effective operating condition and are protected from activities that would reduce their effectiveness. Control measures must be maintained in accordance with good engineering, hydrologic and pollution control practices. Observations leading to the required maintenance of control measures can be made during a site inspection, or during general observations of site conditions. The necessary repairs or modifications to a control measure requiring routine maintenance, as defined in Part I.E., must be conducted to maintain an effective operating condition. This section is not subject to the requirements in Part I.B.1.c. below.

c. Corrective Actions

The permittee must assess the adequacy of control measures at the site, and the need for changes to those control measures, to ensure continued effective performance. When an inadequate control measure, as defined in Part I.E., is identified (i.e., new or replacement control measures become necessary), the following corrective action requirements apply. The permittee is in noncompliance with the permit until the inadequate control measure is replaced or corrected and returned to effective operating condition in compliance with Part I.B.1. and the general requirements in Part I.B.3. If the inadequate control measure results in noncompliance that meets the conditions of Part II.L., the permittee must also meet the requirements of that section.

i. The permittee must take all necessary steps to minimize or prevent the discharge of pollutants, until a control measure is implemented and made operational and/or an inadequate control measure is replaced or corrected and returned to effective operating condition. If it is infeasible to install or repair of control measure immediately after discovering the deficiency, the following must be documented and kept on record in accordance with the recordkeeping requirements in Part II.

(a) Describe why it is infeasible to initiate the installation or repair immediately; and

(b) Provide a schedule for installing or repairing the control measure and returning it to an effective operating condition as soon as possible.

ii. If applicable, the permittee must remove and properly dispose of any unauthorized release or discharge (e.g., discharge of non-stormwater, spill, or leak not authorized by this permit.) The permittee must also clean up any contaminated surfaces to minimize discharges of the material in subsequent storm events.

2. Discharges to an Impaired Waterbody

a. Total Maximum Daily Load (TMDL)

If the permittee's discharge flows to or could reasonably be expected to flow to any water body for which a TMDL has been approved, and stormwater discharges

associated with construction activity were assigned a pollutant-specific Wasteload Allocation (WLA) under the TMDL, the division may:

i. ensure the WLA is implemented properly through alternative local requirements, such as by a municipal stormwater permit; or

ii. notify the permittee of the WLA and amend the permittee's certification to add specific effluent limits and other requirements, as appropriate. The permittee may be required to do the following:

(a) under the permittee's SWMP, implement specific control measures based on requirements of the WLA, and evaluate whether the requirements are met through implementation of existing stormwater control measures or if additional control measures are necessary. Document the calculations or other evidence demonstrating that the requirements are expected to be met; and

(b) if the evaluation shows that additional or modified control measures are necessary, describe the type and schedule for the control measure additions or modifications.

iii. Discharge monitoring may also be required. The permittee may maintain coverage under the general permit provided they comply with the applicable requirements outlined above. The division reserves the right to require individual or alternate general permit coverage.

3. General Requirements

a. Discharges authorized by this permit shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any applicable water quality standard, including narrative standards for water quality.

b. The division may require sampling and testing, on a case-by-case basis, in the event that there is reason to suspect that the SWMP is not adequately minimizing pollutants in stormwater or in order to measure the effectiveness of the control measures in removing pollutants in the effluent. Such monitoring may include Whole Effluent Toxicity testing.

c. The permittee must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts and other local agencies including applicable requirements in Municipal Stormwater Management Programs developed to comply with CDPS permits. The permittee must comply with local stormwater management requirements, policies and guidelines including those for erosion and sediment control.

d. All construction site wastes must be properly managed to prevent potential pollution of state waters. This permit does not authorize on-site waste disposal.

e. This permit does not relieve the permittee of the reporting requirements in 40 CFR 110, 40 CFR 117 or 40 CFR 302. Any discharge of hazardous material must be handled in accordance with the division's Noncompliance Notification Requirements (see Part II.L. of the permit).

C. STORMWATER MANAGEMENT PLAN (SWMP) REQUIREMENTS

1. SWMP General Requirements

   a. A SWMP shall be developed for each construction site covered by this permit. The SWMP must be prepared in accordance with good engineering, hydrologic and pollution control practices.

      i. For public emergency related sites a SWMP shall be created no later than 14 days after the commencement of construction activities.

   b. The permittee must implement the provisions of the SWMP as written and updated, from commencement of construction activity until final stabilization is complete. The division may review the SWMP.

   c. A copy of the SWMP must be retained onsite or be onsite when construction activities are occurring at the site unless the permittee specifies another location and obtains approval from the division.

2. SWMP Content

   a. The SWMP, at a minimum, must include the following elements.

      i. Qualified Stormwater Manager. The SWMP must list individual(s) by title and name who are designated as the site's qualified stormwater manager(s) responsible for implementing the SWMP in its entirety. This role may be filled by more than one individual.

      ii. Spill Prevention and Response Plan. The SWMP must have a spill prevention and response plan. The plan may incorporate by reference any part of a Spill Prevention Control and Countermeasure (SPCC) plan under section 311 of the Clean Water Act (CWA) or a Spill Prevention Plan required by a separate CDPS permit. The relevant sections of any referenced plans must be available as part of the SWMP consistent with Part I.C.4.

      iii. Materials Handling. The SWMP must describe and locate all control measures implemented at the site to minimize impacts from handling significant materials that could contribute pollutants to runoff. These handling procedures can include control measures for pollutants and activities such as, exposed storage of building materials, paints and solvents, landscape materials, fertilizers or chemicals, sanitary waste material, trash and equipment maintenance or fueling procedures.

      iv. Potential Sources of Pollution. The SWMP must list all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction activity from the site. This shall include, but is not limited to, the following pollutant sources:

         (a) disturbed and stored soils;

         (b) vehicle tracking of sediments;

         (c) management of contaminated soils;

         (d) loading and unloading operations;

(e) outdoor storage activities (erodible building materials, fertilizers, chemicals, etc.);

(f) vehicle and equipment maintenance and fueling;

(g) significant dust or particulate generating processes (e.g., saw cutting material, including dust);

(h) routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.;

(i) on-site waste management practices (waste piles, liquid wastes, dumpsters);

(j) concrete truck/equipment washing, including washing of the concrete truck chute and associated fixtures and equipment;

(k) dedicated asphalt, concrete batch plants and masonry mixing stations;

(l) non-industrial waste sources such as worker trash and portable toilets.

v. Implementation of Control Measures. The SWMP must include design specifications that contain information on the implementation of the control measure in accordance with good engineering hydrologic and pollution control practices; including as applicable drawings, dimensions, installation information, materials, implementation processes, control measure-specific inspection expectations, and maintenance requirements.

The SWMP must include a documented use agreement between the permittee and the owner or operator of any control measures located outside of the permitted area, that are utilized by the permittee's construction site for compliance with this permit, but not under the direct control of the permittee. The permittee is responsible for ensuring that all control measures located outside of their permitted area, that are being utilized by the permittee's construction site, are properly maintained and in compliance with all terms and conditions of the permit. The SWMP must include all information required of and relevant to any such control measures located outside the permitted area, including location, installation specifications, design specifications and maintenance requirements.

vi. Site Description. The SWMP must include a site description which includes, at a minimum, the following:

(a) the nature of the construction activity at the site;

(b) the proposed schedule for the sequence for major construction activities and the planned implementation of control measures for each phase. (e.g.: clearing, grading, utilities, vertical, etc.);

(c) estimates of the total acreage of the site, and the acreage expected to be disturbed by clearing, excavation, grading, or any other construction activities;

(d) a summary of any existing data used in the development of the construction site plans or SWMP that describe the soil or existing potential for soil erosion;

(e) a description of the percent of existing vegetative ground cover relative to the entire site and the method for determining the percentage;

(f) a description of any allowable non-stormwater discharges at the site, including those being discharged under a division low risk discharge guidance policy;

(g) a description of areas receiving discharge from the site. Including a description of the immediate source receiving the discharge. If the stormwater discharge is to a municipal separate storm sewer system, the name of the entity owning that system, the location of the storm sewer discharge, and the ultimate receiving water(s); and

(h) a description of all stream crossings located within the construction site boundary.

vii. Site Map. The SWMP must include a site map which includes, at a minimum, the following:

(a) construction site boundaries;

(b) flow arrows that depict stormwater flow directions on-site and runoff direction;

(c) all areas of ground disturbance including areas of borrow and fill;

(d) areas used for storage of soil;

(e) locations of all waste accumulation areas, including areas for liquid, concrete, masonry, and asphalt;

(f) locations of dedicated asphalt, concrete batch plants and masonry mixing stations;

(g) locations of all structural control measures;

(h) locations of all non-structural control measures;

(i) locations of springs, streams, wetlands and other state waters, including areas that require pre-existing vegetation be maintained within 50 feet of a receiving water, where determined feasible in accordance with Part I.B.1.a.i.(d).; and

(j) locations of all stream crossings located within the construction site boundary.

viii. Final Stabilization and Long Term Stormwater Management. The SWMP must describe the practices used to achieve final stabilization of all disturbed areas at the site and any planned practices to control pollutants in stormwater discharges that will occur after construction operations are completed. Including but not limited to, detention/retention ponds, rain gardens, stormwater vaults, etc.

ix. Inspection Reports. The SWMP must include documented inspection reports in accordance with Part ID.

3. SWMP Review and Revisions

Permittees must keep a record of SWMP changes made that includes the date and identification of the changes. The SWMP must be amended when the following occurs:

a. a change in design, construction, operation, or maintenance of the site requiring implementation of new or revised control measures;

b. the SWMP proves ineffective in controlling pollutants in stormwater runoff in compliance with the permit conditions;

c. control measures identified in the SWMP are no longer necessary and are removed; and

d. corrective actions are taken onsite that result in a change to the SWMP.

For SWMP revisions made prior to or following a change(s) onsite, including revisions to sections addressing site conditions and control measures, a notation must be included in the SWMP that identifies the date of the site change, the control measure removed, or modified, the location(s) of those control measures, and any changes to the control measure(s). The permittee must ensure the site changes are reflected in the SWMP. The permittee is noncompliant with the permit until the SWMP revisions have been made.

4. SWMP Availability

A copy of the SWMP must be provided upon request to the division, EPA, and any local agency with authority for approving sediment and erosion plans, grading plans or stormwater management plans within the time frame specified in the request. If the SWMP is required to be submitted to any of these entities, the submission must include a signed certification in accordance with Part I.A.3.e., certifying that the SWMP is complete and compliant with all terms and conditions of the permit.

All SWMPs required under this permit are considered reports that must be available to the public under Section 308(b) of the CWA and Section 61.5(4) of the CDPS regulations. The permittee must make plans available to members of the public upon request. However, the permittee may claim any portion of a SWMP as confidential in accordance with 40 CFR Part 2.

D. SITE INSPECTIONS

Site inspections must be conducted in accordance with the following requirements. The required inspection schedules are a minimum frequency and do not affect the permittee's responsibility to implement control measures in effective operating condition as prescribed in the SWMP. Proper maintenance of control measures may require more frequent inspections. Site inspections shall start within 7 calendar days of the commencement of construction activities on site.

1. Person Responsible for Conducting Inspections

The person(s) inspecting the site may be on the permittee's staff or a third party hired to conduct stormwater inspections under the direction of the permittee(s). The permittee is responsible for ensuring that the inspector is a qualified stormwater manager.

2. Inspection Frequency

Permittees must conduct site inspections in accordance with one of the following minimum frequencies, unless the site meets the requirements of Part ID.3

a. At least one inspection every 7 calendar days. Or

b. At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. Post-storm inspections may be used to fulfill the 14-day routine inspection requirement.

c. When site conditions make the schedule required in this section impractical, the permittee may petition the Division to grant an alternate inspection schedule. The alternative inspection schedule may not be implemented prior to written approval by the division and incorporation into the SWMP.

3. Inspection Frequency for Discharges to Outstanding Waters

Permittees must conduct site inspections at least once every 7 calendar days for sites that discharge to a water body designated as an Outstanding Water by the Water Quality Control Commission.

4. Reduced Inspection Frequency

The permittee may perform site inspections at the following reduced frequencies when one of the following conditions exists:

a. Post-Storm Inspections at Temporarily Idle Sites
For permittees choosing to combine 14-day inspections and post-storm-event-inspections, if no construction activities will occur following a storm event, post-storm event inspections must be conducted prior to re-commencing construction activities, but no later than 72 hours following the storm event. The delay of any post-storm event inspection must be documented in the inspection record. Routine inspections must still be conducted at least every 14 calendar days.

b. Inspections at Completed Sites/Areas
When the site, or portions of a site are awaiting establishment of a vegetative ground cover and final stabilization, the permittee must conduct a thorough inspection of the stormwater management system at least once every 30 days. Post-storm event inspections are not required under this schedule. This reduced inspection schedule is allowed if all of the following criteria are met:

i. all construction activities resulting in ground disturbance are complete;

ii. all activities required for final stabilization, in accordance with the SWMP, have been completed, with the exception of the application of seed that has not occurred due to seasonal conditions or the necessity for additional seed application to augment previous efforts; and

iii. the SWMP has been amended to locate those areas to be inspected in accordance with the reduced schedule allowed for in this paragraph.

c. Winter Conditions Inspections Exclusion

Inspections are not required for sites that meet all of the following conditions: construction activities are temporarily halted, snow cover exists over the entire site for an extended period, and melting conditions posing a risk of surface erosion do not exist. This inspection exception is applicable only during the period where melting conditions do not exist, and applies to the routine 7-day, 14-day and monthly inspections, as well as the post-storm-event inspections. When this inspection exclusion is implemented, the following information must be documented in accordance with the requirements in Part II:

i. dates when snow cover existed;

ii. date when construction activities ceased; and

iii. date melting conditions began.

5. Inspection Scope

a. Areas to be Inspected

When conducting a site inspection the following areas, if applicable, must be inspected for evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters:

i. construction site perimeter;

ii. all disturbed areas;

iii. designated haul routes;

iv. material and waste storage areas exposed to precipitation;

v. locations where stormwater has the potential to discharge offsite; and

vi. locations where vehicles exit the site.

b. Inspection Requirements

i. Visually verify whether all implemented control measures are in effective operational condition and are working as designed in their specifications to minimize pollutant discharges.

ii. Determine if there are new potential sources of pollutants.

iii. Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.

iv. Identify all areas of non–compliance with the permit requirements and, if necessary, implement corrective action in accordance with Part IB.1.c.

c. Inspection Reports

The permittee must keep a record of all inspections conducted for each permitted site. Inspection reports must identify any incidents of noncompliance with the terms and conditions of this permit. Inspection records must be retained in accordance with Part II.O. and signed in accordance with Part I.A.3.f. At a minimum, the inspection report must include:

i. the inspection date;

ii. name(s) and title(s) of personnel conducting the inspection;

iii. weather conditions at the time of inspection;

iv. phase of construction at the time of inspection;

v. estimated acreage of disturbance at the time of inspection

vi. location(s) of discharges of sediment or other pollutants from the site;

vii. location(s) of control measures needing maintenance;

viii. location(s) and identification of inadequate control measures;

ix. location(s) and identification of additional control measures are needed that were not in place at the time of inspection;

x. description of the minimum inspection frequency (either in accordance with Part I.D.2., I.D.3. or I.D.4.) utilized when conducting each inspection.

xi. deviations from the minimum inspection schedule as required in Part I.D.2.;

xii. after adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the report shall contain a statement as required in Part I.A.3.f.

E. DEFINITIONS

For the purposes of this permit:

(1) Bypass - the intentional diversion of waste streams from any portion of a treatment facility in accordance with 40 CFR 122.41(m)(1)(i) and Regulation 61.2(12).

(2) Common Plan of Development or Sale - A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules, but remain related. The Division has determined that "contiguous" means construction activities located in close proximity to each other (within ¼ mile). Construction activities are considered to be "related" if they share the same development plan, builder or contractor, equipment, storage areas, etc. "Common plan of development or sale" includes construction activities that are associated with the construction of field wide oil and gas permits for facilities that are related.

(3) Construction Activity - Ground surface disturbing and associated activities (land disturbance), which include, but are not limited to, clearing, grading, excavation, demolition, installation of new or improved haul roads and access roads, staging areas, stockpiling of fill materials, and borrow areas. Construction does not include routine maintenance to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. Activities to conduct repairs that are not part of routine maintenance or for replacement are construction activities and are not routine maintenance. Repaving activities where underlying and/or surrounding soil is exposed as part of the repaving operation are considered construction activities. Construction activity is from initial ground breaking to final stabilization regardless of ownership of the construction activities.

(4) Control Measure - Any best management practice or other method used to prevent or reduce the discharge of pollutants to state waters. Control measures include, but are not limited to, best management practices. Control measures can include other methods such as the installation, operation, and maintenance of structural controls and treatment devices.

(5) Control Measure Requiring Routine Maintenance - Any control measure that is still operating in accordance with its design and the requirements of this permit, but requires maintenance to prevent a breach of the control measure. See also inadequate control measure.

(6) Dedicated Asphalt, Concrete Batch Plants and Masonry Mixing Stations – are batch plants or mixing stations located on, or within ¼ mile of, a construction site and that provide materials only to that specific construction site.

(7) Final Stabilization - The condition reached when all ground surface disturbing activities at the site have been completed, and for all areas of ground surface disturbing activities where a uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed.

(8) Good Engineering, Hydrologic and Pollution Control Practices: are methods, procedures, and practices that:
   a. Are based on basic scientific fact(s).
   b. Reflect best industry practices and standards.
   c. Are appropriate for the conditions and pollutant sources.
   d. Provide appropriate solutions to meet the associated permit requirements, including practice based effluent limits.

(9) Inadequate Control Measure - Any control measure that is not designed or implemented in accordance with the requirements of the permit and/or any control measure that is not implemented to operate in accordance with its design. See also Control Measure Requiring Routine Maintenance.

(10) Infeasible – Not technologically possible, or not economically practicable and achievable in light of best industry practices.

(11) Minimize - reduce or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

(12) Municipality - A city, town, county, district, association, or other public body created by, or under, State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or a designated and approved management agency under section 208 of CWA (1987).

(13) Municipal Separate Storm Sewer System (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

   a) owned or operated by a State, city, town, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the CWA that discharges to state waters;

      i. designed or used for collecting or conveying stormwater;
      ii. are not a combined sewer; and
      iii. are not part of a Publicly Owned Treatment Works (POTW). See 5 CCR 1002-61.2(62).

(14) Municipal Stormwater Management Program - A stormwater program operated by a municipality, typically to meet the requirements of the municipalities MS4 discharge certification.

(15) Operator - The party that has operational control over day-to-day activities at a project site which are necessary to ensure compliance with the permit. This party is authorized to direct individuals at a site to carry out activities required by the permit.(e.g. the general contractor)

(16) Owner - The party that has overall control of the activities and that has funded the implementation of the construction plans and specifications. This is the party with ownership of, a long term lease of, or easements on the property on which the construction activity is occurring (e.g., the developer).

(17) Permittee(s) - The owner and operator named in the discharge certification issued under this permit for the construction site specified in the certification.

(18) Point Source - Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. Point source does not include irrigation return flow. See 5 CCR 102-61.2(75).

(19) Pollutant - Dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal or agricultural waste. See 5 CCR 1002-61.2(76).

(20) Presentation of credentials – a government issued form of identification, if in person; or (ii) providing name, position and purpose of inspection if request to enter is made via telephone, email or other form of electronic communication. A Permittee's non-response to a request to enter upon presentation of credentials constitutes a denial to such request, and may result in violation of the Permit.

(21) Process Water - Any water which, during manufacturing or processing, comes into contact with or results from the production of any raw material, intermediate product, finished product, by product or waste product.

(22) Public Emergency Related Site - a project initiated in response to an unanticipated emergency (e.g., mud slides, earthquake, extreme flooding conditions, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services.

(23) Qualified Stormwater Manager - An individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet the requirements of this permit.

(24) Qualifying Local Program - A municipal program for stormwater discharges associated with small construction activity that was formally approved by the division as a qualifying local program.

(25) Receiving Water - Any classified or unclassified surface water segment (including tributaries) in the State of Colorado into which stormwater associated with construction activities discharges. This definition includes all water courses, even if they are usually dry, such as borrow ditches, arroyos, and other unnamed waterways.

(26) Severe Property Damage - substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR 122.41(m)(1)(ii).

(27) Significant Materials - Include, but not limited to, raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the permittee is required to report under section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

(28) Small Construction Activity - The discharge of stormwater from construction activities that result in land disturbance of equal to, or greater than, one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale, if the larger common plan ultimately disturbs equal to, or greater than, one acre and less than five acres.

(29) Spill - An unintentional release of solid or liquid material which may pollute state waters.

(30) State Waters - means any and all surface and subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.

(31) Steep Slopes: where a local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a "steep slope", this permit's definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 3:1 or greater.

(32) Stormwater - Precipitation runoff, snow melt runoff, and surface runoff and drainage. See 5 CCR 1002-61.2(103).

(33) Total Maximum Daily Loads (TMDLs) -The sum of the individual wasteload allocations (WLA) for point sources and load allocations (LA) for nonpoint sources and natural background. For the purposes of this permit, a TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes WLAs, LAs, and must include a margin of safety (MOS), and account for seasonal variations. See section 303(d) of the CWA and 40 C.F.R. 130.2 and 130.7.

(34) Upset - an exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation in accordance with 40 CFR 122.41(n) and Regulation 61.2(114).

F. MONITORING

The division may require sampling and testing, on a case-by-case basis. If the division requires sampling and testing, the division will send a notification to the permittee. Reporting procedures for any monitoring data collected will be included in the notification.

If monitoring is required, the following applies:

1. the thirty (30) day average must be determined by the arithmetic mean of all samples collected during a thirty (30) consecutive-day period; and

2. a grab sample, for monitoring requirements, is a single "dip and take" sample.

G. Oil and Gas Construction

Stormwater discharges associated with construction activities directly related to oil and gas exploration, production, processing, and treatment operations or transmission facilities are regulated under the Colorado Discharge Permit System Regulations (5 CCR 1002-61), and require coverage under this permit in accordance with that regulation. However, references in this permit to specific authority under the CWA do not apply to stormwater discharges associated with these oil and gas related construction activities, to the extent that the references are limited by the federal Energy Policy Act of 2005.

Part II: Standard Permit Conditions

A. DUTY TO COMPLY

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Water Quality Control Act and is grounds for:

a. enforcement action;

b. permit termination, revocation and reissuance, or modification; or

c. denial of a permit renewal application.

B. DUTY TO REAPPLY

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain authorization as required by Part I.A.3.k. of the permit.

C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. DUTY TO MITIGATE

A permittee must take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. PROPER OPERATION AND MAINTENANCE

A permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit. This requirement can be met by meeting the requirements for Part I.B., I.C., and I.D. above. See also 40 C.F.R. § 122.41(e).

F. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause. The permittee request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. Any request for modification, revocation, reissuance, or termination under this permit must comply with all terms and conditions of Regulation 61.8(8).

G. PROPERTY RIGHTS

In accordance with 40 CFR 122.41(g) and 5 CCR 1002-61, 61.8(9):

1. The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.

2. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.
3. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.

H. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the division, within a reasonable time, any information which the division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the division, upon request, copies of records required to be kept by this permit in accordance with 40 CFR 122.41(h) and/or Regulation 61.8(3)(q).

I. INSPECTION AND ENTRY

The permittee shall allow the division and the authorized representative, upon the presentation of credentials as required by law, to allow for inspections to be conducted in accordance with 40 CFR 122.41(i), Regulation 61.8(3), and Regulation 61.8(4):

1. to enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;
2. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit;
3. at reasonable times, inspect any monitoring equipment or monitoring method required in the permit; and
4. to enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect or investigate, any actual, suspected, or potential source of water pollution, or any violation of the Colorado Water Quality Control Act. The investigation may include: sampling of any discharges, stormwater or process water, taking of photographs, interviewing site staff on alleged violations and other matters related to the permit, and assessing any and all facilities or areas within the site that may affect discharges, the permit, or an alleged violation.

The permittee shall provide access to the division or other authorized representatives upon presentation of proper credentials. A permittee’s non-response to a request to enter upon presentation of credentials constitutes a denial of such request, and may result in a violation of the permit.

J. MONITORING AND RECORDS

1. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.

2. The permittee must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date the permit expires or the date the permittee's authorization is terminated. This period may be extended by request of the division at any time.

3. Records of monitoring information must include:
   a. The date, exact place, and time of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used; and
   f. The results of such analyses.

4. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.

K. SIGNATORY REQUIREMENTS

1. Authorization to Sign:

   All documents required to be submitted to the division by the permit must be signed in accordance with the following criteria:

   a. For a corporation: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means:

      i. a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

      ii. the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

   b. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

   c. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a federal agency includes

      i. (i) the chief executive officer of the agency, or

ii. (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency. (e.g., Regional Administrator of EPA)

2. Electronic Signatures

For persons signing applications for coverage under this permit electronically, in addition to meeting other applicable requirements stated above, such signatures must meet the same signature, authentication, and identity-proofing standards set forth at 40 CFR § 3.2000(b) for electronic reports (including robust second-factor authentication). Compliance with this requirement can be achieved by submitting the application using the Colorado Environmental Online Service (CEOS) system.

3. Change in Authorization to Sign

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the division, prior to the re-authorization, or together with any reports, information, or applications to be signed by an authorized representative.

L. REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall give advance notice to the division, in writing, of any planned physical alterations or additions to the permitted facility in accordance with 40 CFR 122.41(l) and Regulation 61.8(5)(a). Notice is required only when:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.41(a)(1).

2. Anticipated Non-Compliance

The permittee shall give advance notice to the division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements. The timing of notification requirements differs based on the type of non-compliance as described in subparagraphs 5, 6, 7, and 8 below.

3. Transfer of Ownership or Control

The permittee shall notify the division, in writing, ten (10) calendar days in advance of a proposed transfer of the permit. This permit is not transferable to any person except after notice is given to the division.

a. Where a facility wants to change the name of the permittee, the original permittee (the first owner or operators) must submit a Notice of Termination.

b. The new owner or operator must submit an application. See also signature requirements in Part II.K, above.

c. A permit may be automatically transferred to a new permittee if:

i. The current permittee notifies the Division in writing 30 calendar days in advance of the proposed transfer date; and

ii. The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and

iii. The division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.

iv. Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

4. Monitoring reports

Monitoring results must be reported at the intervals specified in this permit per the requirements of 40 CFR 122.41(l)(4).

5. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted on the date listed in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.

6. Twenty-four hour reporting

In addition to the reports required elsewhere in this permit, the permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances:

a. Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;

b. Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;

c. Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;

d. Daily maximum violations for any of the pollutants limited by Part I of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

e. The division may waive the written report required under subparagraph 6 of this section if the oral report has been received within 24 hours.

7. Other non-compliance

A permittee must report all instances of noncompliance at the time monitoring reports are due. If no monitoring reports are required, these reports are due at least annually in accordance with Regulation 61.8(4)(p). The annual report must contain all instances of non-compliance required under either subparagraph 5 or subparagraph 6 of this subsection.

8. Other information

Where a permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Permitting Authority, it has a duty to promptly submit such facts or information.

M. BYPASS

1. Bypass not exceeding limitations

The permittees may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II.M.2 of this permit. See 40 CFR 122.41(m)(2).

2. Notice of bypass

a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, the permittee must submit prior notice, if possible at least ten days before the date of the bypass. ee 40 CFR §122.41(m)(3)(i) and/or Regulation 61.9(5)(c).

b. Unanticipated bypass. The permittee must submit notice of an unanticipated bypass in accordance with Part II.L.6. See 40 CFR §122.41(m)(3)(ii) .

3. Prohibition of Bypass

Bypasses are prohibited and the division may take enforcement action against the permittee for bypass, unless:

i. the bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

iii. proper notices were submitted to the division.

N. UPSET

1. Effect of an upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of Part II.N.2. of this permit are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review in accordance with Regulation 61.8(3)(j).

2. Conditions necessary for demonstration of an Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that

a. an upset occurred and the permittee can identify the specific cause(s) of the upset;

b. the permitted facility was at the time being properly operated and maintained; and

c. the permittee submitted proper notice of the upset as required in Part II.L.6.(24-hour notice); and

d. the permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

3. Burden of Proof

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

O. RETENTION OF RECORDS

1. Post-Expiration or Termination Retention

Copies of documentation required by this permit, including records of all data used to complete the application for permit coverage to be covered by this permit, must be

retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

2. On-site Retention

The permittee must retain an electronic version or hardcopy of the SWMP at the construction site from the date of the initiation of construction activities to the date of expiration or inactivation of permit coverage; unless another location, specified by the permittee, is approved by the division.

P. REOPENER CLAUSE

1. Procedures for modification or revocation

Permit modification or revocation of this permit or coverage under this permit will be conducted according to Regulation 61.8(8).

2. Water quality protection

If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, the permittee may be required to obtain an individual permit, or the permit may be modified to include different limitations and/or requirements.

Q. SEVERABILITY

The provisions of this permit are severable. If any provisions or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

R. NOTIFICATION REQUIREMENTS

1. Notification to Parties

All notification requirements, excluding information submitted using the CEOS portal, shall be directed as follows:

a. Oral Notifications, during normal business hours shall be to:
Clean Water Compliance Section
Water Quality Control Division
Telephone: (303) 692-3500

b. Written notification shall be to:
Clean Water Compliance Section
Water Quality Control Division
Colorado Department of Public Health and Environment
WQCD-WQP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

S. RESPONSIBILITIES

1. Reduction, Loss, or Failure of Treatment Facility

   The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

T. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the CWA.

U. Emergency Powers

Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

V. Confidentiality

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Water Quality Control Commission or the division, but shall be kept confidential. Any person seeking to invoke the protection of of this section shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

W. Fees

The permittee is required to submit payment of an annual fee as set forth in the 2016 amendments to the Water Quality Control Act. Section 25-8-502 (1.1) (b), and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S.1973 as amended.

X. Duration of Permit

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least ninety (90) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications. If the permittee anticipates there will be no discharge after the expiration date of this permit, the division should be promptly notified so that it can terminate the permit in accordance with Part I.A.3.i.

Y. Section 307 Toxics

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the division

shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition

APPENDIX C – NRCS SOIL SURVEY

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for El Paso County Area, Colorado

July 22, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:585 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 21, Aug 24, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 14, 2018—Sep 23, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
52	Manzanst clay loam, 0 to 3 percent slopes	1.3	100.0%
Totals for Area of Interest		**1.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

El Paso County Area, Colorado

52—Manzanst clay loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2w4nr
Elevation: 4,060 to 6,660 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Manzanst and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Manzanst

Setting

Landform: Terraces, drainageways
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Clayey alluvium derived from shale

Typical profile

A - 0 to 3 inches: clay loam
Bt - 3 to 12 inches: clay
Btk - 12 to 37 inches: clay
Bk1 - 37 to 52 inches: clay
Bk2 - 52 to 79 inches: clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 3 percent
Maximum salinity: Slightly saline (4.0 to 7.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: C
Ecological site: R067BY037CO - Saline Overflow
Hydric soil rating: No

Minor Components

Ritoazul

Percent of map unit: 7 percent
Landform: Drainageways, interfluves
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY042CO - Clayey Plains
Hydric soil rating: No

Arvada

Percent of map unit: 6 percent
Landform: Drainageways, interfluves
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY033CO - Salt Flat
Hydric soil rating: No

Wiley

Percent of map unit: 2 percent
Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

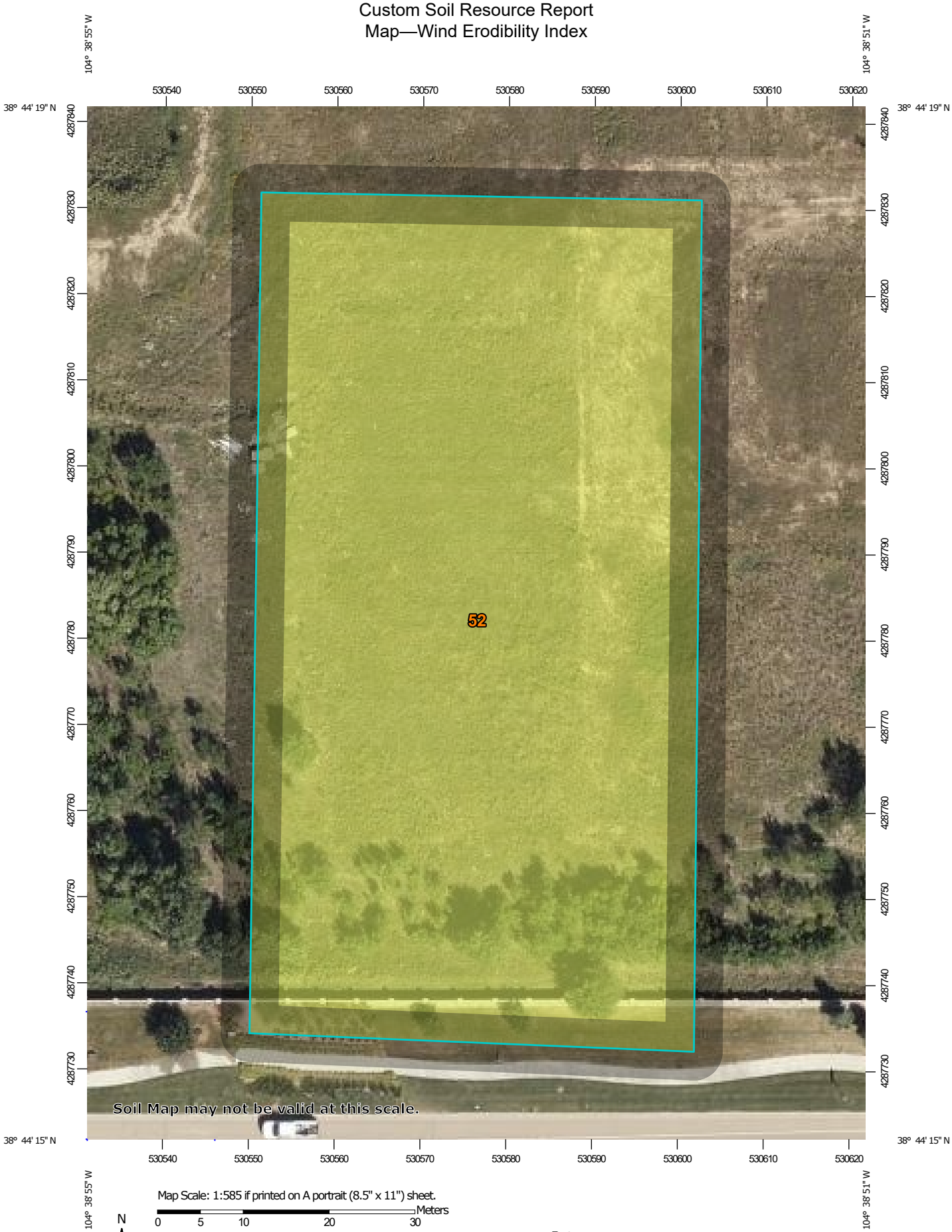
The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

Wind Erodibility Index

The wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.



Map Scale: 1:585 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Lines

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Points

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 21, Aug 24, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 14, 2018—Sep 23, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Wind Erodibility Index

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
52	Manzanst clay loam, 0 to 3 percent slopes	86	1.3	100.0%
Totals for Area of Interest			**1.3**	**100.0%**

Rating Options—Wind Erodibility Index

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

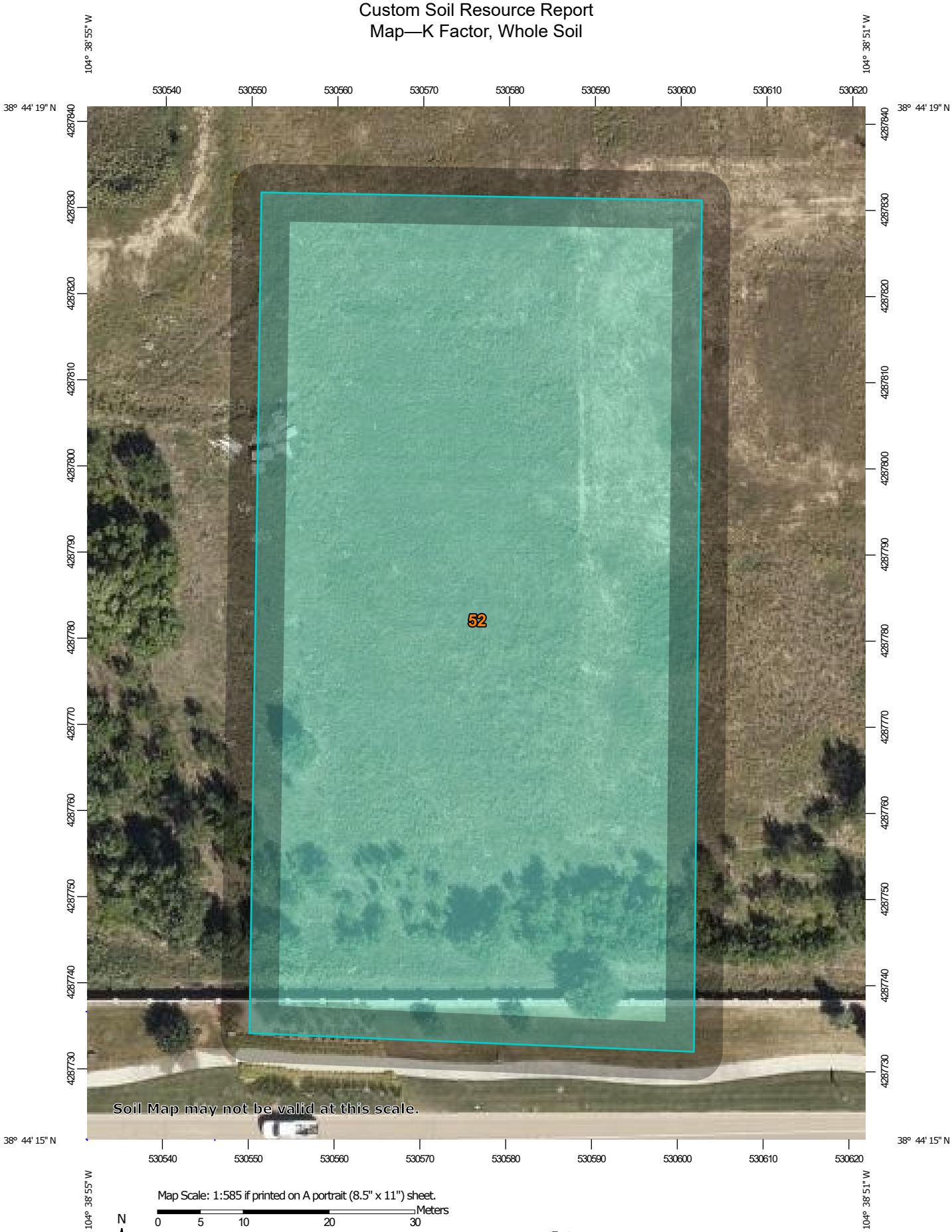
Tie-break Rule: Higher

K Factor, Whole Soil

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.



Map Scale: 1:585 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 14, 2018—Sep 23, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
52	Manzanst clay loam, 0 to 3 percent slopes	.32	1.3	100.0%
Totals for Area of Interest			**1.3**	**100.0%**

Rating Options—K Factor, Whole Soil

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

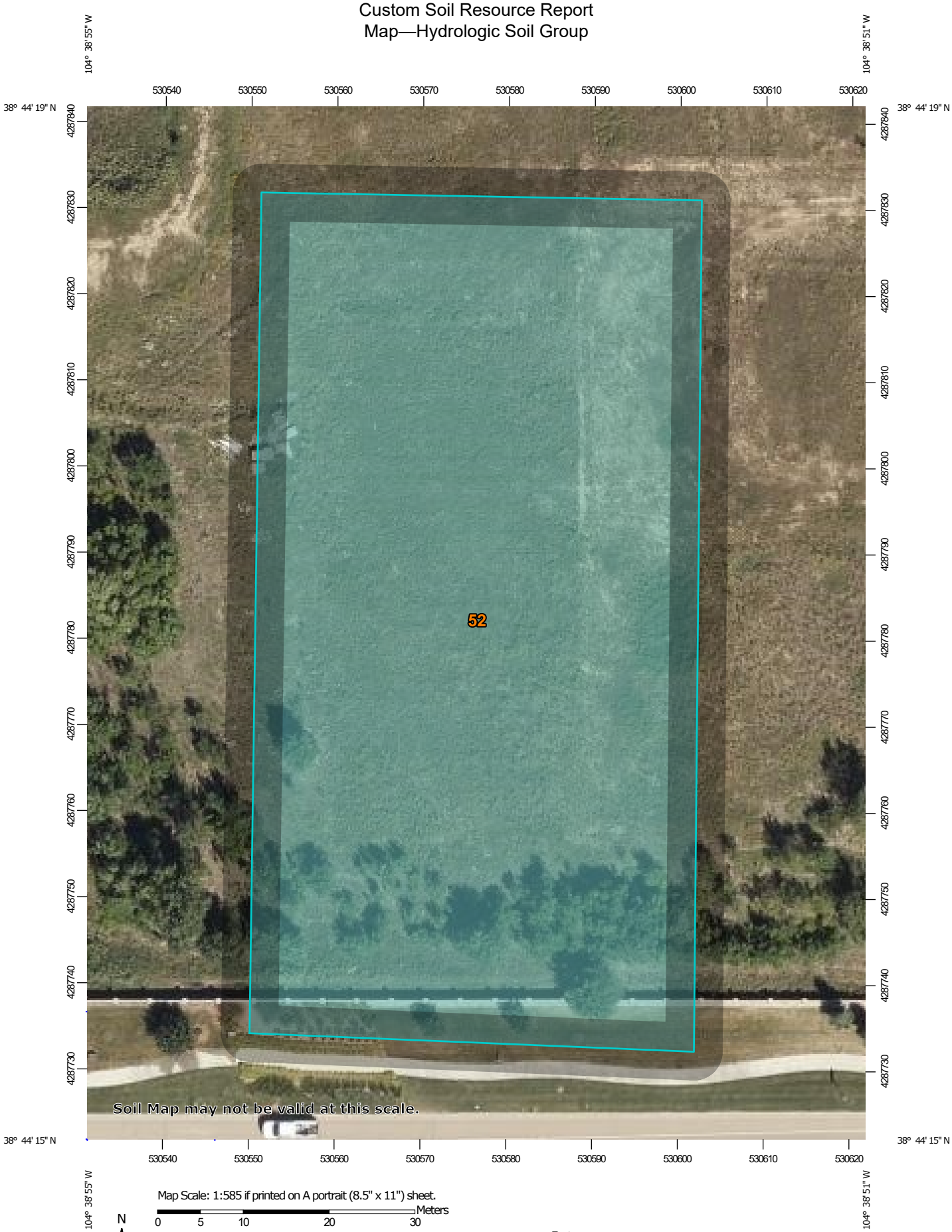
Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



Map Scale: 1:585 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 14, 2018—Sep 23, 2018

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Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
52	Manzanst clay loam, 0 to 3 percent slopes	C	1.3	100.0%
Totals for Area of Interest			**1.3**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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APPENDIX D – GEOTECHNICAL SUBSURFACE SOIL INVESTIGATION

Geotechnical Engineering Report

Colorado Springs McDonalds
NEC of Marksheffel Road and Fontaine Boulevard
Colorado Springs, Colorado

Prepared for:
McDonalds USA

Prepared By:
Universal Engineering Sciences (UES)
477 Parkland Drive, Sandy, Utah 84070

August 2, 2023
Revised August 18, 2023
Project No. 4430.2300012

Universal Engineering Sciences (UES)
477 Parkland Drive
Sandy Utah, 84070
P. 801.648.5206 | Team UES.com

August 2, 2023
Revised August 18, 2023

McDonalds USA
577 South 200 East
Salt Lake City, Utah 84075

Attention: Mr. Trevor Prophet

Reference: **Geotechnical Engineering Report**
Colorado Springs McDonalds
NEC Marksheffel Road and Fontaine Boulevard
Colorado Springs, CO
Project No: 4430.2300012

Universal Engineering Sciences (UES) is pleased to submit this Geotechnical Engineering Report for the referenced project. This report includes the results from the field exploration and laboratory testing program along with recommendations for use in preparation of the appropriate design and construction documents for this project.

UES appreciates the opportunity to provide this Geotechnical Engineering Report and looks forward to continuing participation during the design and construction phases of this project. UES also has great interest in providing construction services, including materials testing and inspection services during the construction of this project and will be glad to meet with you to further discuss how we can be of assistance as the project advances.

If there are questions pertaining to this report, or if UES may be of further service, please contact us at your convenience.

Respectfully,
Universal Engineering Sciences (UES)

Trae D. Boman, G.I.T.
Staff Geologist

Martin D. Jensen, P.E.
Principal Engineer

Table of Contents

FIGURES
APPENDIX

1.0 INTRODUCTION

This report presents the results of our geotechnical exploration for the project site located at the northeast corner of Marksheffel Road and Fontaine Road in Colorado Springs, Colorado. The general location of the site is shown on Figure No. 1, Vicinity Map.

The purpose of our services was to provide subsurface information and preliminary geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Earthwork recommendations
- Foundation selection and design parameters
- Floor slab design and construction
- pavement design and construction

This report is for the purpose of providing geotechnical engineering and/or testing information and requirements. The scope of our services for this project did not include any environmental assessment or investigation for the presence or absence of hazardous or toxic material in structures, soil, surface water, groundwater, or air, below or around this site.

1.1 PROJECT DEVELOPMENT

It is our understanding that a new McDonalds restaurant will be built on the site. We expect structures to be wood-frame or reinforced masonry construction up to one story in height. Maximum column and wall loads are assumed to be on the order of 30 kips and 3.5 kips per linear foot, respectively. We do not anticipate basement levels and expected the finished grade to be within four (4) feet of existing ground surface. There will be on-site paved areas.

1.2 SITE DESCRIPTION

It is our understanding that the proposed project site consists of an undeveloped parcel of land bounded on the east by an undeveloped parcel, on the north by an irrigation ditch, on the west by Marksheffel Road and on the south by Fontaine Road. The site is vacant, with light vegetation and remnant piping across the site.

1.3 SCOPE OF WORK

Mr. Trevor Prophet, representing McDonalds, gave authorization for UES services on July 6th, 2023, by sending PO number 2656389. The scope of our services for this project included a subsurface exploration program consisting of drilling four (4) borings to depths of 15 ft to 20 ft below existing site grades. The borings were logged during drilling and samples were obtained to aid in material classification and for possible laboratory testing. The approximate locations of the borings are shown on Figure No. 2, Boring Plan. The locations of the borings were determined in the field by approximating distances from existing features or improvements. The locations of the borings should be accurate only to the degree implied by the method used. Results of the borings are presented in the Appendix.

2.0 FINDINGS

2.1 GEOLOGICAL INFORMATION

The project site is in Colorado Springs, CO which is in the Great Plains physiographic region, just east of the Southern Rocky Mountains. It is in east-central Colorado 70 miles south of Denver and is approximately 5,712 feet in elevation. Colorado Springs, CO is bound by the Palmer Divide to the north, the Front Mountain Range and Pikes Peak to the west, with high plains to the east and high desert to the south. The Rocky Mountains were uplifted by the Laramide Orogeny during the late Cretaceous geologic period. The surficial geology of the Colorado Springs area consists of Upper cretaceous bedrock covered by Quaternary coarse to fine grained alluvial deposits. The project site is located approximately 10 miles from the Ute Pass fault zone.

The geology of the USGS Geologic Map of the Fountain quadrangle, El Paso County Colorado which includes the subject site, shows the surficial geology of the job site as Alluvium three (Mapped as Qa_3) dated to the lower to middle Holocene. Qa_3 is described as "Dark-brownish gray to tan-gray, stratified, poorly to occasionally well-sorted sand and clayey to silty sand. Unit can contain clean, medium-grained, well-sorted sand layers and sporadic gravel lenses with clasts sizes up to small cobbles. Gravel provenance is crystalline rocks reworked from conglomerates in the Dawson Formation up-valley along Jimmy Camp Creek or reworked from Pleistocene gravel-capped mesas; contains angular concretion fragments derived from the Pierre Shale.".[1]

According to the USDA Soil Survey for the site, the onsite surficial soils are mapped as Manzanst clay loam, 0 to 3 percent slopes (Fb) throughout the site. Clay loam soils typically have between 20 to 46 percent sands, and more than 27 to 40 percent clays. These typical descriptions are consistent with the encountered surficial subsurface soils from the exploration.

The natural soils are covered by approximately 1 foot of uncontrolled fill. The upper 4 to 5 feet of soils were encountered to be very soft, reddish-brown silt, generally in a moist condition. The boring logs and laboratory test results presented in the Appendix should be referred to for more detailed information.

2.2 SITE CLASS

The 2018 International Building Code (IBC) requires that a default Site Class D be assumed for seismic design when soil conditions for the top 100 feet are not known in sufficient detail for determination in accordance with Table 20.3-1 of ASCE Standard 7. UES is available to determine the shear wave profile of the top 100 feet underlying the site from ambient noise or refraction microtremor (ReMi) data using standard P-wave geophones. We recommend that the project's structural engineer be consulted to assess whether the increase in site class will provide sufficient benefit to offset the additional cost for this service. The site is located at approximately the following latitude and longitude:

Latitude	Longitude
38.7384	-104.6484

[1] White, J.L., Lindsey, K.O., Morgan, M.L., and Mahan, S.A., 2017, Geologic Map of the Fountain Quadrangle, El Paso County, Colorado, Colorado Geological Survey, Open-File Report 17-05, 1:24,000.

A search of the USGS Earthquake Hazards Program's ASCE 7-16 data, as published by the Applied Technology Council (hazards.atcouncil.org), indicated the following spectral acceleration parameters for the location indicated above and a Site Class D:

Mapped Acceleration Parameters	
S_S	0.183 g
S_1	0.056 g
Design Acceleration Parameters	
S_{DS}	0.195 g
S_{D1}	0.089 g

2.3 COLLAPSIBLE AND EXPANSIVE SOILS

Collapsible soils are defined as any unsaturated soil that goes through a radical rearrangement of particles and great decrease in volume upon wetting, additional loading, or both. According to the Colorado Geologic Survey's collapsible soils hazard map, the project is in an area that has potential to have collapsible soils. There are historic cases of collapsible soils within 10 to 15 miles of the project area. The EG-14 Collapsible Soils in Colorado indicates that due to the soil composition of the project area, there is some risk for collapsible soils.

Expansive soils typically contain clay minerals that are capable of absorbing water. When they absorb water, they increase in volume. According to the Colorado Geologic Survey Map of Areas Susceptible to Differential Heave in Expansive, Steeply Dipping Bedrock, City of Colorado Springs, Colorado (CGS, 1999), the project site is located approximately 12.1 miles from mapped expansive soil areas.

2.4 GROUNDWATER

Perched groundwater was encountered in the top three feet of borehole 4 near the drainage ditch. No other groundwater was encountered on site. However, seasonal fluctuations in groundwater elevations may result in variations in the groundwater level below grade. It should be noted that the project vicinity has received an above average precipitation over the winter and may have influenced the moisture and groundwater levels.

2.5 LIQUEFACTION

Liquefaction is defined as the condition when saturated, loose, finer-grained sand-type soils lose their support capabilities because of excessive pore water pressure which develops during a seismic event. Due to most soils being significantly fine grained, and the limited amount of groundwater within the depths explored, the potential for liquefaction at this site can be considered "Low."

2.6 CORROSIVITY

Based on test results and Table 19.3.1.1 of ACI 318-14 Section 19.3, the on-site soils classify as having a "S0" sulfate exposure. Please refer to Table 19.3.2.1 of ACI 318-14 for the requirements for concrete by exposure class. Consideration should be given to providing protection to buried metal pipes or use of nonmetallic pipe, where permitted by local building codes. Non-corrosive backfills, protective coatings and wrappings, sacrificial anodes, or a combination of these methods could be considered. Universal

Engineering Sciences personnel are not experts regarding corrosion and/or corrosion protection. We recommend a “Corrosion Engineer” be consulted for actual recommendations regarding the necessity and/or method of cathodic protection.

Additionally, we expected the project site to be subject to a seasonal frost depth between 2-3 feet below grade as determined by the Federal Highway Administration National Highway Institute Soils and Foundations, Reference Manual. Vol. I (FHWA-NHI-06-08 8). Therefore, we classify the site as having a Freezing and Thawing exposure of "F3" based on Table 19.3.1.1 of ACI 318-14 Section 19.3 and the expectation that heavily trafficked portions of the site will be subject to de-icing agents during winter months.

2.7 Landslides and Avalanches

A landslide is defined as the movement of a mass of rock, debris, or earth down a slope. Due to the low topographic relief, the potential for landslides is considered low. Also, due to the low topographic relief and distance from the mountain front, the potential for avalanches is considered low.

2.8 Radon

The Colorado Department of Environmental Public Health shows El Paso County has an elevated risk for radon. A full radon investigation was beyond our proposed scope of work but with the proposed construction not having basements we believe the risk is reduced.

2.9 Abandon Mines

The nearest abandoned mines, Old Shiek Mine and Bacon Mines, are both approximately 6 miles away. The Old Sheik Mine is to the southeast and the Bacon Mine is to the northwest of the project site.

3.0 RECOMMENDATIONS

3.1 General

Our recommendations are based on the soil conditions, being like those encountered within the explorations. If variations are noted during construction or if changes are made in site plan, structural loading, foundation type or floor level, we should be notified so we can supplement our recommendations, as applicable.

The upper 4 to 5 feet of the encountered soils were very soft and were not considered suitable for direct support of typical shallow foundations in their present condition. This soil would need to be removed and replaced with properly placed and compacted structural fill or be subjected to some ground stabilization or modification.

3.2 Earthwork

3.2.1 General

Earthwork should be performed in accordance with the guidelines presented in Chapter 18 of the 2018 IBC, except where specific recommendations are presented in this report. It is recommended that contractors perform their own reconnaissance of the site. If the contractors have any questions regarding

site conditions, site preparation or recommendations in this report, they should contact a representative of Universal Engineering Sciences.

3.2.2 Site Clearing

Strip and remove existing vegetation, debris, uncontrolled fill, loose, soft, or disturbed natural soils, and other deleterious materials from proposed building areas, adjacent walks, and slabs, and in areas to be paved. Excavations should extend at least 5 feet beyond the areas to be improved in plan view. Uncontrolled fill is defined as any existing fill that was not properly placed, observed, and tested.

All exposed surfaces should be free of mounds and depressions which could prevent uniform compaction. If unexpected fills or abandoned structures/improvements are encountered during site clearing, such features should be removed and the excavation thoroughly cleaned and backfilled. All excavations should be observed by the geotechnical engineer prior to backfill placement.

Demolition of existing structures/improvements should include removal of any foundation system and utilities. Any excavations because of demolition and removal should be properly filled.

All materials derived from the demolition of existing structures/improvements should be removed from the site, and not be allowed for use in any fills. In some cases, existing pavements, if properly broken up, can be used in required fills. The geotechnical engineer should determine the suitability for use based on conditions in the field.

3.2.3 Subgrade Preparation

As mentioned previously, the upper 4 to 5 feet of soils were encountered to be very soft. Therefore, within the building footprint and at least 5 feet beyond, these soils should be undercut to a depth of 3 feet below footings or 5 feet below existing grades and replaced with properly placed and compacted structural fill materials. For monument signs and trash enclosures the depth may be reduced to 2 feet below footings. Within pavement subgrade areas the upper soils should be overexcavated to a depth of 2 feet below subgrade elevation.

Alternatively, the soil could be improved utilizing soil stabilization or ground modifications techniques. The methods could include rammed aggregate piers, or variations of grouting or compaction grouting. Practical solutions can be discussed as the design phase progresses.

Following site clearing and over-excavation, the newly exposed subgrades in site improvement areas intended for structures and pavements must be approved by the Geotechnical Engineer prior to fill placement. These exposed subgrades should be proof rolled with a loaded tandem axle dump truck or similar piece of rubber-tired equipment (20 tons or greater) in the presence of the Geotechnical Engineer's representative. The purpose of the proof rolling is to detect the existence of marginal or loose near-surface materials or unsuitable soils that may require additional undercutting. Areas which deflect, rut or pump excessively during proof rolling, and which cannot de densified in-place, should be undercut to suitable soils and backfilled as directed by the geotechnical engineer. Proof rolling should not be performed on saturated or frozen soils, or during wet weather conditions.

3.2.3 Excavation

It is anticipated that excavations of the on-site natural, non-cemented deposits for the proposed project can be accomplished with conventional earthmoving equipment. Contractors, especially those excavating

for foundations or utilities, should satisfy themselves as to the hardness of materials and equipment required.

Temporary unsurcharged construction excavations should be sloped or shored. Slopes should not be steeper than 1½ horizontal to 1 vertical. Slopes may need to be flattened depending on conditions exposed during construction. Exposed slopes should be kept moist (but not saturated) during construction. If there is not enough space for sloped excavations, shoring should be used. Traffic and surcharge loads should be kept back at least 10 feet from the top of the excavation. Slope stability analysis of embankments (natural or constructed) is not within the scope of this study.

Excavation, trenching and shoring should be conducted in accordance with the U.S. Department of Labor Occupational Safety and Health Administration's (OSHA) Excavation and Trenching Standard, Title 29 of the Code of Federal Regulation (CFR), Part 1926.650. Safety of construction personnel is the responsibility of the contractor.

Surface runoff should be drained away from excavations and not allowed to pond in the bottom of the excavation. Concrete for foundations should be placed as soon as practical after the excavation is made. That is, the exposed foundation soils should not be allowed to become excessively dry or wet before placement of concrete.

3.2.4 Fill Materials

On-site soils meeting the following criteria, as determined by visual observation by the 3rd party inspector, may be used in required fills:

- Most of the material (90+ percent) is 6 inches or less in maximum dimension.
- The minus 6-inch material is comprised of at least 70 percent by weight of material finer than ¾-inch in size.
- The material is free of debris and organic matter.

In general, material greater than 12 inches in diameter should not be used in fills within 3 feet below the bottom of the footing within building pad areas. Fill containing material greater than 6 inches in diameter should not be used in any utility trenches, behind retaining walls or against foundations or grade beams.

Imported material should be suitable for its intended use. All imported materials should be approved by the geotechnical firm providing testing during construction, prior to importing. In general, imported soils should be low-expansive (less than 2.0% if tested using a 60 psf load or an expansion index of less than 20), have a maximum solubility of less than 0.50%, a maximum sulfate content of less than 0.10% and a maximum sodium sulfate content less than 0.20%. A chloride content of less than 500 mg/kg is recommended if post-tensioned foundations are planned.

3.2.5 Fill Placement and Compaction

Fill materials should be placed on a horizontal plane unless otherwise accepted by the geotechnical engineer. Where the slope ratio of the original ground is steeper than 5H:1V, the slope should be benched to create near-level areas for the placement of fill. The maximum allowable height of the bench is 3 feet. Bench excavation should be continued to the top of the existing slope in structural fill areas or the daylight (cut/fill) contact.

All required fill should be placed in loose lifts generally not over 8 to 12 inches in thickness. Materials should be compacted to the following:

- Note: For compaction, fine-grained soils are soils with at least 30% passing the No. 200 Sieve.
- All Fill placed deeper than 5 feet below final grade should be compacted to a minimum of 95% at a moisture content of optimum or greater.
- Retaining wall backfill only needs to be compacted to a minimum of 90%.

Structural fill should be observed and tested as necessary to determine compliance with the compaction requirements presented in this report. In general, one compaction test should be performed for approximately every 1,000 cubic yards of fill, one for one foot of fill placed, or change in material.

Material	Percent Compaction (ASTM D1557)	Minimum Moisture Content
Fine-grained	90 Minimum	Optimum
Granular	95 Minimum	-2% of Optimum
Untreated Aggregate Base Course	95 Minimum	-2% of Optimum

3.2.6 Material Volume Changes

Clearing and grubbing operations will result in some loss of material. Excavation and re-compaction of the on-site soils will result in shrinkage losses. Based on our experience, a shrinkage factor of approximately 5 to 10 percent would be applicable for the upper natural soils when excavated and recompacted. As an example, a shrinkage factor of 10 percent would mean it would require 1.10 cubic yards of excavated material to equal 1.0 cubic yard of properly compacted fill. Scarification and compaction of surface soils will cause additional shrinkage.

3.3 FOUNDATIONS

If the grading recommendations presented in the Earthwork section of this report are complied with, the proposed structures and any block walls or retaining walls may be supported by conventional footings. Foundations should be established on approved native soils at least medium dense in consistency or properly compacted fill.

Foundations should be at least 18 inches wide, and the bottom of the foundations should be established at least 30 inches below the lowest adjacent final compacted subgrade. Foundations, established as recommended, may be designed to impose a net dead- plus live-load pressure of 2,000 pounds per square foot (psf). The bearing value may be increased by 1,000 psf for each additional 12 inches of embedment. However, the maximum net bearing value should not exceed 4,000 psf. A one-third increase may be used for wind or seismic loads when used with the alternative basic load combination of section 1605.3.2 of the 2018 IBC.

Settlement of the proposed structure, supported as recommended, should be within acceptable limits (less than 1 inch) based on the assumed loads. Differential settlement should be less than ½-inch. However, it is important that recommendations presented in the Drainage and Moisture Protection section of this report be adhered to. Settlement may be further reduced by following the recommendations provided on the Site Improvements section of this report.

3.4 On-Site Pavement

The pavement area subgrade should be properly prepared as outlined in the Earthwork section of this report before placing any asphalt or base materials. Proper drainage of the paved areas should be provided to increase the pavement life. In addition, pavements must be maintained for durability and integrity during their life. Therefore, periodic seal coating, crack sealing, and/or patching may be required.

Near surface soils at the project site generally have an AASHTO classification of A-4. We estimate the soils have a CBR value of 10 or less. UES is available to perform a CBR test to determine the exact value which may allow for a less conservative pavement recommendation. Light-duty asphalt pavement sections are recommended for traffic areas subjected exclusively to automobile and pick-up truck traffic. Moderate-duty or thicker asphalt concrete sections are recommended for areas subject to light volume truck traffic. We recommend the following minimum pavement section thickness for on-site paved areas:

Traffic Area	Asphalt (inches)	Untreated Base Course (inches)
Light traffic and parking Areas (31.75 kN Wheel Loads)	3	6
Medium traffic (40.82 kN Wheel Loads)	4	6

Asphalt should conform to local specifications or to APWA requirements as applicable. Untreated base course (UTBC) should conform to city or state specifications or 1-inch minus aggregate base and have a minimum CBR value of 70% as applicable. Subgrade should be compacted to a minimum of 95 percent (ASTM D1557). Field and laboratory testing of asphalt and base materials should be performed to determine whether specified requirements have been met.

The performance of the pavement can be enhanced by minimizing excess moisture which can reach the subgrade soils. The following recommendations should be followed, where possible:

- Site grading at a minimum 2% grade away from the pavements.
- Compaction of any utility trenches for landscaped areas to the same criteria as the pavement subgrade.
- Consideration should be given to using "desert" landscaping and/or minimizing watering to help prevent surface runoff.
- Placing compacted backfill against the exterior side of curb and gutter.

Portland Cement Concrete (PCC) pavement is recommended in areas of truck traffic. A minimum of 6-inch thickness of PCC pavement is recommended in these areas.

3.5 Drainage and Moisture Protection

Foundation soil should generally not be allowed to become saturated during or after construction, except when necessary to increase moisture contents prior to construction. Infiltration of water into foundation or utility excavations should be prevented during construction. Utility lines should be properly installed and the backfill properly compacted to avoid possible sources for subsurface saturation.

Positive drainage away from the structures should be provided during construction and maintained throughout the life of the structures. Any downspouts, roof drains or scuppers should discharge into splash blocks or extensions and away from the structures. Backfill against footings, exterior walls and in

utility trenches should be properly compacted and free of all construction debris to reduce the possibility of moisture infiltration.

Performance of the foundation system recommended in this report is dependent on the ability to keep moisture from penetrating the soils below foundations and slabs. Therefore, we recommend the following:

- Positive drainage should be maintained away from the structures, adjoining concrete slabs and block walls. Positive drainage of 10% minimum shall be maintained for areas adjacent to structures or block walls that are not covered by concrete or asphalt. The 10% should be maintained for 10 feet. Where concrete or asphalt abut structures or block walls, the surface of these materials should be sloped a minimum of 2% away from structures or block walls. If physical obstructions or lot lines prohibit 10 feet of horizontal distance, the slope should be provided to an approved alternate method of drainage.
- No landscaping or sprinklers should be allowed within 5 feet of the buildings or block walls.
- Watering should be kept to a minimum.

If the above recommendations are not followed there would be an increased risk/potential for increasing moisture below foundations and slabs which could result in additional movement and distress to structures and slabs.

3.6 FLOOR SLABS

Moisture protection should be provided by a relatively impervious vapor retarder placed beneath interior slabs. The vapor retarder should be a Class A vapor retarder at least 10 mils in thickness, meeting the requirements of ASTM E1745, and should conform to and be placed in accordance with the requirements of the project structural engineer or architect. If the concrete is to be placed directly on aggregate base, the aggregate base should be moistened (but not saturated) prior to placement of concrete.

Recommendations presented by the American Concrete Institute (ACI 302) for slabs-on-grade should be complied with for all concrete placement and curing operations. Improper curing techniques and/or excessive slump (water-cement ratio) could cause excessive drying/shrinkage resulting in random cracking and/or slab curling. Concrete slabs should be allowed to cure adequately before placing vinyl or other moisture sensitive floor coverings.

4.0 OTHER SERVICES

Universal Engineering Sciences should be retained to provide a general review of final design plans and specifications in order that grading, and foundation recommendations may be interpreted and implemented. If any changes to the proposed project are planned, the conclusions and recommendations contained in this report should be reviewed and the report modified or supplemented as necessary.

Universal Engineering Sciences should also be retained to provide services during excavation, grading, foundation, and construction phases of work. Observation of foundation excavations should be performed prior to placement of reinforcing and concrete to confirm that satisfactory bearing materials are present. Field and laboratory testing of concrete and soils should be performed to determine whether applicable requirements have been met. In addition, continuous special inspections and tests are required for soils as specified in the 2018 IBC, Table 1705.6.

The analyses and recommendations in this report are based in part upon data obtained from the field exploration. The nature and extent of variations beyond the locations of the explorations may not become evident until construction. If variations then appear evident, it may be necessary to re-evaluate the recommendations of this report.

5.0 CLOSURE

Our professional services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities. No warranties, either expressed or implied, are intended or made. We prepared this report as an aid in the design of the proposed project. This report is not a bidding document. Any contractor reviewing this report must draw his own conclusions regarding site conditions and specific construction techniques to be used on this project.

N

Project Location

0 5 10 20 30 40
Miles

The presented layers were obtained from various sources including ESRI, USGS, USDA, CCBD GISMO, CCFCD, GIS User Community among others.
The GIS information is presented for reference only.
No warranties, either expressed or implied, are intended or made.
If you have any questions regarding this information, please contact UES.

UES

PROJECT:

McDonalds Colorado Springs

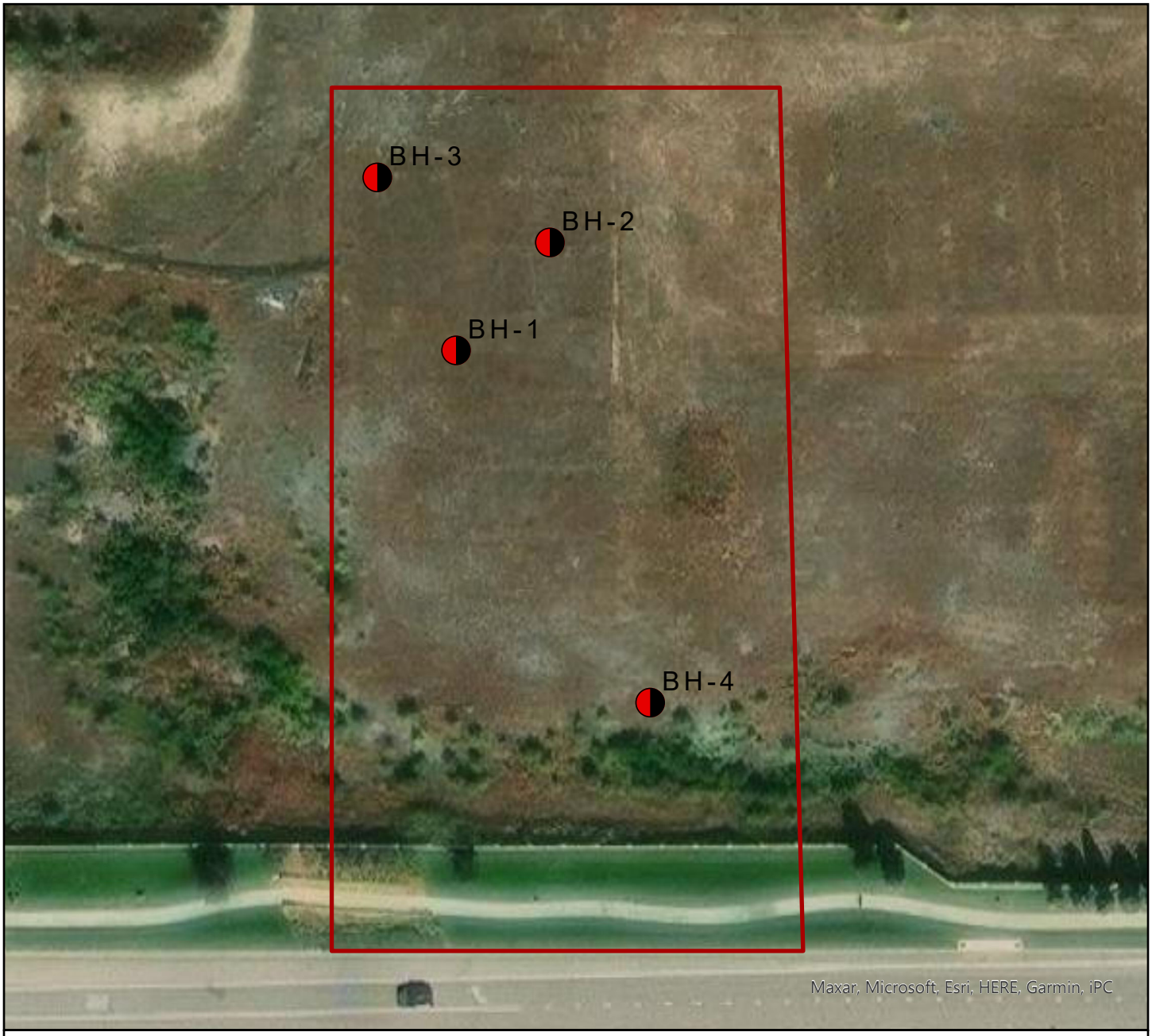
CLIENT:

McDonalds Corporation

Project Location Map

PROJECT NO: 4430.2300012

FIGURE NO: 1



N

Legend

- Borehole Location
- Project Boundary

0 20 40 80 120
US Feet

The presented layers were obtained from various sources including ESRI, USGS, USDA, CCBD GISMO, CCFCD, GIS User Community among others.
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UES™

PROJECT:
McDonalds Colorado Springs

CLIENT:
McDonalds Corporation

Borehole Location Map

PROJECT NO:
4430.2300012

FIGURE NO:
2

APPENDIX

Site Exploration

The subsurface conditions of the site were explored by drilling four (4) borings to target depths of 15 to 20 feet below existing site grade. The borings were drilled using a solid steam drill rig.

Soils were logged during drilling and samples were obtained to aid in material classification and for possible laboratory testing. The boring logs are presented on Plates 1 through 4. The number of blows required to drive a 2-inch diameter sampler (SPT) 12 inches using a 140-pound weight dropped 30 inches are shown on the logs. The soil is generally classified by the Unified Soil Classification System.

Laboratory Testing

Laboratory testing was performed on selected samples of on-site soil. Tests were performed in general accordance with applicable ASTM or local standards.

Sieve analyses and Atterberg Limits were performed to determine the grain-size distribution and soil classification of representative materials. The test results are presented on Plates 4 through 8 and summarized in the table below.

Sample	Description	Liquid Limit	Plasticity Index	%Fines
BH-1 @ 6 ft.	Silty Sand (SM)	-	-	16.7
BH-1 @ 10 ft	Sandy Silt (ML)	36	14	-
BH-2 @ 15 ft.	Sandy Silt (ML)	-	-	86.7
BH-3 @ 2.5 ft.	Silty Sand (SM)	31	NP	43.8
BH-4 @ 7.5 ft	Sandy Silt (ML)	36	NP	56.1

NP = Non-plastic

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Colorado Springs McDonald's

Lat/Lon: 38.738282/-104.648215

SOIL BORING: BH-1

Date Started:	07/15/2023	Date Completed:	07/15/2023	Location Accuracy:	Estimated from Google Maps
Checked By:	TB	Driller:	Derek and Cesar	Drilling Firm:	Dakota Drilling
Hammer Type:	Auto	Hammer Weight:	145	Logged By:	Kayla Whipple
Method:	Auger	Reported Depth:	20'		

Rig Type: CME-75
Tooling: 4" Solid Stem Auger
Surface Elevation: 5708.8'

Depth (Feet)	Visual Classification and Remarks	Depth of Sample	Sample Number	Blow Counts	% Fines	Atterberg Limits (LL-PL-PI)	Moisture Content (%)	Dry Density
0	**FILL**, dark reddish brown, dry, **Silty Sand**							
1.0	Dark reddish brown, dry, **Silty Sand**, More sandy at 5 foot interval	2.5'	BH-1 2.5	2 3 3 3				
5		5'	BH-1 5	3 4 5 4	16.7		3.8	
6.0	Tan, dry, **Sandy Lean Clay**	7.5'	BH-1 7.5	8 9 6 7		36-22-14		
7.0	Reddish brown, dry, **Sandy Silt**, Evaporate Veins, Compacted	10'	BH-1 10	8 9 12 15				
10								
10.0	Light tan, dry, fine, **Sandy Silt**, Thin layers of unconsolidated sand							
15			BH-1 15	6 8 9 9				
15.0	Brown, dry, **Silty Sand**	20'	BH-1 20	5 7			15.6	
20								
	Terminated							
25								
30								
35								

Moisture Content 0 50 100
Plastic Limit 0 50 100
Liquid Limit 0 50 100

Silty Sand		Large Split Spoon	
Sandy Lean Clay		California Sampler	
Sandy Silt		-	

Depth	Comment
-	-
-	-

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SOIL BORING: BH-2

Date Started:	07/15/2023	Date Completed:	07/15/2023	Location Accuracy:	Surveyed
Checked By:	TB	Driller:	Derek and Cesar	Drilling Firm:	Dakota Drilling
Hammer Type:	Auto	Hammer Weight:	145	Logged By:	Kayla Whipple
Method:	Auger	Reported Depth:	15'		

Rig Type: CME-75
Tooling: 4" Solid Stem Auger
Surface Elevation: 5708.9'

Depth (Feet)	Visual Classification and Remarks	Depth of Sample	Sample Number	Blow Counts	% Fines	Atterberg Limits (LL-PL-PI)	Moisture Content (%)	Dry Density
0	**FILL**, dark reddish brown, dry **Silt** with coarse, **Sand**							
1.0	Dark reddish brown, dry **Silt** with coarse, **Sand**	2.5'	BH-2 2.5	2 3 2 3				
2.5	Light red brown, dry, **Silty Clayey Sand**, Sandy layer at 6.5' interval	5'	BH-2 5	4 5 3 4				
5.0	Dry, **Sandy Silt**	7.5'	BH-2 7.5	6 6				
7.5	Red brown, dry, **Sandy Silt**	10'	BH-2 10	7 9 10 10				
10.0	Red brown, dry, **Sandy Silt**, Evaporate veins, compacted	15'	BH-2 15	7 10 8 8	86.7		15.2	
15	Terminated							
20								
25								
30								
35								

Moisture Content 0 50 100
Plastic Limit 0 50 100
Liquid Limit 0 50 100

Silt	Large Split Spoon
Silty Clayey Sand	California Sampler

Depth	Comment
-	-
-	-

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SOIL BORING: BH-3

Date Started:	07/15/2023	Date Completed:	07/15/2023	Location Accuracy:	Surveyed
Checked By:	TB	Driller:	Derek and Cesar	Drilling Firm:	Dakota Drilling
Hammer Type:	Auto	Hammer Weight:	145	Logged By:	Kayla Whipple
Method:	Auger	Reported Depth:	15'		

Rig Type: CME-75
Tooling: 4" Solid Stem Auger
Surface Elevation: 5710.5'

Depth (Feet)	Visual Classification and Remarks	Depth of Sample	Sample Number	Blow Counts	% Fines	Atterberg Limits (LL-PL-PI)	Moisture Content (%)	Dry Density
0	**FILL**, dark reddish brown, dry, **Silty Sand** 1.0							
	Dark reddish brown, dry, **Sandy Silt**, Compacted 2.5	2.5'	BH-3 2.5	2 2 1 2	43.8	NP	15	
	Reddish brown, dry **Silt** with medium grained, **Sand** 5.0	5'	BH-3 5	2 3 5 7				
5	Dark reddish brown, dry **Silt** with medium grained, **Sand**, Compacted, Evaporate veins 7.5	7.5'	BH-3 7.5	8 12 13 16				
	Reddish brown, dry **Silt** with medium grained, **Sand**, Evaporate veins 10.0	10'	BH-3 10	8 16 19 21				
10	Reddish brown, dry **Silt** with coarse grained, **Sand**, Compacted, Evaporate veins	15'	BH-3 15	5 7 5 5				
15	Terminated							
20								
25								
30								
35								

Moisture Content 0 50 100
Plastic Limit 0 50 100
Liquid Limit 0 50 100

Silty Sand	Large Split Spoon
Sandy Silt	-

Depth	Comment
-	-
-	-

UNIVERSAL ENGINEERING SCIENCES
477 Parkland Dr, Sandy, UT 84070, USA
Office: +1 (801) 448-0322

Colorado Springs McDonald's

Lat/Lon: 38.738004/-104.648085

SOIL BORING: BH-4

Date Started:	07/15/2023	Date Completed:	07/15/2023	Location Accuracy:	Surveyed
Checked By:	TB	Driller:	Derek and Cesar	Drilling Firm:	Dakota Drilling
Hammer Type:	Auto	Hammer Weight:	145	Logged By:	Kayla Whipple
Method:	Auger	Reported Depth:	15'		

Rig Type: CME-75
Tooling: 4" Solid Stem Auger
Surface Elevation: 5708.4'

Depth (Feet)	Visual Classification and Remarks	Depth of Sample	Sample Number	Blow Counts	% Fines	Atterberg Limits (LL-PL-PI)	Moisture Content (%)	Dry Density
0	**FILL**, dark red brown, wet, **Sandy Silt** 1.0							
	Dark red brown, wet, **Sandy Silt** 2.5	2.5'						
	Tan, dry, fine, **Silty Clayey Sand** 5.0	5'	BH-4 2.5	3 2 3 4			24.3	
5	Light red brown, dry, **Sandy Silt** 7.5	7.5'	BH-4 5	4 6 6 7				
	Dark red brown, dry, **Sandy Silt**, Compacted 10.0	10'	BH-4 7.5	4 4 4 4	56.1	NP	12.7	
10	Red brown, dry, **Sandy Silt**, Compacted, Evaporate veins		BH-4 10	6 8 7 6				
15		15'	BH-4 15	4 5 7 8				
	Terminated							
20								
25								
30								
35								

Moisture Content 0 50 100
Plastic Limit 0 50 100
Liquid Limit 0 50 100

Sandy Silt	Large Split Spoon
Silty Clayey Sand	California Sampler

Depth	Comment
-	-
-	-

Water Content and Unit Weight of Soil

(In General Accordance with ASTM D7263 Method B and D2216)

Project: **Universal Engineering Sciences**
No: **M04301-003 (4430.2300012)**
Location: Colorado Springs McDonald's
Date: 7/21/2023
By: BRR

Sample Info.	Boring No.	BH-2	BH-4						
	Sample	BH-2 7.5'	BH-4 15'						
	Depth	7.5'	15'						
	Split	No	No						
	Split sieve								
Total sample (g)									
Moist coarse fraction (g)									
Moist split fraction (g)									
Unit Weight Data	Sample height, H (in)	2.994	3.562						
	Sample diameter, D (in)	1.901	1.927						
	Mass rings + wet soil (g)	772.39	695.06						
	Mass rings/tare (g)	561.09	367.41						
	Moist unit wt., γ_m (pcf)	94.7	120.2						
	Wet soil + tare (g)								
	Dry soil + tare (g)								
	Tare (g)								
	Water content (%)								
Water Content Data	Wet soil + tare (g)	276.26	219.45						
	Dry soil + tare (g)	270.01	208.15						
	Tare (g)	210.54	128.47						
	Water content (%)	10.5	14.2						
Water Content, w (%)		**10.5**	**14.2**						
Dry Unit Wt., γ_d (pcf)		**85.7**	**105.2**						

Entered by:_____
Reviewed:_____

One-Dimensional Consolidation Properties of Soils

(ASTM D2435)

Project: Universal Engineering Sciences
No: M04301-003 (4430.2300012)
Location: Colorado Springs McDonald's
Date: 7/25/2023
By: JDF

Boring No.: BH-2
Sample: BH-2 7.5'
Depth: 7.5'
Sample Description: Brown clay with sand
Engineering Classification: Not requested
Sample type: Undisturbed-trimmed from thin-wall

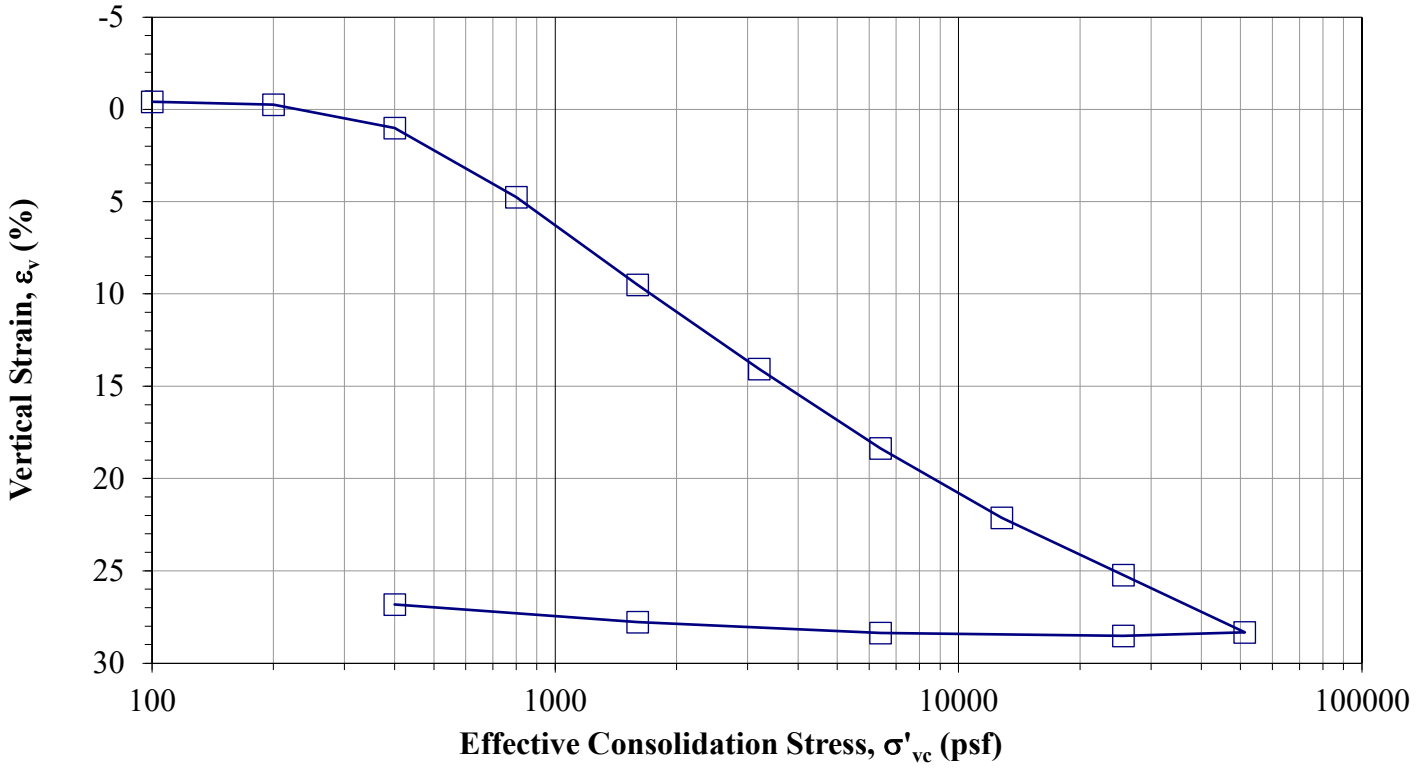
Test method:	A	
Inundation stress (psf), timing:	100	Beginning
Specific gravity, G_s	2.70	Assumed

Water type used for inundation: Tap

	Initial (o)	Final (f)
Sample height, H (in.)	0.766	0.561
Sample diameter, D (in.)	1.923	1.923
Wt. rings + wet soil (g)	371.76	373.10
Wt. rings/tare (g)	292.11	292.11
Moist unit wt., γ_m (pcf)	136.4	189.50
Wet soil + tare (g)	276.26	183.75
Dry soil + tare (g)	270.01	177.52
Tare (g)	210.54	127.13
Water content, w (%)	10.5	12.4
Dry unit wt., γ_d (pcf)	123.4	168.6
Saturation	0.78	-596.90

*Note: C_v, C_c, C_r, and σ_p' to be determined by Geotechnical Engineer.

Stress (psf)	Dial (in.)	1-D ε_v (%)	H_c (in.)	e
Seating	0.0000	0.00	0.7660	0.3657
100	-0.0032	-0.41	0.7692	0.3714
200	-0.0020	-0.26	0.7680	0.3692
400	0.0077	1.01	0.7583	0.3519
800	0.0364	4.75	0.7296	0.3008
1600	0.0729	9.51	0.6931	0.2358
3200	0.1078	14.07	0.6582	0.1736
6400	0.1407	18.37	0.6253	0.1148
12800	0.1695	22.13	0.5965	0.0635
25600	0.1933	25.23	0.5728	0.0212
51200	0.2171	28.34	0.5489	-0.0213
25600	0.2185	28.52	0.5475	-0.0238
6400	0.2173	28.36	0.5487	-0.0217
1600	0.2127	27.77	0.5533	-0.0136
400	0.2054	26.82	0.5606	-0.0006



Comments: Test specimen swelled upon inundation, and at the 100 psf load step.

Entered: _____
Reviewed: _____

One-Dimensional Consolidation Properties of Soils

(ASTM D2435)

Project: Universal Engineering Sciences
No: M04301-003 (4430.2300012)
Location: Colorado Springs McDonald's
Date: 7/25/2023
By: JDF

Boring No.: BH-4
Sample: BH-4 15'
Depth: 15'
Sample Description: Brown clay
Engineering Classification: Not requested
Sample type: Undisturbed-trimmed from thin-wall

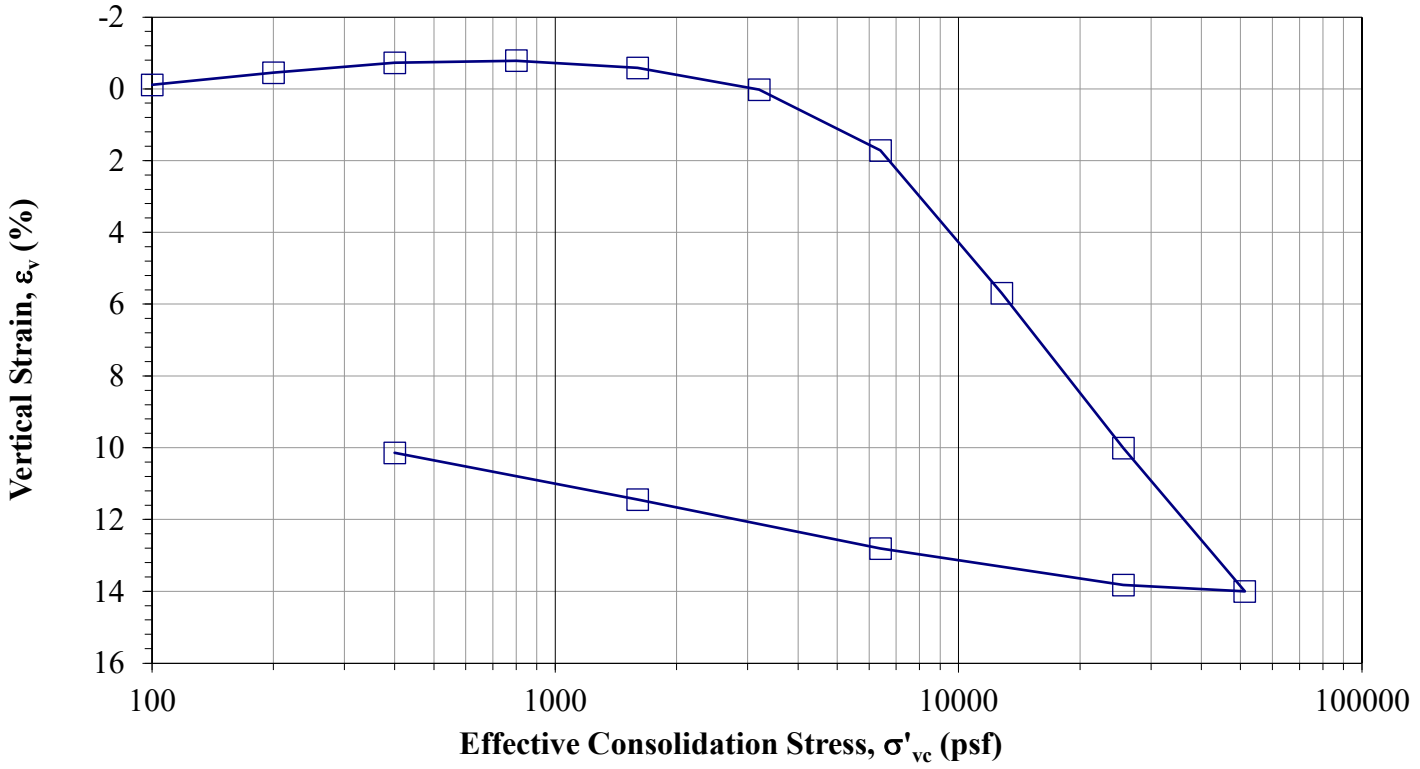
Test method:	A	
Inundation stress (psf), timing:	100	Beginning
Specific gravity, G_s	2.70	Assumed

Water type used for inundation Tap

	Initial (o)	Final (f)
Sample height, H (in.)	0.767	0.689
Sample diameter, D (in.)	1.921	1.921
Wt. rings + wet soil (g)	329.64	331.03
Wt. rings/tare (g)	260.67	260.67
Moist unit wt., γ_m (pcf)	118.2	134.19
Wet soil + tare (g)	219.45	192.14
Dry soil + tare (g)	208.15	182.17
Tare (g)	128.47	121.70
Water content, w (%)	14.2	16.5
Dry unit wt., γ_d (pcf)	103.5	115.2
Saturation	0.61	0.96

*Note: C_v, C_c, C_r, and σ_p' to be determined by Geotechnical Engineer.

Stress (psf)	Dial (in.)	1-D ε_v (%)	H_c (in.)	e
Seating	0.0000	0.00	0.7670	0.6283
100	-0.0009	-0.11	0.7679	0.6302
200	-0.0034	-0.45	0.7704	0.6356
400	-0.0056	-0.73	0.7726	0.6401
800	-0.0060	-0.79	0.7730	0.6411
1600	-0.0045	-0.59	0.7715	0.6379
3200	0.0001	0.02	0.7669	0.6280
6400	0.0132	1.71	0.7539	0.6004
12800	0.0437	5.69	0.7234	0.5357
25600	0.0767	10.01	0.6903	0.4654
51200	0.1074	14.00	0.6596	0.4003
25600	0.1060	13.82	0.6610	0.4033
6400	0.0983	12.81	0.6687	0.4197
1600	0.0878	11.44	0.6792	0.4420
400	0.0778	10.14	0.6892	0.4632



Comments: Test specimen swelled upon inundation and at the 100 psf, 200 psf, 400 psf and 800 psf load steps.

Entered: _____
Reviewed: _____

CHEMTECH-FORD
LABORATORIES

7/25/2023

Work Order: 23G1205
Project: Colorado Springs McDonalds

Universal Engineering Science
Attn: Trae Boman
477 Parkland Drive
Sandy, UT 84070

Client Service Contact: 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags, or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.

NELAP ACCREDITED TNI LABORATORY

Approved By:

Reed Hendricks, Director of Operations

Chemtech-Ford Laboratories
Serving the Intermountain West Since 1953

9632 South 500 West
Sandy, UT 84070
O:(801) 262-7299 F: (866) 792-0093
www.ChemtechFord.com

Certificate of Analysis

Universal Engineering Science
Trae Boman
477 Parkland Drive
Sandy, UT 84070

PO#:
Receipt: **7/18/23 11:45 @ 25.2** °C
Date Reported: 7/25/2023
Project Name: **Colorado Springs McDonalds**

Sample ID: **BH-1 @ 2.5'**
Matrix: **Solid**
Lab ID: **23G1205-01**
Date Sampled: **7/15/23 11:30**
Sampled By: **Kayla Whipple**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Inorganic							
Chloride, Soluble (IC)	ND	mg/kg dry	11	EPA 300.0	7/18/23	7/18/23	
Resistivity	17.3	ohm m	1.0	SSSA 10-3.3	7/19/23	7/19/23	
Sulfate, Soluble (IC)	36	mg/kg dry	11	EPA 300.0	7/18/23	7/18/23	
Total Solids	92.0	%	0.1	CTF8000	7/20/23	7/21/23	

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PO#:
Receipt: **7/18/23 11:45 @ 25.2** °C
Date Reported: 7/25/2023
Project Name: **Colorado Springs McDonalds**

Report Footnotes

Abbreviations

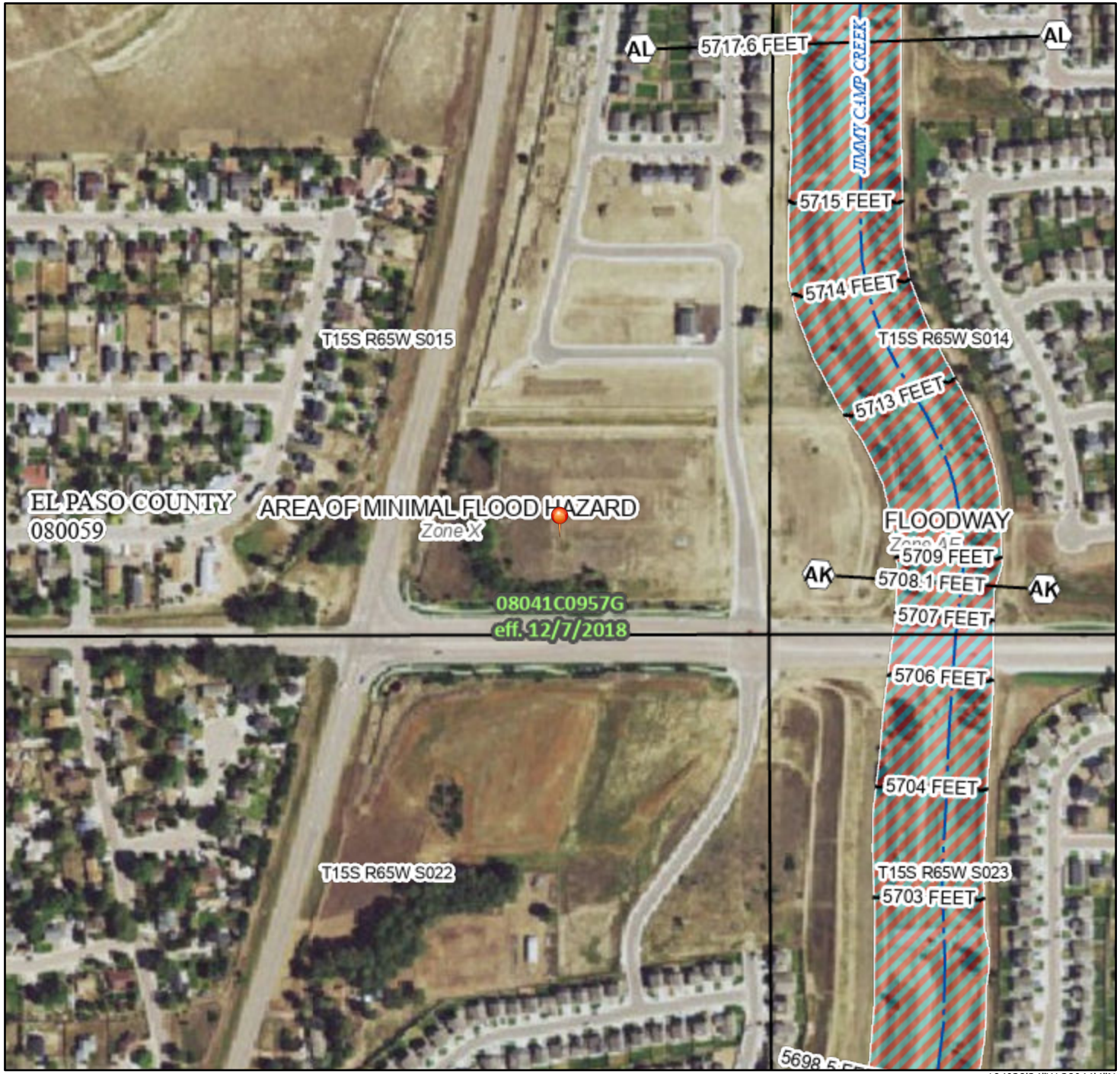
ND = Not detected at the corresponding Minimum Reporting Limit (MRL).
1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.
1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.
On calculated parameters, there may be a slight difference between summing the rounded values shown on the report vs the unrounded values used in the calculation.

APPENDIX E – FEMA FIRM MAP

National Flood Hazard Layer FIRMette

FEMA

104°39'11"W 38°44'32"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

104°38'34"W 38°44'4"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/10/2024 at 11:50 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX F – IDENTIFICATION OF POLLUTANT SOURCES

Outdoor Storage of Materials Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

Vehicle Equipment Maintenance and Fueling Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

Routine Maintenance Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

Onsite Waste Management Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

Non-Industrial Waste Sources Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

Additional Pollutant Sources Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

APPENDIX G – LAND DISTURBANCE/CONTROL MEASURE/STABILIZATION LOG

Land Disturbance / **Control Measure** / Stabilization Log

Date Initiated	Description of Activity	Date Ceased	Identification of BMP / Stabilization Method	Date Implemented	Date Removed

Spill Prevention and Response Plan

(Sample Plan – This plans has been produced to assist the General Contractor. This plan shall be revised and updated as needed by the contractor to fit the specific needs of the construction site and may need to be updated to reflect different type of materials and chemicals).

General Spill Control Practices

Any hazardous or potentially hazardous material that is brought onto the construction site shall be handled properly to reduce the potential for stormwater pollution. In an effort to minimize the potential for a spill of petroleum product or hazardous materials to come in contact with stormwater, the following steps shall be implemented:

- Material Safety Data Sheets (MSDS) information shall be kept on site for any and all applicable materials.
- A spill control and containment kit shall be provided on the construction site
- All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, additives for soil stabilization, concrete, curing compounds and additives, etc.) shall be stored in a secure location, under cover and in appropriate, tightly sealed containers when not in use.
- The minimum practical quantity of all such materials shall be kept on the job site and scheduled for delivery as close to time of use as practical.
- All products shall be stored in and used from the original container with the original product label and used in strict compliance with the instructions on the product label.
- All of the product in a container shall be used before the container is disposed of. All such containers shall be triple rinsed, with water prior to disposal. The rinse water used in these containers shall be disposed of in a manner in compliance with State and Federal regulations and shall not be allowed to mix with stormwater discharges. The disposal of excess or used products shall be in strict compliance with instructions on the product label.
- If utilized, temporary onsite fuel tanks for construction vehicles shall meet all state and federal regulations. Tanks shall have approved spill containment with the capacity required by the applicable regulations. The tanks shall be in sound condition free of rust or other damage which might compromise containment. All tanks in excess of 50 gallons shall be provided with secondary containment (i.e. containment external to and separate from primary containment). Secondary containment shall be constructed of materials of sufficient thickness, density and composition so as not to be structurally weakened as a result of contact with the fuel stored and capable of containing discharged fuel for a period of time equal to or longer than the maximum anticipated time sufficient to allow recovery of discharged fuel. The operator / qualified stormwater manager should familiarize themselves with and follow local and state requirements.

Spill Response Plan

In the event of an accidental spill, immediate action shall be undertaken by the Operator to contain and remove the spilled material.

- All hazardous materials, including contaminated soil, shall be disposed of by the Operator in the manner specified by federal, state and local regulations and by the manufacturer of such products.
- Spilled materials shall be cleaned-up by following the procedures outlined by the MSDS.
- As soon as possible, the spill shall be reported to the appropriate agencies as required by law. As required under the provisions of the Clean Water Act, any spill or discharge entering waters of the United States shall be properly reported. Any spills of petroleum products or hazardous materials in excess of Reportable Quantities as defined by EPA or the state or local agency regulations, shall be immediately reported to the Colorado Department of Public Health and Environment (CDPHE) spill reporting lines.
    - CDPHE Environmental Release and Incident Reporting Line (877) 518-5608.
    - National Response Center - (800) 424-8802
- The Operator shall prepare a written record of any spill and associated clean-up activities of petroleum products or hazardous materials in excess of 1 gallon or reportable quantities, whichever is less. At a minimum, the following shall be documented: Nature of spill, quantity of spill, date/time spill occurred, agency notification if necessary, clean-up procedures used, daily monitoring (for the following 7 days), photographs, and interview(s) with any witnesses of the event.

APPENDIX H – CDPHE ENVIORNMENTAL SPILL REPORTING/CONTROL MEASURE

Environmental Spill Reporting

24—Hour Emergency and Incident Reporting Line
Office of Emergency Preparedness & Response

1-877-518-5608

Updated: June, 2018

Reporting chemical spills and releases in Colorado

General

For all hazardous substance incidents, local emergency response agencies must be notified.

Releases from fixed facilities

The Superfund Amendments and Reauthorization Act (SARA) Title III, requires reporting releases from fixed facilities

Refer to the SARA Title III List of Lists, available from the Environmental Protection Agency (EPA), for the reportable quantity.

The party that owns the spilled material must immediately notify the following agencies or organizations:

- National Response Center (NRC) 1-800-424-8802;
- Colorado Emergency Planning Committee (CEPC), represented by the Colorado Department of Public Health and Environment (CDPHE) 1-877-518-5608; and
- Local Emergency Planning Committee (LEPC) 1-720-852-6600.

In addition to telephone notification, the responsible party must also send written notification describing the release and associated emergency response to both the CEPC (in this case, CDPHE) and the LEPC.

Releases from RCRA facilities

Emergency releases from facilities permitted under the Resource Conservation and Recovery Act (RCRA) are reportable according to the permit requirements.

The permit often requires reporting to CDPHE, even if the amount of the release is less than a reportable quantity under SARA Title III (6 CCR 1007-3 Part 264).

Permitted facilities and generators and transporters of hazardous waste are required to have and implement a contingency plan that describes the actions facility personnel must take in response to fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, surface or ground water at the facility (6 CCR 1007-3 Sections 261, 262, 263, 264 and 265).

Whenever there is an imminent or actual emergency situation, appropriate state or local agencies, with designated response roles as described in the contingency plan, must be notified immediately.

The National Response Center or government official designated as the regional on-scene coordinator must be notified immediately if it is determined that the facility has had a release, fire or explosion that could threaten human health or the environment outside the facility.

CDPHE and local authorities must be notified when the facility is back in compliance and ready to resume operations. In addition, the facility must send a written report to CDPHE within 15 days of any incident that requires implementation of the contingency plan. The contingency plan should include current contact information for notification and submittal of written reports.

Permitted facilities, generators and transporters that store hazardous waste must notify CDPHE within 24 hours of any release to the environment that is greater than one (1) pound and must submit a written report to CDPHE within 30 days of the release (6 CCR 1007-3).

Transportation accidents

Transportation accidents that require reporting:

- Result in a spill or release of a hazardous substance in excess of the reportable quantity (40 CFR Part 302.6)
- Cause injury or death or cause estimated property damage exceeding $50,000.
- Cause an evacuation of the general public lasting one or more hours.

Those that close or shut down one or more major transportation arteries or facilities or result in fire, breakage, spillage, or suspected contamination from radioactive or infectious substances must immediately be reported to the National Response Center.

Refer to the EPA SARA Title III List of Lists for those substances that have reportable quantities.

In addition to the NRC being notified, the local emergency number (9-1-1) must be called and CDPHE should be notified.

Written notification of any transportation accident involving a release of hazardous materials must be provided to the U.S. Department of Transportation within 30 days (49 CFR Part 171.16)

Since hazardous waste is a subset of hazardous materials, transporters who have discharged hazardous waste must notify the NRC and provide a written report to the US Department of Transportation as noted in the above reporting requirements.

The transporter must give immediate notice to the nearest Colorado State Patrol office (8 CCR 1507-8 HMP 5) and the nearest law enforcement agency if the accident or spill involved a vehicle (42-20-113(3) CRS).

Notification and a written report detailing the ultimate disposition of the discharge of hazardous waste must also be provided to CDPHE (6 CCR 1007-2 Section 263.30). This may be a duplicate copy of the US Department of Transportation report

In the event of a spill or discharge of hazardous waste at a transfer facility, the transporter must notify CDPHE within 24 hours if the spill exceeds 55 gallons or if there is a fire or explosion.

Within 15 days of a reportable incident, the transporter must submit a written report of the incident to CDPHE, including the final disposition of the material (6 CCR 1007-2 Section 263.40).

Releases of hazardous waste at a transfer facility may also require notification to the National Response Center and a written report to the U.S. Department of Transportation.

Releases to water

A release of any chemical, oil, petroleum product, sewage, etc., which may enter waters of the State of Colorado (which include surface water, ground water and dry gullies or storm sewers leading to surface water) must be reported to CDPHE immediately (25-8-601 CRS).

Written notification to CDPHE must follow within five (5) days (5 CCR 1002-61, Section 61.8(5)(d)).

Any accidental discharge to the sanitary sewer system must be reported immediately to the local sewer authority and the affected wastewater treatment plant.

Releases of petroleum products and certain hazardous substances listed under the Federal Clean Water Act (40 CFR Part 116) must be reported to the National Response Center as well as to CDPHE (1-877-518-5608) as required under the Clean Water Act and the Oil Pollution Act.

Releases to air

Any unpredictable failure of air pollution control or process equipment that results in the violation of emission

control regulations should be reported CDPHE by 10 a.m. of the following working day, followed by a written notice explaining the cause of the occurrence and describing action that has been or is being taken to correct the condition causing the violation and to prevent such excess emissions in the future (5 CCR 1001-2 Common Provisions Regulations Section II.E).

If emergency conditions cause excess emissions at a permitted facility, the owner/operator must provide notice to CDPHE no later than noon of the next working day following the emergency, and follow by written notice within one month of the time when emission limitations were exceeded due to the emergency (5 CCR 1001-5, Regulation 3 Part C, Section VII.C.4).

Releases from oil and gas wells

All spills or releases of exploration and production wastes or produced fluids which meet the reporting thresholds of the Colorado Oil and Gas Conservation Commission (COGCC) Rule 906 shall be reported verbally to the COGCC within 24 hours of discovery and on the COGCC Spill/Release Report Form 19 within 72 hours of discovery.

Spills or releases are reportable to the COGCC in the following circumstances:

1) the spill or release impacts or threatens to impact any waters of the state, (which include surface water, ground water and dry gullies or storm sewers leading to surface water), a residence or occupied structure, livestock or a public byway;
2) a spill or release in which 1 barrel or more is released outside of berms or other secondary containment; or
3) any spill or release of 5 barrels or more.

COGCC also requires reportable spills or releases be reported to the surface owner and local government. Whether or not they are reportable, spills or releases of any size must be stopped, cleaned up, and investigated as soon as practicable.

If the spill or release impacts or threatens to impact waters of the state, it must also be reported immediately to CDPHE (25-8-601 CRS).

Releases from storage tanks

Petroleum releases of 25 gallons or more (or any size that causes a sheen on nearby surface waters) from regulated aboveground and underground fuel storage tanks must be reported to the Division of Oil and Public Safety (303-318-8547) within 24 hours. If the report is made after business hours, please leave a message on the technical assistance line for the Division of Oil and Public Safety, and contact the 24 hour CDPHE Emergency and Incident Reporting Line. This includes spills from fuel dispensers.

Spills or releases of hazardous substances from regulated storage tanks in excess of the reportable quantity (40 CFR Part 302.6) must be reported to the National Response Center and the local fire authority immediately, and to the Division of Oil and Public Safety within 24 hours. (8-20.5-208 CRS and 7 CCR 1101-14 Article 4).

Owners/operators of regulated storage tanks must contain and immediately clean up a spill or overfill of less than 25 gallons of petroleum and a spill or overfill of a hazardous substance that is less than the reportable quantity.

If cleanup cannot be accomplished within 24 hours, the Division of Oil and Public Safety must be notified immediately (7 CCR 1101-14 Article 4-4).

CDPHE should also be notified in the case of hazardous substance releases as cleanup activities may be covered by state solid or hazardous waste requirements (6 CCR 1007-2, 6 CCR 1007-3).

Any release that has or may impact waters of the state (which include surface water, ground water and dry

gullies or storm sewers leading to surface water), no matter how small, must be reported immediately to CDPHE (25-8-601 CRS).

Releases from pipelines

Releases of five or more gallons of hazardous liquids or carbon dioxide from a pipeline that result in explosion or fire, cause injury or death or cause estimated property damage (including cost of clean-up and recovery, value of lost product and property damage) exceeding $50,000 must be reported immediately to the US Department of Transportation Office of Pipeline Safety (49 CFR Part 195 Subpart B) and the National Response Center.

Releases of five or more gallons of hazardous liquids or carbon dioxide from interstate pipelines that do not involve explosion or fire, injury or death or property damage exceeding $50,000 should be reported to the US Department of Transportation Office of Pipeline Safety within 30 days after the incident.

Releases of natural gas from intrastate pipelines that cause injury or death, property damage in excess of $50,000 (including the cost of lost product), closure of a public road, or evacuation of 50 or more people must be reported immediately to the Colorado Public Utilities Commission, Pipeline Safety Group (4 CCR 723-11-2).

Releases of natural gas or liquefied natural gas (LNG) from interstate pipelines that cause injury or death, property damage in excess of $50,000 (including the cost of lost product), or results in an emergency shutdown of the facility must be reported immediately to the National Response Center and the US Dept of Transportation Office of Pipeline Safety.

Releases of oil, petroleum products or other hazardous liquids from interstate and intrastate pipelines that have or may enter waters of the State of Colorado (which include surface water, ground water and dry gullies or storm sewers leading to surface water) must be reported to CDPHE immediately (25-8-601 CRS). CDPHE should also be notified of releases to soil, as cleanup activities may be covered by state solid or hazardous waste requirements (6 CCR 1007-2, 6 CCR 1007-3).

Radiological accidents, incidents, and events

CDPHE must be notified of any condition that has caused or threatens to cause an event, which meets or exceeds the criteria specified in (6 CCR 1007-1) RH 4.51 and RH 4.52 of the State of Colorado *Rules and Regulations Pertaining to Radiation Control*. Reportable events include lost radioactive materials, lost radiation producing machines, over-exposures to persons, contamination events and fires or explosions involving radioactive materials.

Depending upon the severity of the event, notification may be required immediately, within 24 hours, or within 30 days. In most cases, a written follow-up report is also required.

If you are unsure of the proper notification requirement, please contact CDPHE immediately. Telephone event notifications can be made to the CDPHE Radiation Program at any time by calling 1-303-877-9757.

Notification Numbers

Colorado Department of Public Health and Environment toll-free 24-hour environmental emergency and incident reporting line: (877) 518-5608 (24-hour)

National Response Center
(800) 424-8802 (24-hour)

State Oil Inspector (Colorado Division of Oil & Public Safety-Above & Underground Storage Tank Regulators)
(303) 318-8547

APPENDIX I – STORM EVENT LOG

Rain Gauge Data		
Date:	**Location:**	**Reading in decimal fraction of inches**

APPENDIX J – INSPECTION AND SAMPLING REPORTS

CONSTRUCTION STORMWATER SITE INSPECTION REPORT

Facility Name		Permittee	
Date of Inspection		Weather Conditions	
Permit Certification #		Disturbed Acreage	
Phase of Construction		Inspector Title	
Inspector Name			

	YES	NO
Is the above inspector a qualified stormwater manager? (permittee is responsible for ensuring that the inspector is a qualified stormwater manager)	☐	☐

INSPECTION FREQUENCY	
Check the box that describes the minimum inspection frequency utilized when conducting each inspection	
At least one inspection every 7 calendar days	☐
At least one inspection every 14 calendar days, with post-storm event inspections conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosions	☐
• This is this a post-storm event inspection. Event Date: _____	☐
Reduced inspection frequency - Include site conditions that warrant reduced inspection frequency	☐
• Post-storm inspections at temporarily idle sites	☐
• Inspections at completed sites/area	☐
• Winter conditions exclusion	☐

	YES	NO
Have there been any deviations from the minimum inspection schedule? If yes, describe below.	☐	☐

INSPECTION REQUIREMENTS*
i. Visually verify all implemented control measures are in effective operational condition and are working as designed in the specifications
ii. Determine if there are new potential sources of pollutants
iii. Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges
iv. Identify all areas of non-compliance with the permit requirements, and if necessary, implement corrective action
*Use the attached **Control Measures Requiring Routine Maintenance** and **Inadequate Control Measures Requiring Corrective Action** forms to document results of this assessment that trigger either maintenance or corrective actions

AREAS TO BE INSPECTED			
Is there evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system or discharging to state waters at the following locations?			
	NO	YES	If "YES" describe discharge or potential for discharge below. Document related maintenance, inadequate control measures and corrective actions **Inadequate Control Measures Requiring Corrective Action** form
Construction site perimeter	☐	☐	
All disturbed areas	☐	☐	
Designated haul routes	☐	☐	
Material and waste storage areas exposed to precipitation	☐	☐	
Locations where stormwater has the potential to discharge offsite	☐	☐	
Locations where vehicles exit the site	☐	☐	
Other: _____	☐	☐	

CONTROL MEASURES REQUIRING ROUTINE MAINTENANCE

Definition: Any control measure that is still operating in accordance with its design and the requirements of the permit, but requires maintenance to prevent a breach of the control measure. These items are not subject to the corrective action requirements as specified in Part I.B.1.c of the permit.

Are there control measures requiring maintenance?	NO	YES	
	☐	☐	If "YES" document below

Date Observed	Location	Control Measure	Maintenance Required	Date Completed

INADEQUATE CONTROL MEASURES REQUIRING CORRECTIVE ACTION

Definition: Any control measure that is not designed or implemented in accordance with the requirements of the permit and/or any control measure that is not implemented to operate in accordance with its design. This includes control measures that have not been implemented for pollutant sources. If it is infeasible to install or repair the control measure immediately after discovering the deficiency the reason must be documented and a schedule included to return the control measure to effective operating condition as possible.

	NO	YES	
Are there inadequate control measures requiring corrective action?	☐	☐	If "YES" document below

	NO	YES	
Are there additional control measures needed that were not in place at the time of inspection?	☐	☐	If "YES" document below

Date Discovered	Location	Description of Inadequate Control Measure	Description of Corrective Action	Was deficiency corrected when discovered? YES/NO if "NO" provide reason and schedule to correct	Date Corrected

REPORTING REQUIREMENTS

The permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances. The division may waive the written report required if the oral report has been received within 24 hours.

All Noncompliance Requiring 24-Hour Notification per Part II.L.6 of the Permit

a. Endangerment to Health or the Environment

Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident (See Part II.L.6.a of the Permit)

This category would primarily result from the discharge of pollutants in violation of the permit

b. Numeric Effluent Limit Violations

- o Circumstances leading to any unanticipated bypass which exceeds any effluent limitations (See Part II.L.6.b of the Permit)
- o Circumstances leading to any upset which causes an exceedance of any effluent limitation (See Part II.L.6.c of the Permit)
- o Daily maximum violations (See Part II.L.6.d of the Permit)

Numeric effluent limits are very uncommon in certifications under the COR400000 general permit. This category of noncompliance only applies if numeric effluent limits are included in a permit certification.

Has there been an incident of noncompliance requiring 24-hour notification?	NO	YES	
	☐	☐	If "YES" document below

Date and Time of Incident	Location	Description of Noncompliance	Description of Corrective Action	Date and Time of 24 Hour Oral Notification	Date of 5 Day Written Notification *

*Attach copy of 5 day written notification to report. Indicate if written notification was waived, including the name of the division personnel who granted waiver.

After adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the individual(s) designated as the Qualified Stormwater Manager, shall sign and certify the below statement:

"I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit."

Name of Qualified Stormwater Manager	Title of Qualified Stormwater Manager
Signature of Qualified Stormwater Manager	Date

Notes/Comments

APPENDIX K – SWMP AMENDMENT LOG

AMENDMENT LOG

Amendment No.	Date	Brief Description of Amendment	Prepared By