

# STORMWATER MANAGEMENT PLAN

For

**COR40000**

**STATION 53**

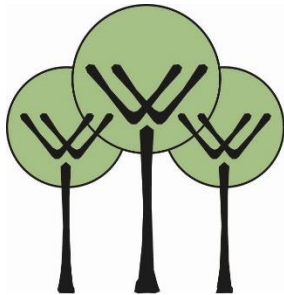
**PERMITTED FACILITY**

**COR 407471**

**CERTIFICATION #**

**WONDERLAND HOMES**

**OWNER/OPERATOR**



**WONDERLAND**  
**HOMES**  
*it's about character...*

**WonderLand @ STATION 53, LLC**  
**5660 Greenwood Plaza Blvd. Suite 101-N**  
**Greenwood Village, CO 80111**

SWMP PREPARED

**January 15, 2019**

**Revised for Website display 4/13/20**

Prepared by



**OPEN 8 Consulting**  
**303-495-8336**

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# INTRODUCTION

This Stormwater Management Plan (SWMP) has been prepared on behalf of Wonderland @ Station 53, LLC by Open 8 Consulting for a small land development for single-family residential (detached) homes.

The purpose of this SWMP is to adequately address the requirements of the Colorado Discharge Permit System (CDPS) General Permit for Stormwater Discharges Associated with Construction Activities COR-400000 (General Permit or permit), effective from April 1, 2019 to March 31, 2024;

Preparation of this SWMP includes; but is not limited to, addressing the following issues:

- The relationship between the designated Owner and Operator for this permit. (if they are not the same);
- Establish the policies, practices and criteria the operator will follow for the site with respect to the construction activities regulated under the General Permit specific to this project;
- Ensure the SWMP adequately addresses and meets specific elements, including, but not limited to, inspection, maintenance, and reporting as required by the General Permit specific to this site.
- Identify significant materials and potential sources of pollution that may reasonably be expected during the phases of construction related to the operator's activities;
- Describe the methods to meet stabilization requirements of the General Permit.
- Ensure practices and control measures are selected, installed, implemented and maintained in accordance with good engineering and hydrological practices to minimize potential storm water discharges from this construction site.
- Describe and identify the property limits within the scope of this permit - including how and/or where storm flow enters or leaves - are managed over the period of permit coverage;
- Describe and discuss areas or control measures:
  - located off site;
  - owned, or controlled by others adjacent to this permitted facility; and,
  - where uncoordinated activities by other operations may impact control measures located within the permitted area;

# PERMIT SUMMARY INFORMATION

## IDENTIFICATION OF OWNER / OPERATOR.

This facility was permitted as follows:

- Duties of Owner and Operator are separate
- Duties of Owner and Operator are managed by Owner  
The Owner/operator has contracted with a company to manage the day to day activity.
- Duties of Operator and Owner are separate with a developer or land management company serving as the owner
- Duties of Owner and Operator are managed by Developer prior to sale of finished lots to Homebuilder.

Identification and contact information for the owner and operator is provided in Appendix A - Site Contact Information.

## LAND OWNERSHIP

The permitted property ownership was transferred Wonderland @ Station 53, LLC as older, large acre homesites and had no active earth disturbing activities at the point of land purchase.

## SITE INFORMATION

The following is a summary of information collected for purposes of preparing the permit application:

PROJECT/SITE NAME	LATITUDE / LONGITUDE
Station 53	Latitude: 39.7939N Longitude: -105.122W

## PROJECT LOCATION / ADDRESS:

Site is generally located East of Chester Way between 56th Place and 61st Ave. A copy of the map showing permit boundaries, as originally submitted, is included as an attachment in Site Reference Documentation section.

**City:** Wheat Ridge

**County:** Jefferson

**Zip Code:** 80033

Legal Description for sub-divided areas:

Not Applicable    Legal Description:

See information regarding specific lots/tracts located **in Error! Reference source not found.**

# PART I

## COVERAGES SPECIFIC TO PERMITTED AREA

This SWMP identifies and incorporates specific coverages described in CDPS COR40000 that are anticipated for this permitted area. Items not discussed are either presumed to be superseded by the application process, incorporated by reference or will not apply to operations within this permitted area. Should site conditions change to require specific discussion of items omitted, the SWMP will be updated prior to the commencement of activities necessitating said change.

### TYPES OF DISCHARGES AUTHORIZED

This plan was developed to address potential discharges to state waters of stormwater and specified non-stormwater associated with construction activity. This includes, but is not limited to:

#### ALLOWABLE STORMWATER DISCHARGES

- Stormwater discharges associated with construction activity.
- 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).
- Stormwater discharges associated with dedicated asphalt, concrete batch plants and masonry mixing stations associated with this permit and not covered under an alternative permit.

#### ALLOWABLE NON-STORMWATER DISCHARGES

The following discharges are allowed if they are identified in accordance with the permit and if they have appropriate control measures in accordance with the permit:

- Discharges from uncontaminated springs that do not originate from an area of land disturbance.
- Discharges to the ground of concrete washout water associated with the washing of concrete tools and concrete mixer chutes. (Exclusive of concrete washout water which leaves the site as surface runoff or which reaches receiving water)s:
- Discharges of landscape irrigation return flow.
- Discharges resulting from emergency firefighting activities.

#### LIMITATIONS ON COVERAGE

The following discharges are not specifically allowed under the permit:

- Discharges of non-stormwater, except the authorized non-stormwater discharges listed above are not eligible for coverage under this permit.
- Discharges Currently Covered by another Individual or General Permit
- Discharges Currently Covered by a Water Quality Control Division Low Risk Guidance. See attachments located within Division Low Risk Guidance section.

#### PERMIT CERTIFICATION AND SUBMITTAL PROCEDURES

As it has been determined as necessary to prepare a Stormwater Management Plan for this site and the permittee(s) has applied for, and received, a certification under COR 400000, the terms

and conditions of Part IA. 3 a-e, g-I & k are incorporated into this plan through issuance of the permit certification by the State of Colorado. Information provided during the application process is included in the above section titled PERMIT SUMMARY INFORMATION

## SIGNATORY REQUIREMENTS

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

- For a corporation: By a responsible corporate officer, defined as:
  - 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 (Note: CDPHE has indicated minimum signatory positions to be a Director. Project Manager will not be accepted), or
- 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.
  - 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.
- For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official.

## COMPLIANCE DOCUMENTATION (FOR 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. (special note: with the implementation of the new CEOS permitting system it is unclear when co-permittee signatures will be required. As such, the CEOS system will make the final determination on who will sign the various forms for submittal.) 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.”

## *COMPLIANCE DOCUMENTATION (NON-SUBMITTED) SIGNATURE REQUIREMENTS*

### *GENERAL DOCUMENTATION*

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.

### *INSPECTION REPORT SIGNATORY REQUIREMENTS*

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.”

## **PERMIT TERMINATION**

When all construction earth disturbing activities are completed and all disturbed areas have met the criteria for final stabilization requirements the permittee(s) shall submit an Inactivation Notice to the state in order to terminate the permit.

### **SALE OF RESIDENCE TO HOMEOWNER**

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

- A. The residential lot has been sold to the homeowner(s) for private residential use;
- B. A certificate of occupancy, or equivalent, is maintained on-site and is available during division inspections;
- C. The lot is less than one acre of disturbance;
- D. All construction activity conducted on the lot by the permittee is complete;
- E. The permittee is not responsible for final stabilization of the lot; and
- F. 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.

## EFFLUENT LIMITATIONS

This SWMP specifically addresses the requirement for control measures to be used to meet effluent limitations as follows:

- Implementing control measures to minimize the discharge of pollutants from all potential pollutant sources at the site.
- Assure installation of control measures prior to commencement of activities that may contribute pollutants to stormwater discharges.
- Ensure control measures selected are, designed, installed and maintained in accordance with good engineering, hydrologic and pollution control practices.
- Ensure implementation of structural and/or nonstructural control measures that effectively minimize erosion, sediment transport, and the release of other pollutants related to construction activity

## STORMWATER POLLUTION PREVENTION REQUIREMENTS

This SWMP outlines the structural and/or nonstructural control measures, implemented at this permitted facility, that effectively minimize erosion, sediment transport, and the release of other pollutants related to construction activity.

## REQUIREMENTS FOR CONTROL MEASURES USED TO MEET EFFLUENT LIMITATIONS

Control measures implemented at the site are designed to minimize pollution or degradation of state waters. These control measure 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 CONTROL MEASURES*

The specific control measures identified below are, as appropriate, discussed in greater detail in the sections specific to Materials Handling and Potential Sources of Pollution. This cross reference will allow the SWMP to group classes of control measures with a appropriate classifications of significant materials and potential pollutants.

## VEHICLE TRACKING CONTROL

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 the requirements for stormwater runoff from all disturbed areas. There is an expanded discussion on policy and control measures for vehicle tracking control in the Potential Pollution Sources section of this SWMP.

## DISTURBED AND SOIL STORAGE AREAS

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. Control measures selected for this purpose must address the following:

- Minimize sediment in discharges through filtering, settling, or straining;
- 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,
- Control measure(s) must be appropriate for stormwater runoff from disturbed areas and for the expected flow rate, duration, and flow conditions anticipated at the site (i.e., sheet or concentrated flow).

## **OUTLETS FROM BASINS AND IMPOUNDMENTS**

Outlets that withdraw water from or near the surface shall be installed when discharging from basins and impoundments, unless infeasible. This is specific to all temporary sediment basin or traps and, depending on size and configuration may also include berms and ditches.

Such outlets must be installed such that they are, at a minimum, an emergency overflow built such that any releases will not erode the structure and cause an upset condition. Specifically, this requires, at a minimum, an emergency overflow structure installed as the lowest point in a berm with a substrate of compacted fill or geotextile fabric equivalent, and rip rap or other velocity control device that extends from the point of overflow to the point discharge from bare soils to a stabilized or contained area. (Note: this reflects a minimum standard. Temporary sediment basins should also provide for a filtered release mechanism in addition to an emergency release unless site conditions or phasing make such an item impractical or infeasible.)

## **PRE-EXISTING VEGETATION NEAR RECEIVING WATERS**

The owner/operator is required to maintain pre-existing vegetation, or equivalent control measures, for areas within 50 horizontal feet of receiving waters unless infeasible. Issues that determine if this is infeasible include, but are not limited to, the scope of the work (home building versus stream restoration), the grading requirements of the site, the phase of the project, the location of permanent stormwater detention facilities, utilities, stream crossing or other design features. When it is possible to maintain pre-existing vegetation, it will be so noted on the site map. When it is not feasible to maintain pre-existing vegetation equivalent or greater control measures will be put into place to protect receiving waters.

## **MINIMIZATION OF SOIL COMPACTION**

Soil compaction must be minimized for areas where infiltration control measures will occur or where final stabilization will be achieved through vegetative cover. However, it must be noted that in Colorado, mitigation for swelling soils, MS4 requirements for soils compaction as well as most common engineering designs make this requirement impractical. As such, where infiltration control measures will occur or where final stabilization will be achieved through vegetative cover site management practices, such as roughening/ripping for soils infiltration, following design criteria for permanent post construction infiltration systems will be implemented as part of the construction standards. Additionally, rototilling, chisel plowing or discing soils for sod or seed will be implemented as part of final stabilization practices.

## **TOP SOIL PRESERVATION**

Unless infeasible, topsoil shall be preserved for those areas of a site that will utilize vegetative final stabilization. Factors affecting feasibility are twofold: First, is there pre-existing top soil? And, if so, is it a quality top soil? Many sites in Colorado are located in areas where the pre-existing vegetation is minimum, and the soil is of poor quality. In such cases it is common that as a part of final stabilization top soil, or significant amendments to on site soils will be imported during final stabilization. Second, is there room to store top soils and will the final stabilization require top soil? Many infill or small lots simply have no room for storing top soils. In such cases it is not uncommon that the final stabilization will require little or no top soil as part of its final stabilization.

When it is practical to preserve and store top soil appropriate control measures for containment and temporary stabilization will be implemented and stock pile locations will be noted on the site map.

## **EXPOSED SOILS AND STEEP SLOPES**

The permit requires the operator to minimize the amount of soil exposed during construction activity, including the disturbance of steep slopes. Issues that determine if this is feasible include, but are not limited to, the scope of the work, the grading requirements of the site, the phase of the project and logistical considerations. Where exposed soils or steep slopes exist they will be contained as appropriate and temporary stabilization requirements if such areas are to remain idle for more than 14 days.

## **PRACTICES FOR OTHER COMMON POLLUTANTS**

### **BULK STORAGE, 55 GALLONS OR GREATER**

Bulk storage, 55 gallons or greater, of 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. There is an expanded discussion on policy and control measures for secondary containment practices in the Potential Pollution Sources section of this SWMP.

### **CONTROL MEASURES DESIGNED FOR CONCRETE WASHOUT WASTE**

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. 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. The concrete washout location shall 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.

There is an expanded discussion on policy and control measures for cementitious materials and waste concrete containment practices in the Potential Pollution Sources section of this SWMP.

## STABILIZATION REQUIREMENTS

The following requirements will be implemented for this permitted facility.

### *TEMPORARY STABILIZATION*

Per the permit, 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.

The permit also stipulates that areas 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. In such instances The SWMP will:

- Document the constraints necessitating the alternative schedule.
- Provide the alternate stabilization schedule.
- Identify all locations where the alternative schedule is applicable on the site map.

Methods of temporary stabilization are provided on the page labeled Control Measure Specifications Identification of areas that have been temporary stabilized and the method of said stabilization are noted on the site map.

### *FINAL STABILIZATION*

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 where ground disturbance occurred, 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.

Final stabilization must be designed and installed as a permanent feature. Site specific stabilizations methods are discussed in DESCRIPTION OF FINAL STABILIZATION below.

## MAINTENANCE

All Control measures identified in the SWMP will be maintained in effective operating condition and protected from activities that would reduce their effectiveness.

### *ROUTINE MAINTENANCE*

Per the terms of the permit, the permittee(s) (operator) 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, must be conducted to maintain an effective operating condition.

### *CORRECTIVE ACTIONS*

Per the terms of the permit the permittee(s) (operator) 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, is identified (i.e., new or replacement control measures become necessary), the following corrective action requirements apply:

- The operator must install or repair the control measure immediately.
- The permittee is in noncompliance with the permit until the inadequate control measure is replaced or corrected and returned to effective operating condition.
- Additionally, the permittee(s) (operator) 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 a control measure immediately after discovering the deficiency, the following must be documented and kept on record to:
  - Describe why it is infeasible to initiate the installation or repair immediately; and
  - Provide a schedule for installing or repairing the control measure and returning it to an effective operating condition as soon as possible.
- If applicable, the permittee(s) (operator) 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(s) (operator) must also clean up any contaminated surfaces to minimize discharges of the material in subsequent storm events.

### *MAINTENANCE TIMING*

Per standard industry practice, the act of ordering supplies and/or scheduling the work is a maintenance “action” and is the first step in responding to either routine maintenance or corrective actions as detailed above. As such, corrective actions reported under the site inspection requirements are presumed “active” as soon as the inspection report is transmitted to the individual(s) on the Operator’s staff or the third party responsible for resolving the item.

The permit expects, however, that some other temporary measure may need to be taken when waiting for the maintenance item to be completed. For example, scarifying the VTC until more rock arrives, or restricting vehicle traffic from disturbed areas during muddy conditions.

### *ADDITIONAL MAINTENANCE CONSIDERATIONS*

Additional considerations for maintenance timing should consider issues that would cause potentially larger issues than the recommended maintenance action. For example: When site access would create ruts, additional tracking or other damage due to muddy conditions; Where projected phasing negates the need for the recommended maintenance in the short term; or, when safety considerations – injury or life – outweigh the environmental benefits.

### *DISCHARGES TO AN IMPAIRED WATERBODY*

As a part of the SWMP preparation this permitted facility has been evaluated to determine if it is subject to the requirements of Total Maximum Daily Load (TMDL), Waste Load Allocations (WLA) and or location to Outstanding Waters. At the time of SWMP preparation no impaired waters or waters subject to TMDLs were listed on the State of Colorado website on or near the site for which this project could reasonably be expected to contribute.

**INCORPORATION BY REFERENCE:**

This plan further incorporates, by reference all general requirements listed in the General Permit under *Part 1B3 General Requirements*.

## PART II

### STORMWATER MANAGEMENT PLAN

This SWMP is prepared in two parts: the guidance narrative and the stormwater management plans (site plans) and was prepared in accordance with good engineering, hydrologic and pollution control practices. Changes or additions may be required to address changes in conditions at the site.

The Narrative was prepared by Open 8 Consulting. The site plans were prepared by a separate engineering firm as part of the City of Denver grading and stormwater permit approval process

#### QUALIFIED STORMWATER MANAGER

The operator has identified individuals, who through previous experience with the construction stormwater regulations, specialized training, and by acceptance of the operator's internal policy for stormwater and erosion control are deemed Qualified Stormwater Managers.

Additionally, the trade partners and vendors specific to stormwater and erosion control compliance are required to provide certification that principle staff, and all staff responsible for making determinations on permit compliance are also Qualified Stormwater Managers.

The operators principal Qualified Stormwater Managers responsible for implementing the SWMP in its entirety, additional Qualified Stormwater Managers employed by the operator, and the principal third party Qualified Stormwater Managers utilized on site are listed on the main web page for this project as *Site Contacts and Qualified Stormwater Managers*.

#### SPILL PREVENTION AND RESPONSE PLAN

A formal Spill Prevention Control and Countermeasures Plan (SPCC) is not planned for this project. However, a spill prevention and response plan has been included within the Spill Response Procedures web page. This includes methods and actions to be taken in response to a spill of petroleum or other non-stormwater related pollutant(s) that have the potential to discharge from the site. The spill response procedures must be implemented to prevent the release of pollutants. The plan additionally outlines post spill event reporting requirements, including the 24-hour notification process for hazardous materials

#### MATERIALS HANDLING

Significant materials used during construction, with the potential to impact stormwater discharges, will be stored, managed, used, and/or disposed of consistent with the permit requirements and in a method that minimizes the potential for contamination of stormwater discharges.

The SWMP describes and locates 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. This includes but is not limited to; specific materials or chemicals, activities or practices, and certain classes of materials

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.

The following section, Potential Sources of Pollution, identifies control measures selected initially or planned for later phases as needed, to minimize impacts for materials handling and significant materials that could contribute pollutants to runoff. As applicable, the exact locations of these materials, as well as the specific control measures selected to control them are located on the site map.

## POTENTIAL SOURCES OF POLLUTION.

This SWMP identifies potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction activity from the site. As applicable, the locations of these potential pollutants, as well as the specific control measures selected to control them are located in the anticipated schedule **Error! Reference source not found.** and/or on the site map.

The following discussion of potential sources of pollutions is organized in the order listed in the permit under Part1.c.2.a.ii. Within this listing are many potential pollutant sources that may overlap specific categories. For example: On-site waste management practices and non-industrial waste control measures are interconnected as wood waste generated during framing and worker generated food wrappers or bottles are generated in the same vicinity and disposed of in the same dumpsters. More interconnected are outdoor storage activities for chemicals, vehicle and equipment maintenance and fueling, routing maintenance activities, and significant materials handling. Control measures for all of these are significantly similar or identical and combine the elements designed for, at a minimum, containment for spill prevention and management of disturbed soils. Additional pollution sources, other than those specifically listed in the Materials Handling and Potential Source of Pollutants identified in the General Permit are worked into these items where appropriate. If other, unrelated, significant materials or potential sources of pollutants are anticipated on site they will be added below.

## POTENTIAL POLLUTANTS

Any items that could enter a storm sewer system and/or potentially contribute to degradation of State Waters, be they identified under the effluent limitations standard, materials handling section or as a potential source of pollutants, must adhere to the following guideline: Stormwater runoff downgradient from the potential pollutant must flow to at least one control measure to minimize its potential contribution to offsite discharge. This may be accomplished through filtering, settling, containment or straining.

## DISTURBED AND STORED SOILS

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.

Control measures selected for this purpose must address the following:

- minimize sediment in discharges through filtering, settling, or straining or equivalent measures;
- be selected, designed, installed and adequately sized in accordance with good engineering, hydrologic and pollution control practices.

- control measure(s) must contain or filter flows in order to prevent the bypass of flows without treatment; and,
- control measure(s) must be appropriate for stormwater runoff from disturbed areas and for the expected flow rate, duration, and flow conditions anticipated at the site (i.e., sheet or concentrated flow).

#### *DISTURBED AREAS*

Prior to areas being disturbed by grading or excavation, and for stockpiles, transit areas located off a pre-established paved surface, materials storage where significant materials may exist and any areas where preexisting vegetation is disturbed must have at a minimum, a down gradient perimeter linear control measure(s), or equivalent. Such control measure(s) must be sufficient to control flows anticipated from the acreage in the immediate upgradient area.

During initial disturbance and site grading it may be impractical to meet this standard as the immediate upgradient area will be subject to over-excavation. In such instances, additional control measure(s) must be implemented to supplement the main perimeter control. This may include surface roughening for infiltration, ditches, compacted berms, terracing or utilization of haul roads to mimic any of the above control measures. (for example, a compacted raised haul road serves as a compacted berm, a lowered haul road serves as a ditch and grading phases often mimic site terracing.)

#### *SOIL STORAGE AREAS*

Stockpiles of soils, rock, landscape materials and other loose particulates have a pollutant potential based on:

- The size and weight of the material;
- Contaminants mixed with the material;
- Location of the material in relationship to receiving waters, paved roadways, inlets or other sensitive areas;
- Expected length of time material to remain in place; and,
- Overall size of stockpile.

Stockpiles should have appropriately sized containment controls (e.g earthen berms, diversion ditches, silt fence, etc.) Whenever possible, a buffer area of at least three to five feet should be maintained between the toe of the stockpile and the containment control. If such stockpiles are located immediately adjacent to the perimeter control, then additional controls may be required if the perimeter control is not sufficient to control both the upgradient acreage and the stockpile.

Stockpiles that will be in place for more than 14 days with no activity (no additions to or removal from the stockpile) require the installation of temporary or permanent erosion control such as blankets, tackifier, hydromulch, surface roughening and/or seeding, and such controls should be installed as soon as possible.

Standard industry practices differentiate the following from long term storage stockpiles as follows:

#### *SMALL MATERIALS PILES*

Small material piles, including landscaping material, squeegee, and sand, located within a protected materials storage area, on flat areas located away from paved surfaces, receiving waters and inlets, or other sensitive areas that are contained within appropriately sized BMPs,

may not need additional protection. If additional protection is required, controls may include, but are not limited to compacted soil berms, diversion ditches and linear erosion controls such as wattles or silt fences.

#### *BACKFILL*

Back fill consists of materials removed from foundations or trenches that will be placed back in the excavation or trench within a short period of time (usually 8 to 72 hours), or trench bedding material such as squeegee or sand. The best control for backfill materials is to place it up-gradient to the area it was removed from so that any flow off the backfill pile will be contained within the excavated area. If such materials are placed adjacent to receiving waters, paved roadways, inlets or other sensitive areas, then additional protection may include, but is not limited to, linear erosion control such as compacted soil berms, diversion ditches, wattles or silt fences.

### VEHICLE TRACKING OF SEDIMENTS

Vehicle tracking controls shall either be implemented to minimize vehicle tracking of sediment from disturbed areas, or the areas where vehicle tracking occurs shall, at a minimum consist of at least one control measure to minimize sediment in the discharge to be accomplished through filtering, settling, or straining. (Down gradient inlet protection does not qualify as such).

Effective structural vehicle tracking control measures include significant structural control measure (e.g. medium to large rip rap vehicle tracking control pads, cattle guards, or one of many trademarked control devices, and moderate structural control measures such as geotextile mats with rubber or bamboo bumpers, smaller riprap or other improvised devices.

Effective non-structural vehicle tracking control measures include but are not limited to: limiting vehicle access to unpaved areas, cleaning/scraping mud and sediment off equipment or tires before re-entering paved areas, and regularly scheduled and as-needed street sweeping/cleaning.

Per Part I.D.5.(a)vi (scope of inspections) the primary focus is where vehicles exit the site. Any area where vehicles transition from a paved surface (e.g. asphalt, concrete, gravel roads, fire access roads, other previously established unimproved travel surfaces, etc.) to previously undisturbed areas or active disturbances vehicle tracking controls must be considered. Some guidelines to determine the appropriate controls are as follows:

- Main access point(s) to the site should have a significant structural control measure device appropriate to the anticipated traffic.
- Temporary main access points in conjunction with, or as a temporary detour for, the main access point(s) should have, depending on the anticipated traffic and duration of use, a moderate structural control measure or a significant structural control measure.
- Main access point – dedicated entrance only - If an access point can be designated, and strictly enforced as “entrance only” and there is no potential for stormwater leaving the site uncontrolled from the location, it is allowable for no structural control measure to be installed. (Non-structural control measures including, but not limited to sweeping and access control are still recommended.)
- Temporary access controls within the site, such as access behind the curb or newly created paved surfaces where access is required for extended use, stockpiling or significant materials delivery, require installation of, at a minimum, moderate structural controls.

- Daily use areas, including, but not limited to, minimal access for concrete trucks, materials delivery, limited equipment access (such as a loader or forklift entering the area, performing work and then leaving without returning for the same operation) must consider if site conditions, such as mud, could necessitate, at a minimum, a medium structural control measure. In dry conditions such access points may forgo structural tracking control measures if strict adherence to the following is in place:
  - Where stormwater flows will flow onto paved areas at least on down gradient linear control is in place.
  - Any resultant tracking must be swept as soon as possible, but no later than the close of the business day.
  - Any linear control in place are protected from damage. (straw wattles carefully removed and reinstalled properly after access; wattles designed for limited access remain structurally sound), or
  - Linear controls that will be removed for access must be reinstalled or replaced once the need for the access is completed.

## MANAGEMENT OF CONTAMINATED SOILS

If contaminated soils are known to be present prior to project implementation this will be discussed in the main portion of the SWMP. If contaminated soils are encountered, all activity shall be stopped until the situation can be assessed. The Superintendent will be contacted for further direction. Small amounts of affected soils should be isolated from clean soils (placed on and covered with plastic or placed in 55-gallon drums) whenever possible until a remediation plan can be implemented. For larger amounts, or for specifically regulated items, such as asbestos containing concrete pipe, a specific management plan will be developed and included in the SWMP. All such instances will be noted on the site map.

## LOADING AND UNLOADING OPERATIONS

Control measures for loading and unloading will be determined by the type of materials being addressed and where they are to be stored. Issues to consider are sufficient tracking control, significant materials containment and location with respect to down gradient controls and avoidance of areas of concentrated flow. When practical, deliveries of materials to a stabilized staging area or materials storage area may benefit with overall site management.

## OUTDOOR STORAGE ACTIVITIES

Storage of building products exposed to precipitation and or sheet flow must consider the type of material and the potential that material has to contribute to pollutants leaving the site. Erodible building materials are addressed in disturbed soils and soils storage areas above. Chemicals and fertilizers are addressed in Liquid Or Dry Significant Materials And Potential Pollutants. Considerations for outdoor storage activities include, but are not limited to:

- The potential for tracking caused by the delivery or day-to-day use of the materials.
- Distance from areas of concentrate or significant sheet flow, and,
- The potential of precipitation to cause sediment or chemical pollutants to mix with stormwater flows.

If materials to be delivered to a site can be maintained on a paved surface, and precipitation will not cause significant materials, chemicals or other potential pollutants to be comingled with stormwater runoff it is less likely to create off site discharges than if the same material was

delivered to a non-paved materials storage area where increased tracking could occur from transporting material across disturbed soils.

## **VEHICLE AND EQUIPMENT MAINTENANCE AND FUELING**

Vehicles entering the construction site should be properly maintained to prevent spills and leaks of hazardous fluids that would be exposed to stormwater. Vehicles used onsite will be inspected for leaks. Leaking vehicles will not be allowed to stay onsite, and the vehicle operator will be responsible for any necessary cleanup. Vehicles will not be parked in or near retention areas, natural drainage areas, storm sewer inlets or surface waters. If necessary, drip pans will be utilized for secondary protection of onsite vehicles until leaking vehicles can be removed from the site.

Generally, fuel, greases and other maintenance fluids used for light duty equipment will be used and removed from the site or stored in closed construction trailers by the subcontractors. During fueling or maintenance operations items will be kept on mobile vehicles and not stored onsite.

Vehicle and equipment maintenance activities that must occur on site should be done in a manner to limit the potential discharge of petroleum products to paved surfaces. Any discharges of petroleum products should be managed as discussed in management of contaminated soils. When practical, all fueling activities should occur from storage tanks that are self-contained and do not remain on site. All vehicles and subcontractors' fueling equipment are responsible for providing spill containment. Fuel tanks and fueling areas set up on site must follow the appropriate guidelines for containment and discharges of petroleum products should be managed as discussed in management of contaminated soils. Finally, any maintenance or fueling activities which resulting in a spill must be assessed under the spill prevention documentation and reported as required.

## **SIGNIFICANT DUST OR PARTICULATE GENERATING PROCESSES**

The most common dust generating process is active excavation, grading operations and stockpiling and (passive) wind blowing across these areas. Applying water or soil surfactants is the most common practices during active construction. Additional control measures are perimeter control fencing to break up wind patterns. Temporary stabilization requirements for inactive areas serve as appropriate control measures.

Saw cutting of concrete or other materials is a significant dust or particulate generating process. Spraying water on the area being cut is a standard industry practice. However, this process may cause cut materials to travel as sediment laden water with the potential to enter a storm sewer or discharge offsite. Additional linear and/or filtering control measures may be necessary in addition to dust remediation.

## **ROUTINE MAINTENANCE ACTIVITIES**

Potential pollutants related to routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc are all individually likely to occur. Fuel, greases and other maintenance fluids and herbicides, fertilizers and pesticides will be used and removed from the site by the subcontractors. Unless otherwise noted, during fueling or maintenance operations items will be kept on mobile vehicles and not stored onsite. All these items must be

contained as described in containment and vehicle and equipment maintenance and fueling section. Additionally, any spills must follow the guidelines in the spill response plan and removal of contaminated soils.

## **ON SITE WASTE MANAGEMENT & NON-INDUSTRIAL WASTE SOURCES**

Waste from products used on site (e.g. waste piles, liquid wastes, dumpsters, etc.), trash and debris and non-industrial waste sources such as worker trash and portable toilets are significant sources of potential pollutants.

Solid waste may be stored onsite provided it is managed to prevent discharges to storm sewer system, offsite or to receiving waters. Large waste, that which will not readily fit in a dumpster such as brush, trees, large concrete tear-out or large building materials may be collected and stored in a pile. Any such piles which have the potential for precipitation that runs-off from the pile to enter storm sewer systems, discharge offsite or flow to receiving waters require additional containment equal to the standards outlined in soil storage areas.

Generally, solid waste generated on this site will be disposed of in dumpsters provided by an outside contractor. The dumpsters will be kept at convenient locations and a licensed company will be contracted to empty the dumpsters as needed. The site project managers/superintendents will be responsible for monitoring the site to ensure that all site personnel and subcontractors utilize the proper waste disposal practices and facilities. Liquid wastes, including petroleum products and paint, are not allowed to be disposed of in solid waste dumpsters. Liquid hazardous wastes will be removed from the site and disposed of in accordance with all applicable Federal, state and local regulations.

The site project managers/superintendents will be responsible for monitoring the site to ensure worker generated trash and blown in trash is gathered and placed in dumpsters.

Portable sanitary facilities will be provided in a convenient, level location away from traffic areas, storm drains, or retention areas. Portable sanitary facilities must be staked or secured to the ground to prevent tipping over. A licensed company will be hired to maintain and clean the units, inspect the units for deficiencies, and keep the units in good working order. Sanitary waste will be cleaned as required by local regulations. The site project manager/superintendents will be responsible for ensuring that the units are properly utilized and maintained.

## **DEDICATED ASPHALT OR CONCRETE BATCH PLANTS AND MASONRY MIXING STATIONS**

It is not anticipated that a dedicated concrete or asphalt batch plant will be included with this project.

Portable masonry mixers are divided into two categories: small portable and fixed location.

Small portable masonry mixers are small enough to fit onto a vehicle or are often small trailer mounted, mechanical units with bagged cementitious materials and bagged (>100 pound) or small material piles of sand or gravel, added manually. These units may be active in a single location for less than half day to 5 - 7 days before being moved. As such, these units are not considered a

dedicated masonry mixing station. None-the-less, during operations these units, the bagged materials and sand or gravel must be contained. The containment, which may be combined with perimeter control, must prevent discharges to storm sewer system, offsite or to receiving waters. This may be accomplished through linear barriers, earthen berms or other containment controls. Additional control measures for containing bagged cementitious material are required and control measures for materials stock piles may be necessary in addition the primary containment.

Fixed location portable masonry mixers are larger units feed by 500 pound or larger bags or steel silos. While these units may move during the course of the project, they are designed for use in a single location for several weeks or months. During operations these units, the cementitious materials and sand or gravel must be contained. The containment must prevent discharges to storm sewer system, offsite or to receiving waters. This may be accomplished through linear barriers, berms or other containment controls. Additional control measures for containing for materials stock piles may be necessary if it is located outside the primary containment.

ADDITIONAL POTENTIAL POLLUTION SOURCES AND/OR SIGNIFICANT MATERIALS

Potential Pollution Source --- Significant Material	Date Added	Phase or Activities Associated With This Potential Pollution Source	Control Measure Selected (See site map for location(s))

## IMPLEMENTATION OF CONTROL MEASURES

Control measures must be implemented to control all pollutant sources at the site. It is highly recommended to have redundant control measure in place to eliminate reliance on any one (or two) control measures. Where practicable this SWMP does that.

Control measures must be located:

- Prior to the stormwater leaving the control of the permittee, i.e.,
- Where the permittee can ensure the control measures' proper operation and maintenance;
- Prior to discharge to a receiving water defined as Waters of the United States; and
- Prior to discharge into a municipal storm sewer or other stormwater collection system not owned by the permittee (unless specific permission is granted).

## DESIGN/IMPLEMENTATION SPECIFICATIONS

Design/implementation specifications for structural and non-structural control measures in use at the permitted facility, as well as specifications for other control measures that could be reasonably anticipated for this facility, are included within the page labeled *Control Measure Specifications*. Additional site-specific details for control measures that have been specifically designed, sized, or involve specific engineered details may be contained within the plan sets provided by the engineer of record.

The specifications detail the implementation of each 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.

## DOCUMENTED USE AGREEMENTS

Documented Use Agreements in effect at project initiation:  YES  NO

Documented Use Agreements implemented after project initiation:  YES

Documented use agreements, if they are in place, are catalogued within the Other Documentation web-page for this project.

Documented use agreements between the operator and the owner or operator of any control measures located outside of the permitted area, utilized by this permittee's construction site for compliance with this permit, but not under the direct control of this operator are subject to documented use agreements to ensuring such control measures being utilized by the operator's construction site, are properly maintained and in compliance with all terms and conditions of the permit.

As appropriate for the specific control measure subject to the documented use agreement all information required of and relevant to any such control measures will be specified in the agreement. As appropriate installation specifications, design specifications and maintenance requirements will be located within the Control Measure Specifications page and/or in the engineer's plan set prepared for the MS4.

# SITE DESCRIPTION

## NATURE OF CONSTRUCTION ACTIVITY

Primary function of the construction activity?

- Residential       Commercial       Pipeline and utilities  
 Highway & transportation       Oil and Gas  
 Non-Structural and Other (specify):

This SWMP covers all construction activities necessary for the construction and final stabilization at the permitted facility, including, but not limited to:

- Clearing and grubbing.
- Grading for lot elevations, roads, storm water structures, etc.
- Over-excavation for soil preparation;
- Installation of underground and above-ground utilities;
- Sidewalk and driveway installation and minimal road improvement;
- Stockpiling;
- Homebuilding;
- Landscaping, and,
- Other activities as needed.

## PROPOSED SCHEDULE

PROJECT START DATE

Estimated: January 1, 2020

Actual: March 9, 2020

ESTIMATED FINAL STABILIZATION DATE: December 31, 2021

Approximate activity specific sequencing is provided as Table 1 –Construction Sequence in **Error! Reference source not found..**

The land development will occur prior to homebuilding activities with the exception of early work on model homes. The land development portion of the project will be performed by Ground Works Development under the direction of the Permittee. Grounds Works is under contract to provide all installation and maintenance of control measures. (Less self inspections which are to be performed by Open 8 consulting on behalf of Wonderland Homes.)

Wonderland Homes created the position of Land Development Manager to oversee and manage the purchase and initial development of property. See **Error! Reference source not found..** The Land Develop manager will oversee Ground Works Development and will receive copies of all pertinent inspections and documentation (SWMP Amendment 4/3/20)

Homebuilding activities are based on lot by lot, or combined foundations for townhomes. As not all lots are active at the same time, multiple phases will be active at any given time during the project. As such, the schedule provides an estimated time for the completion of each of the major

tasks as well as the recommended control measures associated with building a single-family home or a townhome. The start date, based on foundation excavation, for each lot, tract or other identified area will be noted in a separate log attached to the inspection documentation.

Table 1 includes an outline of the control measures that were anticipated during the planning phase of this project. Changes to control measures occurring after the publishing of this SWMP will not be addressed in this table. Substitutions, additions or subtractions of control measures will be noted on the site map and/or in appropriate specifications. Timing is approximate and assumes good weather and no unforeseen circumstances

## PLANNED IMPLEMENTATION OF CONTROL MEASURES

### SCHEDULING GUIDELINES.

The initial work for this project comprised of non-earth disturbing activities, structure, fences, trash & debris and, most significantly, tree removal as well as other activities which did not cause soil disturbance. The initial control measures included down gradient inlet protection and vehicle tracking control. The initial perimeter control installation was delayed until the trees on the perimeter could be removed. This is an unusual method, but necessary in this case because the trees were located on the perimeter. It was determined that there was enough preexisting vegetation that felling and removing trees, without additional earth disturbing activity would not cause an increased potential for sediment to leave the site. As soon as the trees are removed from the perimeter the controls will be installed.

Down-gradient perimeter controls, as indicated on the site plans, will be installed before ground disturbance or construction activities performed by the operator begin. Additional control measures will be installed immediately prior to start of activities, and/or when installation can control sediment and/or erosion due to site disturbance.

Control measures will remain until construction is completed and final stabilization is achieved to an elevation below each control measure, and storm water discharge from previously disturbed areas no longer require control measures to address potential pollutants leaving the site.

Control measure implementation is generally more effective when done alongside the various stages of construction. While some phasing is obvious, other items, such as phased seeding and final stabilization, may be more difficult when considering seasons, cost effectiveness of staging or mobilization, and disturbance from additional activities. Such items cannot be predicted and will be addressed as conditions warrant.

The projected implementation of control measures by phase is listed in Table 1 Construction Sequence & Control Measures located in . This table identifies the major phases and classifications of control measures. The table shows control measures added in progression. For example. Control measures added in the initial phase (such as a concrete washout) are assumed to be in place through interim phase. The table will list the Concrete washout in the initial phase but not in the interim phase. The specific structural control(s) located on site are shown on the site map.

### ESTIMATES OF ACREAGE

The following are estimates of the construction site acreage:

Permitted area to be disturbed: Approximately 11 acres  
 Total project area (including areas permitted by others): 11 Acres  
 Total area of common plan of development: NA

## SUMMARY OF EXISTING SOILS DATA

Soils information was collected from the USDA/NRCS Web Soils Survey which identified this locations as the Golden Area, Colorado, Parts of Denver, Douglas, Jefferson, and Park Counties. A summary of the soils conditions most relevant to this permit are shown below. See **Error! Reference source not found.** for copies of the downloaded soils survey.

Report – RUSLE2 Related Attributes								
Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed or the first mineral horizon below an organic surface horizon. Organic horizons are not displayed.								
Golden Area, Colorado, Parts of Denver, Douglas, Jefferson, and Park Counties								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
102—Nunn clay loam, 0 to 2 percent slopes								
Nunn	85	200	C	.28	5	43.0	26.0	31.0
103—Nunn clay loam, 3 to 5 percent slopes								
Nunn	90	180	C	.28	5	43.0	26.0	31.0

## ESTIMATED EXISTING VEGETATION

The current site stabilization for the largest portion of the site is estimated at 75% uniform vegetative cover. This was determined by a visual survey during an October 15, 2019 site visit. Currently the site is established as residential with grazing and feeding of a limited number of animals. At the time of the site visit the property appears to have been inactive for an extended period of time.

A review of Google Earth Pro goes back no farther than 1993. However, from that point in time to the time of SWMP preparation the buildings and basic land use and vegetation were the same as today. In this time frame the agricultural land adjacent to the property was converted from crop production to housing.

The determinations above were made by observation during the site visit, described above, by Brian Garber of Open 8 Consulting. Mr. Garber’s 35 years’ experience in crop production and construction stormwater provides sufficient knowledge to make simple determinations on uniform vegetative cover as pertains to the construction stormwater program. Reference photos of site conditions at the time of SWMP preparation are included in APPENDIX C

## NON-STORMWATER DISCHARGES

Non stormwater discharges anticipated at this site include:

- Discharges from uncontaminated springs that do not originate from an area of land disturbance.
- Discharges to the ground of concrete washout water associated with the washing of concrete tools and concrete mixer chutes. Control measures to manage this activity and prevent concrete washout water from leaving the site as surface runoff or reaching receiving waters are located in within the page labeled *Control Measure Specifications*

Discharges of landscape irrigation return flow.

Offsite discharge of stormwater collected in foundations, footings or other depressions for which removal is required to prevent soils compaction issues or to facilitate scheduling. Control measures to manage this activity are located within the page labeled *Division Low Risk Guidance*.

Discharge of ground water utilizing the low risk discharge guidance. Control measures to manage this activity are located in **Error! Reference source not found.** and **Error! Reference source not found.**

Discharge of ground water under separate permit. If checked this permit information is available upon request.

Discharges resulting from emergency firefighting activities are neither anticipated nor always known unless they occur on lots under direct control of the permittee. If the builder becomes aware of such an occurrence it will be noted on the site map.

## AREAS RECEIVING DISCHARGE

Project drainage is mainly from the north to the south. Any overland sheet flow leaving the site enters the Wheat Ridge MS4 through stormdrain inlets on the adjacent properties. See also receiving water below.

## IMMEDIATE SOURCE RECEIVING DISCHARGE

Currently, and following construction of an onsite detention basin to gather flows from streets and lots, the site discharges to the MS4 through storm drains.

## RECEIVING WATERS

Any overland sheet leaving the site could potentially discharge to the Joechum ditch. (special note: this discharge point will disappear as the ditch is being piped as part of a separate project, thus eliminating this possibility.) Additionally, prior to the connection of the detention basin the site could potentially discharge to the regional detention basin located across Ridge Road from the project. Discharges, be they overland or to the regional detention basin, have the potential to travel to Clear Creek (approximately a mile from the site) which is tributary the South Platte River, the ultimate receiving water. Clear Creek confluences with the South Platte River approximately 7 miles south from the site.

Identification of Municipal Separate Storm Sewer systems receiving discharge from the site: City of Wheatridge.

## STREAM CROSSINGS

During SWMP preparation no stream crossings were identified within the construction site permitted area.

During SWMP preparation the following stream crossings were identified within the construction site permitted area. Control measures specifications to protect these areas are located within the page labeled *Control Measure Specifications*

The stream crossings are further identified on the site map located on the main page within the section labeled *Site Plan(s)/Maps*.

Stream Name	Dry	Ephemeral	Crossing Planned	Full Disturbance	Approximate Location
Disturbed Upland Areas			Control Measures Planned		

## SITE MAP

Maps showing the overall layout of the construction site, ongoing activity and location of control measures are provided in **Error! Reference source not found.** . The plan reflects recommended control measures to protect the site from sediment and pollutant discharge

### MAP CONTENTS

The site map is required to have, at a minimum, the following:

- Construction site boundaries;
- Flow arrows that depict stormwater flow directions on site and runoff directions
- All areas of ground disturbance including borrow and fill;
- Areas used for storage of building materials, equipment, soil or waste;
- Areas used for storage of soil; or waste;
- locations of all waste accumulation areas, including areas for liquid, concrete, masonry, and asphalt;
- locations of dedicated asphalt, concrete batch plants and masonry mixing stations;
- locations of all structural control measures;
- locations of all non-structural control measures;
- 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
- locations of all stream crossings located within the construction site boundary.

If any of these items are not present on site they will not be referenced on the site map.

### UPDATES TO MAP

As the site evolves, the site plans will be updated to reflect lots under the operator's control and the current control measures present on the site at any given time. Handwritten changes to the site map are acceptable

## FINAL STABILIZATION

Final stabilization includes those measures taken to control pollutants in stormwater after soil disturbing activities are complete. Practices typically implemented to achieve final stabilization include paved areas, (asphalt and gravel), structures, sod, seed and mulch, blankets, shrubs, trees and decorative landscape material such as bark mulch and rock.

Final stabilization is achieved when ground disturbing activities have been completed and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance vegetative cover/density, or equivalent permanent physical erosion reduction methods have been employed.

Control measures specific to final stabilization will be broken into 2 distinct categories, common areas and tracts and lots. A landscape plan for the tracts and common areas has not yet been finalized. It will be added to the SWMP as it becomes available. As a part of the final SWMP Erosion Control Plans the detention basin and tracts will be stabilized with seed and crimp mulch until such time as the final landscape plan is developed and implemented. A seed mix for this stabilization is included within the page labeled *Control Measure Specifications*.

Homebuilding lots will not have individual landscape plans. The Owner/Operator will be responsible for stabilizing the front yards. This will include sod, trees, shrubs and landscape mulch. The homeowner will be responsible for stabilizing the rear yards.

**Seed Mix for Sodded areas.** Sod is produced off site and brought to the site by the landscape subcontractors. Each sod farm uses a proprietary seed blend which is not released to the public. However, in Colorado it is typical for this to consist of 4 - 7 varieties of blue grass. Each of the varieties is included to increase resistance to disease or drought, as well as to adapt to sun vs. shade.

## DESCRIPTION OF FINAL STABILIZATION

Final stabilization within this permitted area will include individual lot landscaping consisting of a mix of sod, shrubs and trees, landscape mulch and rock. In this instance, final stabilization is planned to exceed the required 70 percent of the pre-existing conditions. There is no formal, per lot design. Open areas will have a permanent irrigation system installed with sod, shrubs and other decorative landscape materials.

Landscape plans have been prepared and are included as part of the MS4 submittal and are located within the page labeled as MS4 Documentation. (note; these plans are not always complete at the time of SWMP preparation.) As plans are finalized, they will be included in the SWMP.

No formal landscape plan will be developed for this project beyond the description provided above. As appropriate, specifications for final stabilization control measures are located in

## POST CONSTRUCTION STORMWATER FACILITIES

- Permitted facility has permanent post construction stormwater control measures
- These control measures were constructed under the direction of the Operator/owner(s).
- Following final stabilization and permit termination the Owner will be responsible for long term maintenance of these control measures.
- Following final stabilization and permit termination the entity responsible for long term maintenance of these control measures is, to the best of the preparer's, Operator's and Owner's ability, identified as:

Organization: Station 53 Homeowners Association

Contact Information. This entity has not yet been created. The owner will maintain contact information for this association once it is formalized.

## DESCRIPTION OF PERMANENT POST CONSTRUCTION STORMWATER CONTROL MEASURES

The project includes a permanent detention basin. Long term maintenance of this facility is the responsibility owner/operator and/or the neighborhood association(s) to be created, controlled and eventually turned over for exclusive management by the Owner/Operator.

## SWMP REVIEW AND REVISION

A record of SWMP changes, amendments or revisions made during the course of the project must be maintained. Any changes must include the date and identification of the changes. Changes to the SWMP may occur in any of the following ways:

- Handwritten notations in the body of the SWMP;
- Replaced pages of the SWMP showing strike and replace text;
- Notations on the site map;
- Replacing a cluttered and difficult to read map with a new copy reflecting only the current site conditions. (an exception to the inclusion of the date for changes will be in this instance. All control measures transferred from the old map will be treated as “existing” at that point in time.); or,
- Inclusion of new documentation such as newly implemented documented use agreements, newly issued groundwater discharge permits, management plans for contaminated soils, etc. Such documentation will be noted in OTHER DOCUMENTATION and, unless otherwise noted, will be included in Amendments

Amendments that must be made to the SWMP includes, but is limited to:

- changes in design, construction, operation, or maintenance of the site requiring implementation of new or revised control measures;
- instances where the SWMP proves ineffective in controlling pollutants in stormwater runoff in compliance with the permit conditions;
- where control measures identified in the SWMP are no longer necessary and are removed; and,
- When corrective actions are taken onsite that result in a change to the SWMP.

## REVISIONS

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. It is logical that a single change may have to be noted in more than one location. For example, a new control measure is implemented for a previously unknown potential pollutant source. In such a case the pollutant source would have to be identified and its location shown on the site map. Additionally, a new control measure specification may need to be added.

## 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 that the SWMP is complete and

compliant with all terms and conditions of the permit. As this certification is required upon request and as part of the request the State provides the most recent copy of this certification, a copy of the actual form is not provided in this SWMP.

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.

## SITE INSPECTIONS

While site inspections must be conducted in accordance with the following requirements, these reflect a minimum frequency and do not affect the permittee's responsibility to implement and maintain control measures in effective operating condition as prescribed in the SWMP. Proper maintenance of control measures may require more frequent inspections.

### COMMENCEMENT OF SITE INSPECTIONS

Site inspections shall start within 7 calendar days of the commencement of construction activities on site. This requirement includes, but is not limited to, the installation of initial control measures such as vehicle tracking control, silt fence, wattles, etc.

### QUALIFICATIONS 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 Inspector must be a qualified stormwater manager. The permittee has identified the qualified stormwater managers for this permit in **Error! Reference source not found.**

### INSPECTION FREQUENCY

Permittees must conduct site inspections in accordance with one of the following minimum frequencies. The permittee has the option to change the inspection frequency during the course of the project if such a change is noted. With the exception of inspections at completed sites/areas this option is not anticipated. Should the permittee choose to implement one of the other inspection frequency options it will be noted on the corresponding inspection report

The Inspection interval selected at the initiation of the project is noted below:

- At least one inspection every 7 calendar days.
  - Site discharges to a water body designated as an outstanding water by the Water Quality Control Commission.
- 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.
- Alternate schedule approved by the Division. Documentation of the approval of the alternative inspection schedule by the division will be included as "other documentation"

### REDUCED INSPECTION FREQUENCY

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

#### 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.

## 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:

- All construction activities resulting in ground disturbance are complete;
- All activities required for final stabilization, in accordance with the SWMP, have been completed
  - Exception: When the application of seed that has not occurred due to seasonal conditions or the necessity for additional seed application to augment previous efforts; and
- The SWMP and or Site Map has been amended to locate those areas to be inspected in accordance with the reduced schedule allowed for in this paragraph.

Site meets criteria for inspections at completed sites. Operator has implemented inspection at least once every 30 days as of this date:

## WINTER CONDITIONS INSPECTIONS EXCLUSION

This project will not meet the conditions of this exclusion. As such, it is excluded from this SWMP.

## DELAY IN INSPECTIONS

The permit provides no exception to the inspection schedule other than those identified above. However, the permittee will add the following delay to meeting every 7 or 14 day inspection schedule: In instances where weather or other conditions would impede the inspector to safely access the site the inspection will be delayed until the inspector is able to access the site. This delay is most likely to be triggered, but not limited to, snow, blowing snow and/or road closures. This may include conditions on site, or on the travel routes to the site if highways are closed or the Colorado State Patrol, or local authorities have issued requests for limited travel. If a delay occurs due to such conditions the inspection will be rescheduled as soon as possible, usually the next day. Additionally, such conditions will be noted on the subsequent inspection report.

## INSPECTION SCOPE

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:

- 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; and
- Locations where vehicles exit the site.

## INSPECTION REQUIREMENTS

Visually verify whether all implemented control measures are in effective operational condition and are working as designed per the appropriate specification to minimize pollutant discharges.

- Determine if there are new potential sources of pollutants.
- Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.

- Identify all areas of non-compliance with the General Permit requirements

If necessary, implement corrective action in accordance with Part IB.1.c of the permit as outlined in the Maintenance timing section of this SWMP.

### INSPECTION REPORTS

The permittee must keep a record of all inspections conducted for each permitted site.

Completed inspection reports are located:

- In the back of this 3-ring binder     In a separate 3-ring binder
- Compiled in an electronic format. Copies are available with 24 advance notice.
- Date Inspection report format switched from paper to electronic retention:        (Reports previously recorded on paper format may be archived offsite. Copies available upon request.)

### INSPECTION REQUIRED ELEMENTS

The Inspection reports utilized by the permittee identify any incidents of noncompliance with the terms and conditions of this permit. The inspection report includes:

- the inspection date;
- name(s) and title(s) of personnel conducting the inspection;
- weather conditions at the time of inspection;
- phase of construction at the time of inspection;
- estimated acreage of disturbance at the time of inspection;
- description of the minimum inspection frequency utilized when conducting each inspection;
- deviations from the minimum inspection schedule; and,

location(s) of:

- discharges of sediment or other pollutants from the site;
- control measures needing maintenance;
- and identification of inadequate control measures;
- identification of additional control measures needed that were not in place at the time of inspection

### POST INSPECTION REQUIREMENTS

After adequate corrective action(s) and maintenance have been taken, as outlined in the MAINTENANCE section of this SWMP, or where a report does not identify any incidents requiring corrective action or maintenance, the report shall contain a statement as noted in COMPLIANCE DOCUMENTATION (NON-SUBMITTED) SIGNATURE REQUIREMENTS.

### INSPECTION CONSIDERATIONS - CITY OF DENVER

Due to phasing of the project there are two different permits specific to the City of Denver permit number. The City requires a separate inspection report of each of its permit numbers. As such, inspections for this facility will be divided into two separate reports for each visit. These will be identified as Phase 1 and Phase 2

## PART III

### PERMIT STANDARD CONDITIONS

This stormwater plan incorporates by reference all items of the permit identified as *Standard Permit Conditions - Part II.A-K. & P-Y.*

### REPORTING REQUIREMENTS

#### 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:

- 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
- 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).

#### 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 below:

#### 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.

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. In this case the new owner or operator must submit an application.

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

- The current permittee notifies the Division in writing 30 calendar days in advance of the proposed transfer date; and
- 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
- The division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit; and,
- Fee requirements of the Colorado Discharge Permit System Regulations have been met.

## MONITORING REPORTS

If deemed required, monitoring results must be reported at the intervals specified in this permit per the requirements of 40 CFR 122.41(l)(4).

## 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.

## 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:

- Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;
- Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;
- Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit; and,
- 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. The division may waive the written report required under subparagraph 6 of this section if the oral report has been received within 24 hours.

## 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).

## 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.

## BYPASS

A bypass is 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).

## 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 the permit.

## NOTICE OF 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

## PROHIBITION OF BYPASS

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

- the bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
- 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
- proper notices were submitted to the division.

## UPSET

An upset is 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).

## EFFECT OF AN UPSET

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements the 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).

The conditions necessary for demonstration of an upset by a permittee who wishes to establish the affirmative defense of upset, demonstrated through properly signed contemporaneous operating logs, or other relevant evidence that all the following conditions were met:

- an upset occurred and the permittee can identify the specific cause(s) of the upset;
- the permitted facility was at the time being properly operated and maintained;
- the permittee submitted proper notice of the upset as required in Part II.L.6.(24- hour notice); and
- 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.

## BURDEN OF PROOF

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

## RETENTION OF RECORDS

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.

### ON-SITE RECORDS RETENTION

The SWMP for this site is located:

- On site
  - In the construction office.
  - In a secure container on site.
  - In a consolidated construction office located near that site.
- Compiled in an electronic format accessible to site staff at all times. Copies are available with 24 advance notice.
- Date SWMP report format switched from paper to electronic retention:  
(Reports previously recorded on paper format may be archived offsite. Copies available upon request.)

See the INSPECTION REPORTS sections for location of inspection reports.



